Department of Design and Construction

Eric Adams
Mayor

Thomas Foley, P.E.
Commissioner

DESIGN CONSULTANT GUIDE

May 2025

LETTER FROM THE COMMISSIONER

Dear Partners,

I'm delighted to share the release of DDC's updated Design Consultant Guide for Public Buildings. A roadmap to the design and construction process at DDC, the guide reflects our commitment to effective, efficient project delivery in service of building extraordinary public works for New Yorkers. Its purpose is to give you, our partners, the tools you need to succeed.

Public works are the backbone of our city, making it a better place to live, work, and play. DDC's projects bring high quality design to New Yorkers in every community and each borough, whether for an iconic new library or the humble yet critical renovation of a maintenance garage. They must stand the test of time, lasting for generations while adapting our city to meet emerging demands like climate change. And they must be delivered efficiently – on time and on budget – since no design can serve communities while it's sitting on a desk.

Today at DDC, we are building better, faster, and more cost effectively than ever. Thanks to the dedication of our incredible community of public servants, architects, engineers, builders, industry leaders, and legislators, we are taking steps to improve every part of the process. Yet we must continue to do better.

This guide marks some of the significant progress we have made, encompassing new tools like alternative delivery and streamlined interagency design review. But it's not set in stone. It is also an invitation to continue improving the process with us.

Thank you for working with us to plan, design, and build better for the City of New York.

Thomas Foley, PE, CCM, DBIA, NAC

Commissioner

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THE DEPARTMENT OF DESIGN AND CONSTRUCTION

The New York City Department of Design and Construction (DDC) was established in 1996 to provide project management services for the City of New York's capital construction projects. Serving 28 Sponsor Agencies through its two Divisions, Public Buildings and Infrastructure, DDC builds and renovates public buildings, streetscapes, plazas, and subgrade infrastructure.

THE DIVISION OF PUBLIC BUILDINGS

Design opportunities throughout DDC's Division of Public Buildings range from major new public buildings to retrofits and upgrades of existing buildings. Regardless of scale or scope, every project represents an opportunity to enhance the public realm and achieve the highest quality of design and construction for the City's public buildings and spaces. The design process is a collaborative effort between the Consultants, the DDC Project Team, the Sponsor Agencies, and Regulatory Agencies, to fully explore programmatic requirements, site conditions, context, budget, and other factors leading to the development of a creative, responsible, and functional design in full compliance with all applicable codes, local, state and federal laws, specifications, standards, and project objectives.

DDC projects include cultural institutions, libraries, government offices, laboratories, sanitation facilities, emergency shelters, transportation facilities, firehouses, health clinics, senior centers, child care centers, courts, correctional facilities, police precincts, and emergency medical stations. Sponsor Agencies currently include: Department of Cultural Affairs (DCLA), Department of Parks and Recreation (NYC Parks), Brooklyn Public Library (BPL), New York Public Library (NYPL), Queens Public Library (QPL), Department of Environmental Protection (DEP), Department of Health and Mental Hygiene (DOHMH), Office of the Chief Medical Examiner (OCME), Department for the Aging (DFTA), Department of Youth and Community Development (DYCD), Administration for Children's Services (ACS), Agency for Childhood Development (ACD), Department of Citywide Administrative Services (DCAS), Department of Homeless Services (DHS), Department of Consumer Affairs (DCA), Human Resources Administration (HRA), Office of Court Administration (OCA), Department of Transportation (DOT), Taxi and Limousine Commission (TLC), Department of Sanitation (DSNY), Department of Correction (DOC), Fire Department (FDNY), Police Department (NYPD), Office of Emergency Management (OEM), Department of Information Technology and Telecommunications (DOITT), Department of Education (DOE), Department of Probation (DOP), the Mayor's Office of Criminal Justice (MOCJ), and NYC Emergency Management (NYCEM).

The specific project goals of each Sponsor Agency are served by individual DDC Program Units. The Program Units make up the principal organizational framework of the Public Buildings Division, and are supported by technical, design, budget, and contract processing resources within DDC. The Program Units are directly responsible for managing projects from the initial program requests by the Sponsor Agency through design, construction completion, and acceptance for occupancy. Each Program Unit is headed by a Program Director whose primary responsibilities are to guide and oversee the implementation of a Sponsor Agency's capital construction program.

DESIGN AND CONSTRUCTION EXCELLENCE

The City of New York is committed to achieving excellence in design and construction across its portfolio of public works by delivering quality infrastructure and public buildings that contribute to a thriving, equitable,

sustainable and resilient city for all New Yorkers. As part of this commitment, the Department of Design and Construction's Design + Construction Excellence program builds on a strong tradition of innovation in architecture and engineering through strategies and practices that balance aesthetics, functionality, cost, constructability, and durability to bring form and meaning to public space.

Design + Construction Excellence encompasses all aspects of project delivery, from capital project planning through design, construction, commissioning, and close-out, to ensure on time and on budget delivery of exemplary civic projects. Integrated project delivery practices include enhanced project initiation and management tools, quality-based selection and best value procurements, performance evaluation and management, knowledge sharing, and continuing education. Together, these strategies ensure that all capital projects delivered to the City are inspiring, enduring, practical, constructible, and economical.

Achieving Design + Construction Excellence requires all team members to engage collaboratively in the capital project delivery process, prioritizing strategies that make responsible use of public funds and offer the best value for the City. DDC's project managers, technical reviewers, and support staff work to guide projects through complex and demanding project delivery processes in partnership with creative and experienced design and construction professionals. DDC and our partners share a commitment to Design + Construction Excellence in the public realm as characterized by the following overarching concepts:

Design + Construction Excellence utilizes the power of design and construction to positively transform our public space, inspiring pride in the people and City of New York. The design of public buildings and infrastructure must be guided by a civic consciousness and social responsibility to provide spaces that promote discourse, exemplify accessible government, and inspire pride in our communities. The design and construction process must reflect a collaborative effort that is inclusive of all stakeholders, including sponsor, partner, and regulatory agencies, and the community.

Design + Construction Excellence shapes the city we envision for today and the future by creating enduring and inclusive public spaces. With design and construction of public projects comes the responsibility of shaping the City for generations to come. Dignified, universally accessible, and community-oriented, public spaces must make all New Yorkers feel welcome and valued, comfortable and secure. By thoughtfully responding to surrounding context, including neighborhood character and natural systems, the design must create and reinforce a sense of place that is enhanced by strong connections to existing community resources and mobility networks. The design and construction process must engage relevant stakeholders and experts to consider cultural context and integrate artwork wherever possible in support of meaningful public spaces.

Design + Construction Excellence protects the legacy of our public space by carefully considering practical solutions that address the needs of our City. Public projects must be well suited for their intended use and adaptable to future needs. Our public buildings and infrastructure must meet the needs and aspirations of New York City's public agencies as expressed in their individual missions, goals, standards, and requirements. The design must seek a creative balance between functional and programmatic requirements, operational and maintenance protocols, construction practices, and performance and innovation. Sustainable, resilient, durable, and easily maintained, the project must be guided by a holistic view of the capital asset over its expected lifespan. The design must consider solutions to long-term and emergent risks and opportunities, such as changing climate and public health and safety conditions, as well as new technologies and ways of living, working, and connecting.

Design + Construction Excellence strengthens the character of our public space by delivering constructible capital projects with safety and integrity. Building New York City requires the ability to execute projects in a safe, effective, and timely manner while maintaining the integrity of the design throughout construction. The design of our public buildings and infrastructure must be represented by complete, comprehensive, and accurate contract documents that are clearly detailed and coordinated across disciplines, and that meet or exceed requirements of code, zoning, accessibility, and local laws. Specifications must be carefully coordinated with drawings and material schedules and be tailored to the requirements of

each project. Materials and systems must be proven, readily available, and achievable with local construction practices to minimize lead times, eliminate cost overruns, and prevent construction delays.

Design + Construction Excellence supports the value of our public space by employing an economical approach that leverages City resources to build lasting community assets. Design and construction by and for the City requires conscientious attention to schedule, budget, and operational costs to ensure that public funds are well spent, and communities well served. The project must incorporate a life-cycle cost analysis approach and prioritize selection of long-lasting systems and assemblies that are achievable within the allocated budget. Systems must perform to the highest standards of human health, comfort and efficiency, meet or exceed energy requirements, and operate as designed. The project must be calibrated to reduce construction and operating costs and complexity, positively impact the health of people and the environment, and use natural resources wisely. Using City-wide and agency standards and best practices, innovative methodologies, and appropriate technologies, the design must add value and do more with less.

To support Design + Construction Excellence, DDC seeks architects, landscape architects, planners, designers, engineers, construction managers, contractors, and design-build teams who are dedicated, responsive, and collaborative, and who possess the management skills necessary to complete work on time and on budget. DDC's partners must have a proven track record of delivering quality projects while resolving complex requirements and navigating unforeseen circumstances. Team-oriented and adept at balancing competing demands, these professionals must go beyond the creation of contract documents to serve as facilitator, mediator, and interpreter, building trust among the many stakeholders throughout the life of a project.

THE DESIGN CONSULTANT GUIDE

DDC undertakes a wide variety of projects in support of its Sponsor Agencies, making standardization of project delivery methods a challenge. This Design Consultant Guide outlines qualitative expectations and describes broad requirements that pertain to all projects. The Guide follows the organizational principles of CSI's Uniformat and is organized into two sections: Introduction to Public Buildings and The Elements of Public Buildings. The Introduction to Public Buildings presents requirements specific to designing publicly funded facilities; background work undertaken by DDC and the Sponsor Agencies for each project; an overview of project delivery goals and methods; and a description of the structure of the design consultant contract. The Elements of Public Buildings details the technical requirements for construction elements as well as identifying consultant deliverables required at each design milestone submission.

In addition to this Guide, Consultants should familiarize themselves with Sponsor Agency design guides, requirements, manuals, specifications, or standards. These should be reviewed to ascertain any potential conflicting goals or objectives. The resolution of conflicts is the responsibility of all parties involved.

1000 PUBLIC BUILDING CRITERIA

01 GENERAL DESIGN CRITERIA

Public Buildings must represent the highest standard for our built infrastructure. All systems and components for the urban planning, architectural design, landscape design, and engineering of public projects must be designed to meet and, in some cases, exceed code requirements, exemplify the public investment to our communities, respond to the city's demands for sustainable and forward-thinking resiliency all while adhering to commonly established industry standards for quality, performance, materiality, fabrication, and installation.

An integrated design approach is fundamental to creatively balance the needs of cost, schedule, program requirements, operations and maintenance practices, sustainability and resilience, and performance and innovation. In addition to any project-specific criteria, the following priorities must be applied across all disciplines during the development of the project:

01/A COLLABORATIVE AND TRANSPARENT

The design of public buildings and spaces requires a transparent, collaborative, and inclusive process that values all voices. All stakeholders, including the project's end users, the greater community, and all participating city agencies, must be offered an opportunity to meaningfully contribute to a common vision for the project. Through public outreach and interagency coordination, the process must promote discourse, exemplify accessible government, and inspire pride and a sense of ownership in the community.

01/B CIVIC AND COMMUNITY ORIENTED

Every neighborhood in New York City possesses a unique history and character that contribute to its sense of place. The design of public projects must actively engage the neighborhoods and communities in which they are built by respecting and responding to their existing context.

Site design should reinforce community connectivity by responding to existing pedestrian routes and nearby amenities, mass transit, parks, and other local destinations. The overall project design should enliven the pedestrian experience with creative massing and façade articulation, an engaging ground floor, and visible and prominent entrances and open spaces.

Project design must be guided by Sponsor Agency and municipal planning strategies such as previously approved master plans, Zoning Resolution Determinations, and ULURP agreements where applicable. Special consideration must be given to both officially designated landmarks as well as landmark quality structures.

Project design should honor history and culture and convey community identity through a design that contributes to the character of the neighborhood with its form, materials, details, lighting, and landscape. It should incorporate art that reflects and enriches local culture and identity.

- Related Sections and Resources
  - Section 1000.04: Historic Preservation
  - Section 1000.05: Percent for Art
  - Section 1000.06/C: NYC Community Boards
  - Section 1000.06/D: Public Design Commission
  - Section 1000.06/E: Landmarks Preservation Commission
  - CEQR Technical Manual (The Mayor's Office of Environmental Coordination)

01/C INCLUSIVE, HEALTHY, AND SAFE

Public buildings and spaces must support the health, dignity, and well-being of all New Yorkers, inclusive of all racial, ethnic, gender, sexual, religious, and cultural identities, and physical, social, cognitive, and mental

abilities. All spaces must be equitable and accessible and should be designed to exceed minimum code requirements whenever feasible. Inaccessible public design elements of any kind will not be permitted.

Whether a facility is intended for public use or agency operations, it must enable every individual to feel welcome and valued, comfortable, and secure. Public spaces, entrances, and lobbies are to be readily perceptible from the street with a clear sense of orientation. They are to be well-lit, easy and intuitive to navigate, and supported by clear and consistent signage that is accessible to people of different ages and cultures. They must create a welcoming atmosphere with an appropriate level of security that has been thoughtfully integrated with the project design.

The project design is to create indoor environments with healthy indoor air quality, comfortable temperatures, noise-mitigating acoustics, suitable and variable natural and artificial lighting, and high-quality, sustainable materials.

Both indoor and outdoor spaces are to be designed to promote physical activity and inspire movement, provide access to daylight, fresh air, and drinking water, and provide visual connections to nature.

- Related Sections and Resources
  - Section 1000.02: Accessibility
  - Section 1000.06: Regulatory Bodies
  - Inclusive Design Guidelines (Mayor's Office for People with Disabilities)
  - Inclusive Design Guidelines: Sports & Recreation (Mayor's Office for People with Disabilities)
  - Aging in Place Guide for Building Owners (NYC Department for the Aging)
  - Universal Design New York (DDC/MOPD)
  - Active Design Guidelines (DCP)
  - Family Friendly Design Guideline (City Hall)

01/D SUSTAINABLE AND RESILIENT

The Consultant team is expected to employ best practices for optimizing opportunities to cost-effectively decarbonize with lasting work that improves stakeholder quality of life and protects and restores natural ecosystems. Design teams must demonstrate thorough competency in leveraging building science to achieve maximum passive design performance before relying on active system performance. Active systems must be efficient, serviceable, reliable, and, via commissioning, operate as designed. Maintenance plans must be achievable and ensure continued performance throughout each system's useful life.

The project design must consider emergent and long-term risks by planning to mitigate and withstand the impacts of climate change and changing public health and safety conditions including sea-level rise, intensifying storms, and extreme heat. This will include managing storm water, offsetting the heat island effect, utilizing native vegetation, and considering short- and long-term impacts on local and regional ecosystems, including fauna such as migratory birds.

In addition to local and federal codes pertaining to flood mitigation and flood-proofing, the project design must support community resilience by designing public facilities that perform effectively during extreme events, provide essential services to vulnerable community members, and return easily to normal operations.

- Related Sections and Resources
  - Section 1000.03: Sustainability and Resiliency
  - Climate Resiliency Design Guidelines (Mayor's Office of Resiliency)
  - Sustainable New York (DDC)

- Geothermal Heat Pump Manual (DDC)
- Water Matters (DDC)

01/E FUNCTIONAL, DURABLE, AND COST-SENSITIVE

The Consultant must deliver and integrated design which evaluates life-cycle, operational and maintenance costs for the overall project, as well as all major systems. The Consultant must demonstrate that alternatives have been considered for all major systems, materials and details, and that the final design option is as economical as possible.

I. Space Allocation

The Consultant must allocate project program in a manner that is suitable for the building requirements and sponsor agency/end user needs.

- Square footage areas are to be appropriately and efficiently allocated for the intended use.
- The overall grossing factor for a new building or an interior renovation are to be reasonable and align with the gross square footage outlined in the Front-End Planning Report.
- Program distribution, arrangement and adjacencies must be evaluated in conjunction with available utility and building services, accessibility, code requirements and potential future expansions or reconfigurations, as applicable.
- Avoid program arrangements which trigger additional ancillary program spaces, project scope, and/or maintenance and security requirements.

II. Maintenance Considerations

The Consultant must space plan and detail in such a way as to provide unimpeded service access suited to both immediate and future maintenance needs, including but not limited to:

- OSHA or manufacturer minimum clearances for regular maintenance. Include access doors or lightweight removable panels for service by one person.
- Roof membrane replacement or repair and replacement or repair of sealant and caulking
- Façade cleaning
- Stormwater and stormwater recovery system maintenance.
- Replacement of major equipment and ancillary components.

III. Materials, Assemblies and Systems Selection

The Consultant must select materials, equipment and building systems which:

- Are simple to operate, maintain, update, and replace when needed.
- Are readily available and easily buildable with local construction practices to minimize lead times, eliminate cost overruns, and prevent delays.
- Adhere to commonly established industry standards for quality, performance, materiality, fabrication, and installation.
- Are evaluated for efficiency, life-cycle costs and constructability and demonstrate a proven track record of success.
- Are discussed with and approved by the Sponsor Agency and are appropriate to the end user operations and needs.

- Are high-quality, durable and do not require frequent service. Materials with low useful life or which deteriorate quickly (such as sealants and waterproofing membranes) must be appropriately protected from exposure, environmental conditions, and impact.

IV. Detailing and Assemblies

The Consultant must select and detail assemblies which:

- Minimize and optimize material transitions and joints to reduce vulnerable opportunities for water infiltration, thermal bridges or air leakage.
- Limit or avoid use of custom assemblies unless there is a notable improvement in building or system performance or to fulfill a specific project requirement. Custom assemblies and curtain walls must be expertly designed and engineered and cannot be delegated for design by the General Contractor during Construction. If applicable, the consultant will be responsible for hiring the appropriate subconsultants to design assemblies which ensure appropriate test parameters and warrantees can be achieved.
- Can achieve manufacturer warrantees.
- Minimize detailed coordination of multiple trades or special experience fabricators whenever possible

- Related Sections and Resources
  - Section 1000.07: Commissioning
  - Section A to G: Technical Requirements

02 ACCESSIBILITY

02/A ACCESSIBILITY OVERVIEW

From the U.S. Department of Justice Civil Rights Division:

The Americans with Disabilities Act (ADA) is a federal civil rights law that prohibits discrimination against people with disabilities in everyday activities. The ADA prohibits discrimination on the basis of disability just as other civil rights laws prohibit discrimination on the basis of race, color, sex, national origin, age, and religion. The ADA guarantees that people with disabilities have the same opportunities as everyone else to enjoy employment opportunities, access to goods and services, and participate in state and local government programs.

A person with a disability is someone who:

- *has a physical or mental impairment that substantially limits one or more major life activities,*
- *has a history or record of such an impairment (such as cancer that is in remission), or*
- *is perceived by others as having such an impairment (such as a person who has scars from a severe burn).*

DDC's ADA Compliance Unit is responsible for overseeing a project's compliance with the above forementioned ADA civil rights law and other NYC Local Laws, from the initial stages of project planning through substantial completion of construction. See Section 2000.02/B/III for a description of the Unit's role in Public Buildings.

02/B ACCESSIBILITY JURISDICTION

Public Buildings must be readily accessible to and usable by individuals with disabilities in accordance with the following key provisions:

- Multiple local, state and federal requirements must be complied with, including but not limited to, the accessibility requirements set forth in Chapter 11 of the NYC Building Code and its associated Technical Reference Standard ICC A117.1-2009, and the 2010 ADA Standards for Accessible Design (the "2010 ADA Standards") as well as all other requirements included in the Accessibility Standards, as defined in section I below. It is also encouraged to utilize United States Access Board Guidelines, whenever possible, as an additional design resource.
- Where there is a conflict or inconsistency between the requirements, the more restrictive requirement shall dictate the design.
- Obtaining approvals and permits from the Department of Buildings or any other City agency based on documents which include a non-compliant condition does not validate such condition, as it is the professional responsibility of the Applicant of Record to produce a fully compliant and accessible building.

I. Accessibility Standards

The term 'Accessibility Standards' used throughout this document shall mean the following, and are inclusive of current versions of all the following:

- The New York City Construction Codes, including Chapter 11 of the NYC Building Code;
- Accessible and Usable Buildings and Facilities, ICC A117.1, edition as adopted by NYC Building Code;
- NYC Charter §224.3, regarding induction loop systems;

- The Americans with Disabilities Act, 42 U.S. Code §12101 et seq. and regulations implementing Title II of the Americans with Disabilities Act, 28 CFR §35.101 et seq., with particular regard to §35.151 "New construction and alterations," and including, but not limited to, path of travel requirements associated with alteration work;
- The 2010 ADA Standards for Accessible Design for State and Local Government Facilities Title II, with particular regard to §104.1, concerning construction and manufacturing tolerances;
- The U.S. Access Board's Public Right-of-way Accessibility Guidelines (PROWAG);
- Chapter 7 of Title 19 – Transportation, regarding Accessible Water Borne Commuter Services Facilities Transportation Act;
- Section 504 of the Rehabilitation Act, 29 U.S. Code §794, and implementing regulations;
- United States Access Board issued accessibility guidelines;
- The New York State Human Rights Law, Executive Law §291 et seq., with particular regard to §296(2)(c);
- The New York City Human Rights Law, Administrative Code §8-101 et seq., with particular regard to §8-107(15); and
- The Fair Housing Act, 42 U.S. Code §3601 et seq., as amended by the Fair Housing Amendments of 1988, and implementing regulations at 24 CFR Part 100.

02/C ACCESSIBILITY PROJECT REQUIREMENTS

The Design Consultant is responsible for ensuring all building components are designed and constructed in compliance with Accessibility Standards as required by the project scope. The Consultant is advised to provide adequate construction tolerances to ensure ordinary construction inaccuracies do not result in a non-compliant built condition. Some construction tolerances are explicitly called out in Section III below.

I. New Buildings and Additions

All new buildings must be fully accessible to the extent established by such codes and standards.

II. Existing Buildings

For alterations of existing buildings, the Consultant must:

- Scope of Work: Verify and comply with the scope of work outlined in the FEP Report and fully address the requirements of the NYC Building Code and 2010 ADA Standards. Notify DDC in writing of any potential omissions and/or conflicts.
- Path of Travel (POT): Evaluate and comply with the ADA Path of Travel (28 CFR 35.151(b)) if triggered by any alteration to a primary function area. If an area containing a primary function has been altered without providing an accessible path to that area, and subsequent alterations of that area or a different area on the same path are undertaken within three years of the original alteration, the total cost of alterations to the primary function areas on that path of travel during the preceding three-year period shall be considered in determining whether the cost of making that path accessible is disproportionate.
- Occupancy, Use, and Value of Alteration Triggers: Evaluate and comply with full building accessibility as required by a change in the main use or dominant occupancy, or based on the value of the alteration, as outlined in NYC Building Code Sections 1101.3.1 and 1101.3.2.

III. Documentation and Inspections

The ADA Compliance Unit will perform compliance reviews at A+E submissions during the Design Phase and of submittals during the Construction Phase. The ADA Compliance Unit will also perform on-site inspections at progress milestones during the construction phase. For a description of how ADA scope and elements below must be identified and documented in the design phase documents, see Section Z.09.

Accessibility Verification Checklist For a description of ADA Compliance Deliverables by phase see section Z Consultant Deliverables	**DESIGN PHASE**					**CONSTRUCTION PHASE (DDC PB Policy 034)**				
	Project Description Form (Section Z.02 and Z.09)	Schematic Design Drawings (section Z.06 and Z.09)	Design Development Drawings (section Z.06 and Z.09)	Construction Drawings (Section Z.06 and Z.09)	Specifications (Section Z.09 and Z13)	Construction Submittals (Section Z.09 and Z13)	Completion of Framing and (Plumbing/ Elec.) Roughing	Completion of Walls and Doors	Start of Finishes and Accessories	Completion of Finishes and Accessories
Summary of ADA Project Scoping Requirements – ADAAG Chapter 2, NYC Chapter 11, etc.	•									
Summary of Non-Compliant ADA Conditions	•									
Applicable ADA Codes, Standards, and Local Laws	•	•	•	•	•					
Compliance Diagrams		•	•	•	•					
Building Blocks										
Operable Parts (Electrical, HVAC, and Other Controls) ADAAG Section 205			•	•	•	•			•	•
Protruding Objects ADAAG Section 204			•	•	•	•			•	•
Accessible Windows ADAAG Section 229 and NYC Building Code Section 1107				•	•			•	•	•
Accessible Routes and Means of Egress										
Accessible Means of Egress NYC Building Code Ch. 10	•	•	•	•			•	•		
Accessible Routes ADAAG Section 206	•	•	•	•	•		•	•		
Door Maneuvering Clearances ADAAG Section 404		•	•	•			•	•		

Accessibility Verification Checklist (Continue)	**DESIGN PHASE**					**CONSTRUCTION PHASE (DDC PB Policy 034)**				
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Elevators ADAAG Section 407				•		•			•	•
LULA Elevators ADAAG Section 408				•		•			•	•
Lifts (Vertical and Inclined) ADAAG Section 410				•		•			•	•
Public Right-of-Way/ Builders Pavement Plans ADAAG Ch. 4, PROWAG, DOT Standard Details of Construction, and NYC Administrative Code				•					•	•
General Sites and Building Elements										
Accessible Parking Spaces, Passenger Loading Zones and Bus Stops ADAAG Sections 208 and 209				•					•	•
Accessible Electrical Vehicle Charging Stations NYC Building Code Section 1106				•	•	•			•	•
Plumbing Elements and Facilities										
Toilet and Bathing Facilities ADAAG Section 213 and Chapter 6, NYC Building Code Section 1109, and ICC A117.1 Ch. 6	•	•	•	•	•	•	•	•	•	•
Drinking Fountains ADAAG Section 211		•	•	•	•	•	•	•	•	•
Communication Elements and Features										
Fire Alarm System ADAAG Sections 215 and NFPA 72				•	•	•	•		•	•
Two-way Communication Systems ADAAG Sections 230 and NFPA 72				•	•	•	•		•	•
Signage and Wayfinding ADAAG Section 216				•						•
Assistive Listening Systems (ALS) ADAAG Section 219 and NYC Building Code Appendix N				•	•	•				•

Accessibility Verification Checklist (Continue)	**DESIGN PHASE**					**CONSTRUCTION PHASE (DDC PB Policy 034)**				
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Special Rooms, Spaces and Elements										
Kitchens, Kitchenettes, and Sinks ADAAG Section 212			•	•	•	•			•	•
Dressing, Fitting, and Locker Rooms ADAAG Section 222			•	•	•	•			•	•
Built-in Elements										
Dining and Work Surfaces ADAAG Section 226				•		•				
Sales and Service Counters ADAAG Section 227			•	•		•				
Benches ADAAG Section 903				•		•				
Employee Workstations and Moveable Furniture ADAAG Ch. 9 and NYC Building Code Ch. 11				•	•	•			•	•

03 SUSTAINABILITY AND RESILIENCY

03/A SUSTAINABILITY AND RESILIENCY OVERVIEW

NYC and DDC have a long history of supporting sustainable and resilient design, starting with the High Performance Building Guidelines, published by DDC in 1999. Mayoral initiative followed with PlaNYC in 2007 (updated 2011) and the Greener, Greater Buildings Plan of 2009.

Mayor de Blasio's 2014 initiative, One City: Built to Last, followed this trajectory, enacting laws to ensure that the City leads by example in efforts to reduce greenhouse gas emissions from buildings. Pursuant to Local Law 66-2014, which committed the City to reduce its greenhouse gas emissions 80% by 2050, the Mayor's Office of Sustainability published New York City's Roadmap to 80 x 50.

The latest OneNYC 2050 strategic plan reaffirms these commitments and is supported by a set of new local laws known as the Climate Mobilization Act, requiring even greater effort to reduce greenhouse gas emissions and achieve carbon neutrality by 2050.

DDC approaches all projects it administers with the goals of reducing energy use, conserving water and other natural resources, and creating a healthy and resilient city. Environmentally sustainable, high-performance design and construction standards are to be fully integrated into all projects. At a minimum, the Consultant must meet the requirements of all City green buildings laws. Where feasible, and without adding to the project's cost or schedule, the Consultant's design is to exceed the minimum legal requirements for energy efficiency, water use, stormwater management and indoor air quality.

A changing climate and rising sea levels will challenge NYC in the coming years. Resilient design, broadly speaking, delivers projects capable of adapting to and rebounding from these changes. Well-coordinated tactics that can evolve and adapt over time can create robust buildings, infrastructure, neighborhoods and services.

03/B SUSTAINABILITY AND RESILIENCY JURISDICTION

The Consultant is responsible for complying with all relevant local, state and federal regulations applicable to the project. The following are some local laws, directives and guidelines that apply to DDC projects at the time of publication. This list is provided for the Consultant's convenience and is by no means exhaustive. The Consultant is responsible for researching all applicable laws, including all new laws effective at the time the project is initiated.

I. New York City Green Building Laws

(listed by year of enactment)

/a New York City Energy Conservation Code (NYCECC)
The Consultant is to design the project per the NYC ECC current at the time of filing and provide all documentation required to meet current Department of Buildings submission requirements. The Consultant is advised that the energy code updates approximately every three years.

/b Local Law 55 – 2024 – Electric Vehicle Parking Spaces
This local law mandates that new and existing parking areas for new buildings or buildings undergoing major restoration must install electric vehicle supply equipment (EVSE). At least 20% of parking spaces must have Level 2 charging stations, and at least 60% of parking spaces must be able to support EVSE.

/c Local Law 51 – 2023 – Low Energy Intensity Buildings
Local Law 51 is the new LEED and low energy intensity buildings law which updates most of the energy performance requirements previously issued under LL31, LL32, and LL86. The

Consultant must review the rules and requirements of LL51 set forth in Section 224.1 of the NYC Charter. Project Intake Forms for reporting are available from the Mayor's Office of Environmental Coordination (MOEC).

/d Executive Order 23 – 2022 – Embodied Carbon reductions

Requires City Agencies to take actions in driving down GHG emissions, air pollution, and noise pollution from municipal construction. Agencies are ordered to establish low-carbon specs for concrete, to collect and report EPD data on the carbon intensity of concrete and steel, and to perform and report whole building life cycle assessments (LCA). It also orders agencies to request that contractors utilize electric construction equipment. Design Consultants are expected to identify the reduction of embodied carbon as a goal for all capital projects. Life cycle assessments are required to be performed and reported on new construction, additions, and substantial reconstructions with substantial work on the building envelope. For guidance, see most current edition of NYC E023 Whole Project Life Cycle Assessment (LCA) Guidance prepared by NYC Mayor's Office of Climate and Environmental Justice.

/e Local Law 154 – 2021 – End Fossil Fuels in New Construction

Local Law 154 of 2021 mandates phasing out the combustion of fossil fuels in new buildings and accelerating the construction of all-electric buildings. The law, the first of its kind for a large cold-weather city, represents a major shift in how buildings use energy to provide heating and cooling, by prioritizing air quality, public health, and greenhouse gas emissions reductions.

The new law sets restrictions on fossil fuel usage in newly constructed residential and commercial buildings by phasing in strict emissions limits beginning in 2023, bringing immediate climate and health benefits to New Yorkers at launch. The benefits exponentially increase as more buildings are covered by the law and as the grid gets cleaner in line with the City's existing commitment to 100% clean electricity. Buildings of all sizes must be constructed fully electric by 2027. The new law provides limited exemptions for certain uses, such as commercial kitchens and emergency or standby power.

/f Local Law 41 - 2021 - Climate Resiliency Design Guidelines

The City is taking a proactive stance against potential environmental threats. In May 2022, the Mayor's Office of Resiliency (MOR) issued version 4.1 of their Climate Resiliency Design Guidelines (CRDG). While these guidelines are not mandatory at present, resilient design considerations need to be an integral part of all new city projects. These guidelines should serve as a starting point to incorporate resiliency for extreme heat, increased precipitation, and sea-level rise into our planning and design process as we better understand the risks we face.

The Consultant must review the latest published version of the CRDG available at the website for the Mayor's Office of Resiliency. These Guidelines establish guidance on incorporating projected impacts from climate change into the planning, engineering, construction, and renovation of City-owned infrastructure and facilities.

/g Executive Order 52 - 2020 (EO52) – End Fossil Fuel Infrastructure Expansion

Commits the City to ending the expansion of fossil-fuel-related infrastructure within its energy shed. The City will not support the addition of infrastructure that expands the supply of fossil fuels via pipelines or terminals for the transfer of fossil fuels or via the construction of new fossil-fuel-based electric generation capacity, effective immediately.

City agencies that speak on behalf of the City before regulatory bodies that oversee energy infrastructure must articulate the City's opposition to the development of infrastructure that expands the supply of fossil fuels via pipelines, new fossil-fuel-based electric generation capacity, or terminals for the transfer of fossil fuels.

/h Executive Order 53 - 2020 (EO53) – All-Electric Fleet Vehicles
Sets a goal for 100% of its fleet to be all-electric and carbon neutral by 2040. The City will issue, implement and update a Clean Fleet Transition Plan every two years to outline requirements for all City fleet units by type that leads to this goal.

/i Local Law 15 – 2020 – Bird Friendly Glazing (now 2022 NYCBC Section 1403.8)
This local law establishes new requirements for installation of bird friendly materials in new design and construction, as well as alterations to buildings that include the replacement of all exterior glazing. For the purposes of the law, exterior glazing shall be deemed to include any glass panels, glass architectural assemblies, glass systems, and glass elements, including but not limited to glass windows, glass awning, glass guardrails, glass wind break panels, and glass acoustic barriers. Where the alteration of an existing building includes the replacement of all exterior glazing, such exterior glazing shall be replaced with bird friendly materials, including adjacent to new or existing green roof systems.

/j Local Law 97 - 2019 (LL97) – Greenhouse Gas Emission reductions
Mandates a 40% reduction in greenhouse gas emissions from City government operations by 2025, a 50% reduction by 2030 and an 80% reduction by 2050, as compared to a 2006 baseline Local Law 22-2008.

/k Local Law 94 - 2019 (LL94) – Sustainable Roof Zone (now 2022 NYCBC Section 1512)
Mandates sustainable roofing zones on all new buildings, new roofs resulting from enlargement of existing buildings and existing buildings replacing an entire roof deck or roof assembly. 100% of available roof space must integrate either a solar photovoltaic electricity generating system, a green roof system, or a combination thereof, with limited exceptions for mechanical equipment, FDNY access and other noted obstructions or uses. LL94 also updates the LL21/2011 Cool Roofs Law, requiring new or replacement low-slope roofs to have a minimum initial solar reflectance of 0.7 and a minimum thermal emittance of 0.75 or a minimum solar reflectance index (SRI) of 82.

/l Executive Order 26 - 2017 (EO26) – Energy Use Reductions
Requires all City agencies to contribute to global efforts to limit warming to 1.5°C above pre-industrial levels. To reach these goals, the City has determined that each agency's building portfolio must achieve a 20% reduction in total energy use, relative to 2017 levels, by 2025.

/m Local Law 24 – 2016 – Solar PV Assessment
Requires all projects to provide the Department of Citywide Administrative Services (DCAS) an assessment of the solar photovoltaic (PV) potential of each city building with a floor area of 10,000 gsf or more, and to identify the cost, energy cost savings, and greenhouse gas emissions reductions of a PV system that fulfills this potential. Required procedures are outlined in the DCAS Solar 100 Report.

/n Local Law 6 - 2016 (LL6) – Geothermal Pre-Feasibility Tool
Requires new municipal buildings and HVAC retrofits to utilize the online NYC Geothermal Pre-Feasibility Tool to assess ground-source heat pumps (GSHP) as an alternative to other HVAC system designs. If the screening tool finds that a full or hybrid GSHP system is potentially viable for the project, LL6 requires a comprehensive engineering and cost analysis. If the analysis finds that GSHP has the best net present value of all alternatives considered, LL6 requires that GSHP be selected for implementation. The Pre-Feasibility Tool is accessible at: https://www1.nyc.gov/assets/ddc/geothermal

/o Local Law 130 – 2013 – Electric Vehicle Parking
Introduces Electric Vehicle Capacity requirements for parking lots and facilities to support electric vehicle charging stations. introduces Electric Vehicle Capacity requirements for parking lots and

facilities to support electric vehicle charging stations. This Local Law requires at least 20 percent of the parking spaces in new parking lots and garages or existing parking lots and garages undergoing an increase in electric service, to be equipped with electrical raceways for the future installation of electric vehicle charging stations. Parking lots must also provide electrical panels with sufficient capacity to support the charging stations, and parking garages must provide sufficient space in their electrical rooms for such a panel. Actual installation of charging stations is at the discretion of DCAS and the sponsor agency unless it is part of the Project Requirements or is needed in order to comply with LL51-2023.

/p Executive Order 359 – 2013 – Active Design Guidelines
Requires all municipal new and major renovation projects to complete the City's Active Design Guidelines checklist and implement the Active Design Guidelines and DOT Street Design Manual guidelines determined to be relevant and appropriate to the project. It also requires all municipal LEED projects to pursue the Design for Active Occupants credit, whenever practicable.

/q Local Law 22 – 2008 – Greenhouse Gas Inventory
Requires the City to publish its greenhouse gas inventory on an annual basis.

/r Local Law 118 – 2005 - EPP
Establishes Environmentally Preferable Purchasing (EPP) requirements for eligible projects not required to pursue LEED under Section 224.1.

03/C SUSTAINABILITY AND RESILIENCY PROJECT REQUIREMENTS

The Consultant is responsible for leading an integrative design process for meeting and exceeding the cities goals across sustainability, resiliency, equity, and health. A secondary but no less important objective is for project teams to report their successes and challenges in order to inform the next generation of policy-making and capital project funding.

I. Performance Requirements

For a project to meet the sustainability and resiliency goals of the city, as regulated by the laws above, the below sustainability and resiliency performance criteria may be required for a project:

/a Embodied Carbon Reductions
Embodied carbon refers to GHG emissions associated with materials and construction processes over the whole life cycle of a building. During a project, it is best practice to conduct a preliminary Life Cycle Analysis (LCA) at the beginning of the design stage for assessment of embodied carbon reduction opportunities in structural and envelope systems. Covered projects must demonstrate 10% reduction, among other criteria.

/b System-Based Energy Use Reductions
Certain mechanical and electrical systems projects, which are not subject to whole building energy performance requirements, or the low energy intensity criteria (see section d below), are required to meet minimum 5-10% energy use reduction targets beyond code.

/c Whole Building Energy Use Reductions
In addition to possible LEED requirements, certain projects over $12 million in construction cost and not required to be low energy intensity buildings (see section d below) are required to exceed energy use reduction beyond code by specific percentages.

1. Projects over $12m shall be designed to achieve a minimum 25% site energy use reduction relative to the NYCECC in effect at the beginning of Design Development, and up to an additional 5-10% reduction if there are additional energy efficiency measures with a simple payback of seven years or less.
2. Projects over $30m shall be designed to achieve a minimum 30% site energy use reduction, and up to an additional 5% reduction if there are additional energy efficiency measures with a simple payback of seven years or less.
3. Energy use reductions shall be calculated using LEED methodology.

   Refer to the Mayor's Office of Environmental Coordination website for more information. Should the construction cost increase above a higher threshold at any time before the final construction Certificate to Proceed, the associated energy reduction target for the higher threshold applies. Therefore, projects close to the thresholds shall be designed with this in mind.

/d Low Energy Intensity Buildings

Most new buildings, additions, and major renovations are required to be designed and constructed to use half the energy of a similar conventional building. "Half" is defined as 50% of an ASHRAE 90.1-2013 baseline. There is also a second compliance path similar to the Passive House standard.

Energy performance needs to be considered early in the design process. It is, therefore, imperative to use an Integrative Design Process. Simple box models that optimize passive strategies are required before a Schematic Design can be approved. Updated and further developed energy models are required at each subsequent phase.

/i. Onsite Energy Generating Buildings

Low energy intensity projects shall consider the feasibility of design and construction of a building that generates 10% or more of its total energy needs onsite.

/ii. Net Zero Energy Building

Low energy intensity projects that are three stories or fewer must also consider the feasibility of design and construction of a building that generates 100% of its energy needs onsite.

/e Low Energy Intensity Projects without LEED Certification

Provide the following items from the LEED Project Kick-off Section:

1. Environmental Programming Matrix (See Section Z/10/I)
2. Solar/Wind Analysis
3. Building Occupancy Group Determination
4. Energy Goals Statement (See Section Z/10/I)
5. Energy Analysis Plan (See Section Z/10/I)

/f Water Use Reduction

All projects shall be designed to maximize water efficiency. For LL51-2023 projects involving the installation or replacement of plumbing fixtures with domestic plumbing costs greater than $500,000, the City Charter mandates a minimum 30% potable water use reduction, to be calculated using the methodology prescribed in LEED.

/g Environmentally Preferable Purchasing (EPP) Projects

Environmentally Preferable Purchasing (EPP) is typically required of projects 15,000 sf of interior project area and greater. This is based on project size, not building size. This includes projects that

involve multiple buildings, if the total interior area exceeds the threshold. Conversely, projects smaller than 15,000 sf in larger buildings are exempt.

Projects that are required to comply with the LEED provisions of Section 224.1 (LL51-2023) are exempt. Projects that are required to comply with the system-specific requirements of Section 224.1 are only exempt for the portions of the project for said systems.

EPP projects are required to follow the Mayor's Office of Contract Services (MOCS) Minimum Standards for Construction Products which cover issues such as, but not limited to, efficiency requirements for lighting and HVAC equipment, minimum recycled content requirements, and VOC content limits.

/h Climate Resiliency

The City is taking a proactive stance against potential environmental threats. In May 2022, the Mayor's Office of Resiliency (MOR) issued version 4.1 of their Climate Resiliency Design Guidelines (CRDG). While these guidelines are not mandatory at present, resilient design considerations need to be an integral part of all new city projects. Certain projects will be required to comply with LL 41 and these guidelines should serve as a guide to incorporate resiliency for extreme heat, increased precipitation, and sea-level rise into our planning and design process as we better understand the risks we face.

The Consultant must review the latest published version of the CRDG available at the website for the Mayor's Office of Resiliency. These Guidelines establish guidance on incorporating projected impacts from climate change into the planning, engineering, construction, and renovation of City-owned infrastructure and facilities.

/i LEED Certification

Local law requires projects in certain occupancies to be designed to meet the standards set forth in the United States Green Building Council's (USGBC) LEED rating system. Projects must meet Gold or Certified (based on building occupancy) requirements in addition to meeting any energy and water efficiency requirements.

Since the cost thresholds in the laws are based on construction cost as per the final construction Certificate to Proceed from the Office of Management and Budget, projects must be designed to meet LEED standards if the estimated construction costs approach the current inflation-adjusted thresholds; this will be identified in the Front-End Planning Report. Also, if the scope expands to "substantial reconstruction" as defined by the law or the occupancy changes, certain provisions of Section 224.1 might then become applicable. If there are approved changes to project scope, construction budget of occupancy classification, the consultant is responsible for identifying the applicability of these laws and codes and communicating this information to the DDC Project Manager and Sustainability Unit Director.

The Consultant is responsible for implementation of all LEED aspects into the construction and configuration of the project and must have an internal compliance process for the review and tracking of LEED submittal information for materials and products, and the collection and compilation of all LEED construction credit information.

Projects must be registered and certified with the Green Building Certification Institute (GBCI). All tasks, submittals, and filing/registration activities required to successfully meet this standard and receive formal certification must be the responsibility of the Consultant, including plaque installation.

For LEED projects the Consultant is required to include the following criteria:

/i. Environmental Design Workshop

This goal-setting workshop to integrate high performance standards into the project must be organized and facilitated by the Consultant and attended by the Consultant team, DDC representatives, and Sponsor Agency representatives, including facilities maintenance and operations staff. For this meeting, the Consultant must prepare for discussion preliminary drafts of the following:

1. Environmental Programming Matrix
2. Solar/Wind Analysis
3. Energy Audit Report (See Z/10/B)
4. Project Specific LEED Checklist
5. Project Specific LEED Plan
6. Site Plan which includes the LEED boundary
7. Building Occupancy Group Determination
8. Energy Goals Statement
9. Energy Analysis Plan

Deliverables are outlined in Z General Deliverables Section Z/10/I

/ii. Environmental Construction Workshop

The Environmental Construction Workshop must be conducted to review the construction requirements and procedures for the project and to identify and assign responsibility for specific strategies to fulfill the targeted LEED certification level and other City sustainability requirements. This meeting must be organized and facilitated by the Consultant and DDC PM and attended by the construction manager, as applicable, the General Contractor, primary (MEP) sub-contractors, Sponsor Agency representatives and DDC representatives. The meeting must address, at a minimum:

1. Requirements of all LEED construction credits applicable to the project
2. Erosion and Sedimentation Control (ESC) Plan and procedures
3. Construction and Demolition Waste Management (CDWM) Plan and procedures
4. Indoor Air Quality Management (IAQM) Plan and procedures
5. Submittal requirements and routing, including assignment of responsibilities and frequency of LEED construction documentation updates
6. Construction site signage
7. Flush-out or air quality testing requirements and scheduling
8. Energy goals and requirements

The Consultant must develop the ESC, CDWM and IAQM Plans in accordance with LEED requirements in advance of the Environmental Construction Workshop.

/iii. LEED Credits

Refer to USGBC LEED Reference Guide for the project's required measures and deliverables and provide accordingly, except for where DDC's required deliverables are more stringent as outlined in section below.

All documentation shall be updated, as applicable, at the end of each phase of design, reflect the documents submitted for that phase and be consistent with each of the project's other LEED deliverables. Changes to text should be bold and date of revision provided.

For each LEED credit deliverable, provide the applicable calculations, narratives and supporting documents necessary to demonstrate that credit/prerequisite requirements are met. Narratives should summarize the design approach to credit compliance and identify the project-specific design and specifications requirements to be incorporated into the design documents. Provide explanations and calculations where appropriate for credits that are determined to be "not feasible."

When applicable to the project, the below credits are required by DDC and include additional deliverables as outlined below:

1. Integrative Process (IP Credit)

   Unless otherwise determined, DDC requires the Integrative Process credit in order to facilitate an integrated design approach to sustainability. The Integrative Process necessitates a comprehensive approach to integrating sustainability and other design performance expectations into the project. On applicable LEED projects, Consultants are expected to initiate a high level of project team engagement and coordination from the beginning of design and to sustain this level of coordination and value-optimization throughout the design and construction phases. The Consultant is responsible for the following tasks:

   a. When applicable, conduct preliminary energy and water research and analysis including a "simple box" energy model. Identify opportunities for the project to achieve better-than code required energy performance for possible additional funding consideration by DCAS. Engage DDC in Integrative Process (IP) Workshop planning and agenda development.
   b. Prepare summary presentation of studies and analyses results to present at the workshop. Send all analyses and studies included in the requirements to DDC at least 3 days before the workshop.
   c. Lead the IP Workshop, to be held separately from the Environmental Design Workshop. Facilitate in identifying, clarifying and evaluating integrative design opportunities. Listen to and synthesize DDC and Sponsor Agency responses to identified challenges, opportunities and next steps.
   d. Within two weeks after the IP Workshop, provide a summary of potential strategies and follow up actions required, along with responsible parties for each.
   e. Complete an Integrative Process worksheet.
   f. Provide an Integrative Process Report (see General Deliverables Section Z.10/I)

2. High-priority site (It credit)

   For Brownfield remediation projects, incorporate remediation requirements into the specifications and details into the drawings. Provide a narrative in the Project Description Form summarizing the actions necessary to remediate the site and the results of these actions.

3. Enhanced commissioning (EA credit)

   Metering and Verification (M&V) Equipment / Monitoring-Based Commissioning Protocol

   The Monitoring-Based Commissioning LEED Credit is to be selected for implementation only with written approval from the Sponsor Agency.

The Consultant must develop monitoring-based procedures and identify points to be measured and evaluated to assess performance of energy- and water-consuming systems to address the following:

a. Roles and responsibilities
b. Measuring requirements (meters, points, metering systems, data access)
c. The limits of acceptable values for tracked points and metered values (where appropriate, predictive algorithms may be used to compare ideal values with actual values)
d. The elements used to evaluate performance, including conflict between systems, out-of-sequence operation of systems components, and energy and water usage profiles
e. An action plan for identifying and correcting operation errors and deficiencies
f. Training to prevent errors
g. Planning for repairs needed to maintain performance, and
h. The frequency of analyses in the first year of occupancy (at least quarterly.)

The Consultant must include all required equipment and metering points in the base design of the building and the protocol must be compliant with LEED EA Credit Enhanced Commissioning. Implementation and configuration during construction is required and the Contractor must provide the end user with all necessary information to monitor and verify energy and water data post-construction. M&V during operations will not be conducted by the Consultant.

/iv. Registration

1. LEED Online Registration

   If the project is required to pursue LEED certification, the project must be registered and certified with the USGBC/GBCI. The Consultant is responsible for keeping up with all relevant USGBC/GBCI Addenda. All tasks, submittals and filing/registration activities required to successfully meet this standard and receive formal certification must be part of the Consultant's work. The Consultant must register the project with GBCI and invite "ddcsustainability@ddc.nyc.gov" to the project's LEED Online record, along with additional parties required by DDC and the Sponsor Agency. For City-owned projects, register project as "City of NY – [Project Name]."

2. LEED Online Submittal

   The Consultant must utilize a split submittal to LEED Online. Submit the preliminary LEED Design application to LEED Online at the phase specified in the Submission Checklist. The Consultant must manage the review comments, collect and develop the additional project information as needed, and submit the final LEED Design application within a reasonable timeframe. Submit the preliminary LEED Construction application to LEED Online at the phase specified in the Submission Checklist. Manage the review comments, collect and develop the additional project information as needed through to achieving final certification at the required level.

3. LEED Certification

   Confirm ownership contact details with DDC prior to certification acceptance. Upon contact details approval, provide DDC with seven LEED certificates and the official

congratulatory letter to document and share with the Sponsor Agency. Provide a memo highlighting the major LEED achievements of the project.

The Consultant must include scope of LEED Plaque installation in final Construction Documents including all required coordination with other trades.

/v. LEED Credit Guidance Checklist

DDC's Office of Sustainability and Climate Resiliency (OSCR) has developed guidance for the sequencing of LEED Credit documentation or supplementation of USGBC requirements **for reference only**.

Refer to USGBC LEED Reference Guide for the project's required measures and deliverables and provide accordingly.

LEED Credit Guidance Checklist Credits: IP – Integrated Project Planning LT – Location & Transportation SS – Sustainable Sites WE – Water Efficiency EA – Energy & Atmosphere MR – Materials & Resources EQ – Indoor Environmental Quality IN – Innovation RP – Regional Priority		Schematic Design	Design Development	Construction Documents	Pre-Construction	Construction
IP	Integrative Process	•				
LT	Neighborhood Development Location	•				
	Sensitive Land Protection	•				
	High Priority Site	•				•
	Surrounding Density and Diverse Uses	•				
	Access to Quality Transit	•				
	Bicycle Facilities	•		•		
	Reduced Parking Footprint	•		•		
	Electric Vehicles	•		•		
SS	Construction Activity Pollution Prevention			•		
	Environmental Site Assessment	•				
	Protect/Restore Habitat					
	Open Space	•		•		
	Rainwater Management	•		•		
	Heat Island Reduction	•		•		
	Light Pollution Reduction	•	•	•		
	Place of Respite	•				
	Direct Exterior Access	•				

LEED Credit Guidance Checklist (Continue) Credits: IP – Integrated Project Planning LT – Location & Transportation SS – Sustainable Sites WE – Water Efficiency EA – Energy & Atmosphere MR – Materials & Resources EQ – Indoor Environmental Quality IN – Innovation RP – Regional Priority		Schematic Design	Design Development	Construction Documents	Pre-Construction	Construction
WE	Outdoor Water Use Reduction	•		•		
	Indoor Water Use Reduction	•		•		
	Building-Level Water Metering	•		•		
	Optimize Process Water Use		•	•		
	Water Metering		•	•		
EA	Minimum/Optimize Energy Performance	•		•		
	Building-Level /Advanced Energy Metering	•		•		
	Fundamental/Enhanced Refrigerant Management		•	•		
	Fundamental/Enhanced Commissioning	•				
	Grid Harmonization		•			
	Renewable Energy		•	•		
MR	Storage and Collection of Recyclables		•			
	PBT Source Reduction-Mercury		•	•		
	Building Life-Cycle Impact Reduction		•			
	Environmental Product Declarations					
	BPDO – Raw Materials Sourcing			•		
	BPDO – Material Ingredients			•		
	PBT Source Reduction-Lead, Calcium, Copper		•	•		
	Furniture and Medical Furnishings					

LEED Credit Guidance Checklist (Continue) Credits: IP – Integrated Project Planning LT – Location & Transportation SS – Sustainable Sites WE – Water Efficiency EA – Energy & Atmosphere MR – Materials & Resources EQ – Indoor Environmental Quality IN – Innovation RP – Regional Priority		Schematic Design	Design Development	Construction Documents	Pre-Construction	Construction
MR	Design for Flexibility					
	Construction and Demolition Waste Management			•		
EQ	Minimum/Enhanced Air Quality Performance		•	•		
	ETS Control		•	•		
	Low-Emitting Materials		•			
	Construction IAQ Management Plan			•		
	IAQ Assessment		•			
	Thermal Comfort		•	•		
	Interior Lighting		•	•		
	Daylight		•	•		
	Quality Views		•	•		
	Acoustic Performance		•	•		
IN	Innovation/Pilot Credits		•	•		
	LEED AP		•			
RP	Regional Priority					

II. Sustainability and Resiliency Submission Checklist

While the submission checklist below indicates required deliverables, it is understood that an integrative design approach will precede these deliverables (whether pursuing LEED or not). Should any project phase be skipped, initial deliverables shall be provided in the preceding phase, not in subsequent phases.

KEY:

- ● First submittal of applicable calculations, narratives and supporting documents necessary to demonstrate that requirements are met.

- o Continue to update documents for each subsequent submittal through to endpoint. Updates to text should be identified in bold or some other means of identification.

Sustainability + Resiliency Submission Checklist	**DESIGN PHASE**						**CONSTRUCTION PHASE**				
For description of submission deliverables listed below see Section Z/10 of the guide	0.0 Pre-Schematic 0.1 SD interim 1	0.2 SD Interim 2	1.0 SD Final	2.0 DD	3.0 75% CD	4.0 100% CD	Pre-Construction	Post- Construction	CPSD – Stage I	CPSD – Stage II	CPSD – Stage III
NYC ENERGY CONSERVATION CODE											
Compliance Path Approach		●	o	o	o	o			●	o	o
Tabular Analysis/COMcheck/ Energy Model				●	o	o					
Thermal Bridge Analysis				●	o	o					
SYSTEMS/WHOLE BUILDING ENERGY USE											
Energy Audit Report	●								●		
Energy Analysis/Modeling Report		●	o	o	o	o					●
LOW ENERGY INTENSITY BUILDINGS											
Approach and EUI Target	●	o	o	o	o	o			●	o	o
Energy Analysis Design Alternatives		●									●
Energy Model report			●			o					
On-Site Renewables Feasibility Study	●										●
NetZero Feasibility Study	●	o	o								●
LEED DELIVERABLES											
Integrative Process Report			●	o	o						
Environmental Programming Matrix			●	o	o						●

Sustainability + Resiliency Submission Checklist (Continue)	**DESIGN PHASE**						**CONSTRUCTION PHASE**				
For description of submission deliverables listed below see Section Z/10 of the guide	0.0 Pre-Schematic 0.1 SD interim 1	0.2 SD Interim 2	1.0 SD Final	2.0 DD	3.0 75% CD	4.0 100% CD	Pre-Construction	Post- Construction	CPSD – Stage I	CPSD – Stage II	CPSD – Stage III
LEED DELIVERABLES (CONTINUED)											
LEED Checklist			●	○	○						●
LEED Plan			●	○	○						●
Energy Goals Statement			●	○	○						●
LEED Registration			●								
LEED Construction Application							●				
LEED Specifications					●	○					
SOLAR ASSESSMENT											
Sustainable Roofing Zone	●	○	○	○	○	○					
Green Infrastructure Study	●	○	○	○	○	○					
Geothermal Pre-Feasibility Tool	●								●		
Electric Vehicle Capacity				●	○	○					●
Greenhouse Gas Emissions Assessment			●	○	○	○					●
Water Use Reduction				●							●
ENVIRONMENTAL PERFERABLE PURCHASING											
EPP Compliance Specifications				●	○	○					○
EPP Report						●					
MOEC LL 51 Reporting Form			●	○		○	○	○			
Active Design Checklist			●	○	○	○					●
MOCEJ LCA Reporting Form		●	○	○	○	○	○	○			

Sustainability + Resiliency Submission Checklist (Continue)	**DESIGN PHASE**						**CONSTRUCTION PHASE**				
For description of submission deliverables listed below see Section Z/10 of the guide	0.0 Pre-Schematic 0.1 SD interim 1	0.2 SD Interim 2	1.0 SD Final	2.0 DD	3.0 75% CD	4.0 100% CD	Pre-Construction	Post- Construction	CPSD – Stage I	CPSD – Stage II	CPSD – Stage III
CLIMATE RESILIENCY											
Risk Assessment	●	o	o	o	o				●	o	o
Planning		●	o	o					●	o	o
Risk Abatement Strategies				●	o	o				●	

04 HISTORIC PRESERVATION

04/A HISTORIC PRESERVATION OVERVIEW

Regardless of the outside regulatory framework, all projects affecting historic properties are reviewed by the DDC Historic Preservation Office for conformance with historic preservation standards, generally defined by LPC rules and guidelines and/or the Secretary of the Interior's Standards for treatment of historic properties. The scope of the project will determine the most appropriate way to apply preservation standards. Every effort shall be made to achieve full compliance with the standards and to protect the historic and architectural features which support the designation, listing, or eligibility of the property.

It is critical for preservation expertise to be brought to bear at an early planning stage. Early decisions that define a project's direction can have serious implications for the historic and architectural integrity of a building or site beyond technical preservation and materials conservation.

04/B HISTORIC PRESERVATION JURISDICTION

Historic preservation design criteria apply to work on structures, interiors, sites, streetscapes and works of art that fall into three categories based on the regulatory framework:

- Designated New York City landmarks, interiors, scenic landmarks, and properties in designated historic districts – including all features within the boundaries of scenic landmarks and historic districts – are subject to regulatory oversight by the NYC Landmarks Preservation Commission (LPC). The Commission makes little distinction in regulatory procedure or standards between individual landmarks and properties within historic districts.
- Properties that are not designated by the LPC but are of landmark quality, including those listed on or eligible for the New York State or National Registers of Historic Places, or eligible for local designation by virtue of their significant historic, cultural, architectural or landscape features, are not subject to regulatory oversight by the LPC. The determination of whether properties affected by a project are landmark quality is made by DDC's Historic Preservation Office (HPO) in consultation with the New York State Historic Preservation Office and the Landmarks Preservation Commission.
- Projects affecting properties in both above categories may require review by the NY State Historic Preservation Office (SHPO) and under the City Environmental Quality Review Act (CEQR) or]other environmental review laws, depending on funding sources and potential for adverse impacts on historic resources. Projects affecting works of art will also require review by the Public Design Commission.

04/C HISTORIC PRESERVATION PROJECT REQUIREMENTS

The extent of services described below may vary according to the overall scope of work and regulatory framework. Other services may be required and may be more fully described in the FEP Report/Scope of Work or Task Order. Beyond the typical project deliverables included at design phase milestone submissions, other required services may include:

I. Historic Preservation Specialists

As required for the project, the Consultant shall provide a full range of preservation and conservation services by qualified experts. These experts shall be used wherever appropriate, in all phases of the project, including construction. The level of their participation and the extent of their responsibility shall

be clearly defined at the beginning of the project. Specialists who may be required include, but are not limited to: historians, archaeologists, architectural and art conservators, materials specialists, historic structural and systems engineers, historic landscape architects, and advisors on special crafts associated with historic properties.

II. Design Requirements

All design options shall respect the historic and architectural integrity of the structure or site. At least one option must fully conform to applicable LPC guidelines and rules and the Secretary of the Interior's Standards. Any project affecting a historic resource, even if it primarily involves non-architectural trades or is not specifically for historic preservation, can have preservation implications, which must be considered in the design. Each scheme must fully explain the approach and the consequences as they relate to preservation issues. If the design calls for Special Experience Requirements., see Section Z/14C. The Consultant may be required to prepare an application for the determination of eligibility for the National or State Historic Register as an additional service.

During Construction, the Consultant may be required to participate in site visits to view qualifying work. See Section 3000.02/C.

05 PERCENT FOR ART

05/A PERCENT FOR ART OVERVIEW

As the City's primary capital construction project manager, the Department of Design and Construction (DDC) partners with DCLA to implement the Percent for Art program on eligible capital projects.

The Percent for Art Program offers City agencies the opportunity to acquire, commission, or restore works of art specifically for City-owned buildings throughout the five boroughs. Managed by the City's Department of Cultural Affairs (DCLA), the Percent for Art Program has commissioned hundreds of site-specific projects in a variety of media — painting, new technologies, lighting, mosaic, glass, textiles, sculpture, and works that are integrated into infrastructure and architecture — by artists whose sensibilities reflect the diversity of New York City. Percent for Art seeks to commission works from the broadest range of artists from all backgrounds. By bringing artists into the design process, the City's civic buildings and public spaces are enriched. For more information and to view examples of past Percent for Art projects visit: www.nyc.gov/percent.

05/B PERCENT FOR ART JURISDICTION

Since 1982, New York City's Percent for Art law (Local Law 65/1982) has required that one percent of the budget for eligible City-funded construction projects be spent on public artwork. The Percent for Art law is defined in Chapter 9 § 224 of the New York City Charter, and procedures related to the implementation of the law are described in Title 43 § 2 of the Rules of the City of New York.

I. Commissioning Public Art

The art allocation can be used in several different ways, as described below. The approach employed will be based on the specific considerations of each project.

/a Artist Full Services
The Artist is responsible for designing, fabricating, and installing a site-specific artwork. The Consultant ensures that the capital project has been designed to properly receive the artwork at installation.

/b Artist Design Only
The Artist collaborates with the design team to develop an artwork that is fully integrated into the design of the capital project. The Contractor is responsible for installing the artwork as part of the construction of the capital project.

/c Artwork Purchase
Readily available artworks may be chosen and purchased for pre-determined locations within the capital project. The Consultant manages transport, delivery, installation, and any other vendor services in relation to the artworks.

/d Artwork Conservation
Existing artwork is accessed and conserved by professionals. When appropriate, the art allocation can be used for restoring or refurbishing existing artworks for the site, the moving of artworks to the eligible project from another site, storage of artwork offsite while building renovation is in process, or any other appropriate alternative recommendations. The Consultant manages the conservation project and ensures that any necessary site preparation is completed before the installation or re-installation of the artwork.

II. Percent for Art Core Review Group

All artwork reviews are conducted first by the Core Review Group (CRG). The CRG includes representatives of:

- The Consultant
- The Department of Design and Construction
- The Department of Cultural Affairs
- The project Sponsor Agency
- The facility user, if applicable

III. Community Board (NYCCB), PDC, LPC and Interagency Coordination Requirements

/a Percent for Art and The NYCCB
Once an artwork proposal is approved by the Core Review Group, and before Conceptual review by the Public Design Commission, the proposal must be presented to the local community board. A Community Board Letter is required for PDC conceptual review.

/b Percent for Art and The PDC
All Percent for Art commissions must be reviewed by the Public Design Commission (PDC) See Section 1000/06D (PUBLIC DESIGN COMMISSION) for more information about the submission process for ArtWork with PDC.

/c Percent for Art and The LPC
On occasion Percent for Art may require coordination with LPC, in which case, PDC will continue to approve the Artwork however LPC will serve in an advisory role.

05/C PERCENT FOR ART REQUIREMENTS

For each eligible capital project, an art project manager from DDC's Public Art Unit and a representative of the Percent for Art Program at DCLA join the project management team for the duration of the project.

Upon Artist selection, the Consultant shall retain and contract with the selected Artist(s). See Section 4000.01/B for Percent for Art Contract requirements. The Artist shall be responsible for providing the artwork, as described in the Percent for Art contract. The actual contract utilized will be determined by the specifics of a given project and the artwork approach pursued.

The artwork shall be reviewed and approved at key milestones, as described in the Percent for Art contract for the project.

The Consultant shall:

- Design any site preparation required to integrate the artwork with the design of the capital project, including engineering and detailing or accommodating all resources necessary to support the artwork;
- Advise the Artist of all applicable statutes, ordinances, and regulations of any governmental regulatory body having jurisdiction over the project and monitor the Artist's compliance with said requirements;
- Participate in meetings and give presentations;
- Provide project materials and information to the Artist;
- Make payments to the Artist for services performed; For contract information see Section 4000.01/B;

- Coordinate reviews of the artwork at key milestones;
- Monitor compliance by and act as liaison to the Artist with regard to certain procedures as set forth in the Percent for Art contract for the project.

I. Percent for Art Process during the Design Phase

/a Pre-Schematic/Schematic Design Phase

/i. Site Selection

The Consultant is responsible for determining appropriate locations for potential artworks. It is critical that a site is selected which works within the scope and budget of the project and has been fully vetted for design impacts.

/ii. Initial Artwork Meeting

The Consultant is asked to participate in a brainstorm meeting to consider opportunities for artwork and any constraints within the project scope. The Consultant may recommend general locations and site parameters for the artwork, a concept (i.e. media, style, materials), and/or artists to be considered. An overview of the Percent for Art process is provided during the meeting.

/iii. Artist Selection Process Overview (Managed by DCLA)

The Consultant serves as an advisor during the Artist Selection Process. NYC Percent for Art selections are administered by the Department of Cultural Affairs. Artist or Artist-Teams are typically selected through a two-panel process and artist orientation:

Community Outreach: DCLA informs local electeds as well as schedules a presentation with the local community board to inform them about the upcoming artist selection. DDC informs consultant, but their attendance is not required.

1. Artist Selection Panel 1: Selection of Finalist
    a. The Consultant will present a brief overview of the project and art opportunities to the artist selection panel. The presentation should include project scope, site designs, art opportunities and any related constraints, budget, schedule, and any other considerations relevant to the panelists, Sponsor Agency, site context, and/or local community.
    b. During the panel, DCLA staff will present approximately 30 to 60 different artists to be considered for the project. The group of artists considered may include suggestions from: the Consultant, Project Team, panelists, community members, and/or elected officials, among others. A DCLA staff person chairs the panel and the voting panelists choose a small group of artists to be considered as finalists, generally 3 to 6 artists.
    c. The voting panelists include three arts professionals from the neighborhood or borough where the project will be located and one representative each from DCLA's Percent for Art Program, DDC's Public Art Unit, and the Sponsor Agency. The Consultant and all other participants are considered advisory panelists. An invitation to participate in the selection panel in an advisory capacity is also extended to representatives of the Public Design Commission, local community board, and local elected officials.

2. Artist Orientation:
    a. DDC and DCLA staff will arrange a project orientation for the artist finalists. The orientation meeting may be conducted on site, where appropriate. During the meeting, the Consultant and Project Team will provide an overview of the project and neighborhood context, current design, artwork budget, opportunities and constraints for the artwork, and potential locations, if identified.

b. The Consultant shall distribute electronic file copies of the current design materials to the artist finalists before or immediately following the Artist Orientation. The materials will include: a project narrative that includes project history, mission, vision and scope; a design description that includes site map, existing site photos, proposed plans, and renderings or other visuals that will inform the artists about the project, site, and opportunities; a community profile; drawings of identified art locations and opportunities; and project sponsor information.

c. The Consultant shall also be available to respond to questions or requests for additional information from the artists, as requested.

3. Artist Selection Panel 2: Selection of Artist/s
   a. The Consultant will present a brief overview of the project and art opportunities to the artist selection panel. The Consultant shall participate as an advisor to the panel.
   b. Each artist is given a 30-minute time slot to present his/her proposal and/or past work to the panel.
   c. The voting panelists select an artist(s) who will be awarded the commission, plus one or more alternates. Afterward, DCLA will notify the artist finalists of the outcome of the panel.
   d. Percent for Art Contract
   e. Upon selection, the Consultant shall retain and contract with the selected Artist(s), using the approved Percent for Art contract for the project, as provided by the City.
   f. If applicable, Payment Milestone A (Initial Proposal) is payable upon contract signing and submission of an initial proposal for the artwork

4. Workshop/Design Charrette (alternate to #3)

   If requested, a charrette may be held with project stakeholders and/or potential artists under consideration. The Consultant will prepare and present opportunities for artwork and any related constraints within the context of the proposed project. The Consultant will use the charrette to gather feedback about the site, initial artwork ideas, and to assess compatibility with the Consultant's design approach, and Sponsor Agency or community goals and preferences. This charrette may be conducted in lieu of Artist Selection Panel 2, depending on the project.

/b Design Development Phase

/i. Artist Conceptual Design Development

The Consultant will participate in meetings with the artist and/or Project Team throughout the Conceptual Design development process.

1. The Artist's Conceptual Design phase usually begins with a kick-off meeting with the artist and CRG/Project Team.
2. The Consultant shall distribute electronic file copies of the current design materials to the artist, as requested. The materials requested may include: a project narrative, location maps, photos of the existing site and neighborhood context, existing and proposed site plans, and drawings, renderings, or other visuals.
3. Throughout the Design Development phase, the Artist and Consultant shall work together to integrate the artwork into the project design and the Consultant shall advise the artist and Project Team of any applicable regulations, design parameters, and/or potential issues.

/ii. Artist Conceptual Design Review

1. Core Review Group

   Upon the Artist's submission of a completed Conceptual Design proposal, the Consultant shall arrange for review of the Conceptual Design proposal by the CRG.

2. Community Board (for NYCCB requirements see Section 1000.06/C)

   Once the Artist's Conceptual Design proposal has been approved by the CRG, and before Public Design Commission review, the City will schedule a presentation to the local community board for the project, if applicable. The Consultant will attend the community board meeting to answer any relevant questions and give a presentation if requested.

3. Public Design Commission (for PDC submission requirements see Section 1000.06/D)

   Following the presentation of the Artist's Conceptual Design proposal to the community board or, if no such presentation is made, after the Conceptual Design is approved by the CRG, DDC, and DCLA will submit the artist's proposal to the Public Design Commission for Conceptual review. During the period in which the Public Design Commission is considering the Conceptual Design proposal, the Artist and Consultant shall be available to meet with the Project Team, Percent for Art Program, and/or Public Design Commission to discuss the Conceptual Design proposal and make revisions as requested. The Consultant shall accompany the artist to the Public Design Commission hearing for the artist's Conceptual Design proposal, if applicable, and be prepared to answer any relevant questions.

   If applicable, Payment Milestone B (Conceptual Design) is payable upon approval by Public Design Commission of the Conceptual Design proposal for the artwork.

/c Construction Documents Phase

/i. Artist Preliminary Design Development

After Public Design Commission approval of the Artist's Conceptual Design proposal, the Artist will prepare and submit to the Consultant a detailed Preliminary Design proposal for the artwork. The Preliminary Design proposal should specify the materials, dimensions, weight, finish, proposed site preparation requirements, proposed installation method, and any additional modifications to the site necessary to prepare it for the artwork. To assist the artist in preparing the Preliminary Design proposal, the Consultant shall furnish to or obtain for the artist all drawings, material samples, and other similar documentation necessary to enable the artist to prepare the Preliminary Design proposal in compliance with any applicable legal requirements.

/ii. Artwork Site Preparation/Design Integration

The Consultant is responsible for coordinating the design of the selected site with the artwork, including engineering and detailing all resources necessary to support the artwork and/or accommodating electrical, structural, landscaping, lighting, footings, plumbing, and any other loads imposed by the artwork; provided, however, that all such work shall have been fully outlined and approved in advance by the City as part of the approved artwork design. By 75% CD review, the CDs shall note all artwork locations on relevant drawings and all required site preparation shall be detailed, including any drawings, dimensions, specifications, notes, and/or other information required by the Contractor; or that are necessary for proper coordination during construction.

/iii. Artist Preliminary Design Review

1. Core Review Group

   Upon the Artist's submission of a fully developed Preliminary Design proposal, the Consultant shall arrange for review of the Preliminary Design proposal by the CRG.

2. Public Design Commission (for PDC submission requirements see Section 1000.06/D)

   Following CRG approval of the artist's Preliminary Design proposal, DDC and DCLA will submit the artist's proposal to the Public Design Commission for Preliminary review. During the period in which the Public Design Commission is considering the Preliminary Design proposal, the artist and Consultant shall be available to meet with the Project Team, Percent for Art Program, and/or Public Design Commission to discuss the Preliminary Design proposal and make revisions as requested. The Consultant shall accompany the artist to the Public Design Commission hearing for the artist's Preliminary Design proposal, if applicable, and be prepared to answer any relevant questions.

3. If applicable, Payment Milestone C (Preliminary Design) is payable upon approval by Public Design Commission of the Conceptual Design proposal for the artwork.

II. Percent for Art Process during the Construction Phase

/a General Construction Coordination

The Consultant will monitor construction progress, with special attention paid to ensuring that site preparation for the artwork is scheduled appropriately, executed correctly, and coordinated with any relevant sub-contractors.

/b Artwork Shop Drawings Review

The Consultant, along with the CRG, shall review all shop drawings, including materials, means, and methods, and provide comment. The Consultant should inform the CRG in writing of any proposed deviation from the approved Preliminary Design for the artwork. Significant changes in the appearance, color, or dimensions of the artwork may require submission of an amended Preliminary Design proposal to the Public Design Commission for review. Upon approval of shop drawings for the artwork, a Notice to Fabricate will be issued by DDC. Fabrication should not commence before a formal Notice to Fabricate is issued.

If applicable, Payment Milestone D (Notice to Fabricate) is payable upon the artist's submission of approved schedule for fabrication and installation, and receipt of a Notice to Fabricate.

/c Artwork Inspection at 50% Fabrication

The Consultant, along with the City, will inspect the artwork at 50% fabrication completion and provide comment. The Consultant should inform the CRG in writing of any deviation from the approved Preliminary Design and/or shop drawings for the artwork. Upon approval by the CRG, DDC will issue a letter documenting the approval.

If applicable, Payment Milestone E (50% Fabrication) is payable upon 50% completion of the fabrication of the artwork, as determined by the CRG.

/d Artwork Inspection at 100% Fabrication

The Consultant, along with the City, will inspect the artwork at 100% fabrication completion and provide comment. The Consultant should inform the CRG in writing of any deviation from the approved Preliminary Design and/or shop drawings for the artwork. Upon approval by the CRG, DDC will issue a letter documenting the approval.

If applicable, Payment Milestone F (100% Fabrication) is payable upon completion of the fabrication of the artwork and preliminary acceptance of the artwork by the CRG.

/e Artwork Installation

Once installation of the artwork is complete, the Consultant, along with the City, shall inspect the artwork along with any related plaques or signage and provide comment. The Consultant should inform the CRG in writing of any deviation from the approved Preliminary Design for the artwork, or if there are outstanding construction issues that affect or may affect the artwork. If, after artwork installation, there will be ongoing or future construction activities that could affect the artwork, the Consultant shall ensure that appropriate measures are being taken to protect the artwork. Upon approval by the CRG, DDC will issue a letter documenting the approval.

If applicable, Payment Milestone G (Installation) is payable upon determination by the CRG that the artwork as installed is ready for review and acceptance by the Public Design Commission.

/f Post installation Final Review (for PDC submission requirements see Section 1000.06/D)

After installation approval and the resolution of any missing, incorrect, or incomplete items affecting the artwork, the Artist shall submit their final deliverables to the City, including installation photos of the artwork in situ. DDC and DCLA will then submit the artwork installation photos to the Public Design Commission for Final Review.

/g Artist Payment

If applicable, Payment Milestone H (Final Acceptance) is payable upon Final Acceptance of the artwork by the Public Design Commission and completion of all other service required of the artist under the Percent for Art contract, including submission to Percent for Art of all required documentation.

06 REGULATORY BODIES

06/A GENERAL REQUIREMENTS

I. Regulatory Procedure Requirements

Unless otherwise noted below, the design consultant is responsible for filing complete applications and documentation with the appropriate regulatory entities and utility companies and obtaining all approvals for the project in accordance with current requirements.

Prior to initiating any regulatory agency filings, the Consultant must ensure a DDC-assigned delegate is included as a contact in all applications. The delegate will be identified by DDC and must be included in all correspondence with regulatory agencies. Once a regulatory agency issues an application number, these numbers must be shared with DDC.

In addition, it is expected the Consultant will comply with the following:

1. Code, Zoning or Variance determinations must only be utilized in instances where interpretation of the code or law requires verification or projects have considerable undue hardships. Determinations are not acceptable as a means to side-step additional program requirements, mix and match applicable codes or conform to a design preference.
2. Filing for Regulatory Agency approval and requests for utility service must be submitted at the earliest reasonable time and objections from the Regulatory Agencies must be resolved prior to Design Completion.
3. Immediately upon filing any application, the Consultant shall submit copies to the DDC Project Manager.
4. The Consultant shall coordinate permitting and approval amendments in a timely manner and in accordance with regulatory entity requirements to maintain project schedule, ensure inspections can be conducted, and obtain required sign-offs.
5. Consultant shall provide a regulatory approval matrix with dates on DDC provided template, (see Z General Deliverables) and track approvals to incorporate in the overall design schedule.

II. Regulatory Compliance Requirements

It is the professional responsibility of the Consultant to ensure that the project's design satisfies all applicable codes and regulations. Approvals from regulatory entities and utility companies do not constitute exemption from code or regulation compliance. The project shall meet and/or exceed the requirements of code, zoning, accessibility and local laws:

1. The design shall reflect the spirit and intent of the code, law or regulation and any interpretation must avoid exploitation of ambiguities at the expense of public safety and service.
2. Life safety, accessibility, user comfort, public use and community impact must be prioritized.
3. When included within the project scope, the design shall rectify or improve, to the extent possible, any non-compliant or hazardous conditions or structural, envelope, utility, accessibility and life safety shortfalls. This is particularly important for projects whose renovation costs will trigger additional code, law or regulatory compliance requirements.
4. For major renovations, the building construction type, use and occupancy must align with the Certificate of Occupancy.

06/B DEPARTMENT OF BUILDINGS (DOB)

I. DOB Overview

The mission of the NYC Department of Buildings (DOB) is to ensure the safe and lawful use of buildings, properties, and construction sites across the five boroughs by enforcing the City's Building Code, Zoning Resolution, Multiple Dwelling Law, and New York State Labor Law, with a focus on facilitating compliant development, and worker and public safety, all to make our City a safer place to build, work, and live.

II. DOB Jurisdiction

DOB enforces compliance of all New York City projects with the New York City Construction Codes (includes General Administrative Provisions, Plumbing Code, Mechanical Code, Fuel Gas Code and Building Code), Zoning Resolution, the Energy Conservation Code and the New York State Multiple Dwelling Law. DOB also ensures other agencies compliances are achieved (DOT, PDC, LPC, DEP, FDNY) and monitors code compliance and site safety by inspections conducted during construction.

The DDC and the DOB implemented a coordinated application process aimed at streamlining Public Building projects from initial filing to final signoff. Consultants must work with the DDC PM to follow appropriate procedure for the project type.

III. DOB Project Requirements

/a Filing Applications

All DOB filings will be routed through the Central Development Program (CDP) at the DOB. Depending on the complexity of the project, this process may begin as early as the Schematic Design (SD) phase or as late as the 50% Construction Document (CD) phase. Additionally, a consultation with either the HUB or CDP may be required.

/i. Consultation Phase (certain project types)

A consultation with the CDP is only required for Major Alterations or New Buildings of 7 stories and under and Emergency Declarations (from the Mayor's Office). The consultation must include the following attendees: DDC-DOB Liaison, DDC P&A filing rep, Consultant, PM, A&E team leader and the applicant must be prepared to discuss and take minutes on the following:

1. Scope of the project(s)
2. Timeline
3. Proposed filing strategy
4. Required approvals from regulatory agencies
5. Pre-considerations for code and zoning issues, if applicable, and
6. Include needed documents such as: SD interim two option schemes and surveys

Note: All high-rise New Buildings filings and major alterations will follow the existing HUB procedure instead of the above.

/ii. Pre-filing Phase (all projects)

Applicants must pre-file the job(s) through DOB NOW. When prompted, please be sure to select the "City Projects" flag to ensure the job is processed through Central Development, subject to availability in DOB NOW.

The applicant must email DDC-DOBFILINGS@ddc.nyc.gov and copy the DDC Project Manager for the assignment of a delegate to the project. On the subject line: "(FMS #) (Address) (Job #(s))(BIN)"

Immediately after prefiling email job number(s) to CDPFiling@buildings.nyc.gov to facilitate tracking of the job by CDP's Project Advocates. On the subject line: "PRE-FILED: Agency: DDC (Address)(Job #(s))(BIN)"

/iii. Filing Phase (all projects)

File the job(s) through DOB NOW. Immediately email the filed job number(s) to CDPFiling@buildings.nyc.gov and DDC-DOBFILINGS@ddc.nyc.gov to notify the , using the subject line: "FILED: Agency: DDC (Address)(Job #(s))(BIN)"

The DDC delegate (in the previous step) must be identified in the delegate field in DOB NOW filing to ensure DDC access to the filing; otherwise, DOB will reject the application.

CDP will ensure that the filing(s) are routed to the CDP Plan Examination team.

Copy our DDC email DDC-DOBFILINGS@ddc.nyc.gov and the DDC Project Manager.

/b Approvals and Documentation

The following approvals and related documentation must be submitted to the DDC for project records:

1. Predeterminations

   Predeterminations or CCD-1's filed with the DOB must be submitted to DDC A&E with Design Submissions no later than Schematic Design Final. This includes denials as well as approvals.

2. Objections

   Any/all objections issued by the DOB Plan Examiner must be submitted to DDC A&E with Design Submissions at 75% CD and any objections from the Plan Examiner should be resolved prior to the 100% Submission, or a copy of the outstanding objections must be submitted to DDC A+E no later than the 100%CD Design Submissions.

3. Approved Drawing Set

   An electronic copy of the approved drawing set must be submitted to DDC A&E.

4. Post Approval Amendments

   An electronic copy of the approved amended sheets must be submitted to DDC A&E.

5. Outside Agency Regulatory Approvals

   PDC, LPC, DEP, FDNY, DEC, FAA are among the number of outside City, State and Federal agencies required to obtain a DOB permit and/or Sign-off/Certificate of Occupancy. Approvals must all of these Agencies must be submitted to DDC A&E.

6. Final Sign-off/Certificate of Occupancy

   An electronic copy of the Letter of Completion or Certificate of Occupancy must be submitted to DDC A&E.

06/C NEW YORK CITY COMMUNITY BOARD (NYCCB)

I. NYCCB Overview

Community boards are local representative bodies. There are 59 community boards throughout the City, and each one consists of up to 50 unsalaried members, half of whom are nominated by their district's City Council members. Board members are selected and appointed by the Borough Presidents from among active, involved people of each community and must reside, work, or have some other significant interest in the community. Each community board is led by a District Manager who establishes an office, hires staff, and implements procedures to improve the delivery of City services to the district. While the main responsibility of the board office is to receive complaints from community residents, they also maintain other duties, such as processing permits for block parties and street fairs. Many boards choose to provide additional services and manage special projects that cater to specific community needs, including organizing tenants associations, coordinating neighborhood cleanup programs, and more.

Board committees do most of the planning and work on the issues that are brought to action at community board meetings. Each community board establishes the committee structure and procedures it feels will best meet the needs of its district. Committees may be functional committees that deal with specific Charter mandates (e.g. "Land Use Review" and "Budget" committees) or agency committees that relate to a particular agency (e.g. "Police" and "Sanitation" committees), among other structures. Non-board members may apply to join or work on board committees, which helps provide additional expertise and manpower.

II. NYCCB Jurisdiction

Responsibilities, include but are not limited to:

1. Dealing with land use and zoning issues: CBs have an important advisory role and must be consulted on the placement of most municipal facilities in the community. Applications for a change in or variance from the zoning resolution must come before the board for review, and the board's position is considered in the final determination.
2. Assessing the needs of their own neighborhoods: CBs assess the needs of their community members and meet with City agencies to make recommendations in the City's budget process.
3. Addressing other community concerns: Any issue that affects part or all of a community, from a traffic problem to deteriorating housing, is a proper concern of community boards. It is important to note that while community boards serve as advocates for their neighborhood, they do not have the ability to order any City agency or official to perform any task. Despite this limitation, boards are usually successful in resolving the problems they address.

III. NYCCB Project Requirements

All projects that must undertake a Public Design Commission, Percent for Art or Landmarks Preservation Commission review must begin with a presentation reviewed by the community board and/or a particular committee and/or the Full Board themselves.

The Consultant is responsible for all services in support of Community Board notification and review, if required or if requested by DDC. The Consultant should be in direct contact with DDC/Office of Community Outreach & Notification (OCON) to begin this process.

Some important scheduling constraints:

1. Community Boards have pre-set meeting dates/times/locations. The Consultant must anticipate the need to present to the community board and as soon as possible and with the knowledge and assistance of DDC-Office of Community Outreach & Notification (OCON). It is much more likely to be added to the agenda for any committee one or two months in advance then it is to be added on an agenda that is only a few days or weeks away.
2. Community Boards generally do NOT have any meetings in July or August (Summer Hiatus)

06/D PUBLIC DESIGN COMMISSION (PDC)

I. PDC Overview

/a History

PDC was originally established as the Municipal Art Commission in 1898 to regulate public art and architecture. Created in response to the City Beautiful movement, the Art Commission was established as part of the City Charter that consolidated the five boroughs into a single municipality. It was renamed the Public Design Commission in 2008 to better reflect its mission:

"To advocate for innovative, sustainable, and equitable design of public spaces and civic structures, with a goal of improving the public realm and therefore related services for all New Yorkers throughout the five boroughs." Additional information can be found on the Commission's website at: http://www1.nyc.gov/site/designcommission/index.page.

/b People

PDC is comprised of eleven Commissioners serving pro bono and a staff headed by an Executive Director. As stipulated by the City Charter, the Commissioners include an architect, landscape architect, painter, sculptor, and three lay members, all of whom are nominated by the Fine Arts Federation and appointed by the mayor. They also include one representative of the Mayor's Office, the Metropolitan Museum of Art, the New York Public Library, and the Brooklyn Museum.

At DDC, all communications with PDC are managed through the Design and Construction Excellence (D+CE). For capital projects, the D+CE Design Liaison serves as the Liaison to PDC and is responsible for guiding Consultants through the PDC review process and handling all capital project PDC-related matters on behalf of the agency. For artworks, the Public Art Manager serves as the Liaison to PDC and is responsible for guiding Artists through the PDC review process and handling all artwork PDC-related matters on behalf of the agency.

/c Process

PDC reviews capital projects and artworks during design, construction, and closeout. PDC Commissioners meet once a month to review projects submitted by all agencies Citywide. Any capital projects or artworks requiring review by PDC must be listed on DDC's monthly transmittal to PDC and a comprehensive submission package must be submitted to PDC on the monthly submission deadline. Before a project can be submitted to PDC for review, a complete draft of the submission package must be reviewed and approved by DDC, the Sponsor Agency as well as any other agency stakeholders identified for the project. In addition, the community is provided with an opportunity to review projects prior to PDC review through the Community Board process. For additional information related to the Submission and Review Process, please refer to Section 1000.06/D III. For additional information related Interagency and Community Board Coordination Requirements, please refer to Section 1000.06/D II/e.

II. PDC Jurisdiction

/a Applicability

Applicability of PDC design review jurisdiction on any given DDC capital project or artwork is determined during DDC's Front End Planning process and is designated in the Front-End Planning report.

Many of the capital projects and all permanent artworks within DDC's Public Buildings portfolio require review by the Public Design Commission (PDC). For capital projects, PDC approval is required to obtain a building permit and a Certificate of Occupancy from the Department of Buildings (DOB).

As stipulated in Chapter 37 of the New York City Charter, PDC is New York City's design review agency holding design review jurisdiction over permanent works of architecture, engineering, landscape, and art located on City-owned property, where "permanent" is defined as lasting for 365 days or more and where "City-owned property" is not considered a landmark. PDC's purview applies to exterior work only, regardless of whether that work is visible, except in the case of art. For artworks, PDC's purview applies to both exterior and interior installations.

PDC Applicability	
Capital Projects*	**Artworks**
City-owned property** + 365 days or more + Exterior Alteration	City-owned property** + 365 days or more + Exterior or Interior Installation
*Includes swing space and projects that fall under an emergency declaration **For any project that is an individual landmark, a scenic landmark, or is located within an historic district, binding design review jurisdiction may fall under Landmarks Preservation Commission (LPC).	

/b Capital Project Reviews

For capital projects, the number and level of PDC reviews required for any given capital project depend on the project type, scope, size, and complexity. In general, new construction projects, including new buildings, additions, and master plans require four levels of review – Conceptual, Preliminary, Final, and Final Signoff. Major renovation, partial renovation that involves exterior scope such as façade replacements/renovations, ADA upgrades, and site improvements require three levels of review – Preliminary, Final, and Final Signoff. Single or Multi-System Upgrade projects, such as HVAC upgrades, roof replacements, or window replacements require two levels of review – combined Preliminary + Final, and Final Signoff.

For any capital project, additional reviews may be required including, Pre-Conceptual, Amended Preliminary, Amended Final, Amended Preliminary + Final, and/or Extension of Approval. Waivers may be available for strictly replacement-in-kind projects.

The PDC Reviews Required for Capital Project Type and Phase are outlined in the table on next page.

PDC Reviews Required for Capital Project Type and Phase	DESIGN PHASE			CONSTRUCTION PHASE
	75% SD (SD Interim II, Technical Proposal)	**100%** (SD Final, SD)	**75% CD**	**Construction Completion**
New Construction	Conceptual	Preliminary	Final	Final Signoff
Major Renovation with Exterior Scope	n/a	Preliminary	Final	Final Signoff
Partial Renovation with Exterior Scope	n/a	Preliminary	Final	Final Signoff
Multi-System Upgrade with Exterior Scope	n/a	n/a	Preliminary+Final	Final Signoff
Single System Upgrade with Exterior Scope	n/a	n/a	Preliminary+Final	Final Signoff
Replacement-in-Kind with Exterior Scope	Waiver			

/i. Conceptual Review

Conceptual review is recommended to occur at 75% Schematic Design, upon selection of a preferred Schematic Design option. It is required for all new buildings, additions, master plans, or other large-scale or complex projects. Upon receiving Conceptual approval, if the design changes substantially or if PDC includes "conditions" in their Conceptual approval, the capital project must be submitted for Amended Conceptual review prior to proceeding to Preliminary review.

/ii. Preliminary Review (Community Board review required)

Preliminary review is recommended to occur at 100% Schematic Design upon identification of exterior materials, equipment, and site furnishings, and after Community Board review. It is required for all projects that were reviewed at a conceptual level, and for major renovation or partial renovation projects with exterior scope. Upon receiving Preliminary approval, if the design changes substantially or if PDC includes "conditions" in their Preliminary approval, the capital project must be submitted for Amended Preliminary review prior to proceeding to Final review.

/iii. Final Review

Final review is recommended to occur at 75% Construction Documents upon final development of the project exterior, including exterior detailing. It is required for all projects that were reviewed at Conceptual and Preliminary levels. Final approval by PDC is required to obtain a building permit from the Department of Buildings and must be secured before construction can commence. If the design changes after Final approval or if PDC includes "conditions" in their Final approval, the capital project must be submitted for Amended Final review. Final approval by PDC is conditioned on construction commencing within two years.

/iv. Final Review of Early Works:

To accommodate early works, the Consultant may seek separate Final reviews for that work before submitting the overall project for Final review. If applicable, Final review for certain early works may be sought at the same time as Preliminary review of the overall project.

/v. Preliminary + Final Review (Community Board review may be required)

Combined Preliminary + Final review is recommended to occur at 75% Construction Documents upon final development of the project exterior, including exterior detailing. It is required for projects that are not subject to separate Preliminary and Final review and generally for projects with limited exterior scope, such as single or multi-system upgrade projects. For limited exterior scope projects, Preliminary + Final approval is required to obtain a building permit from the Department of Buildings and must be secured before construction can commence. If the design changes after Preliminary + Final approval or if PDC includes "conditions" in their Preliminary + Final approval, the capital project must be submitted for Amended Preliminary + Final review. Preliminary + Final approval by PDC is conditioned on construction commencing within two years.

/vi. Final Signoff Review

Final Signoff review occurs when the construction of a project is complete. It is required to demonstrate to PDC that the project was built as approved. Final Signoff is required to close out a building permit and obtain a Certificate of Occupancy from the Department of Buildings.

/vii. Additional Reviews

Additional reviews may be required, including Pre-Conceptual review (or Informal review), Amended Preliminary review, Amended Final review, Amended Preliminary + Final review, and/or Extension of Approval.

1. Pre-Conceptual Review (or Informal Review) is available for complex and highpriority projects with expedited timelines, including emergency declaration projects and alternative delivery projects. Pre-conceptual review occurs during a preschematic or master plan phase, or during the early stages of schematic design. The Pre-Conceptual review does not take the place of the required design reviews but, for 5 time-sensitive projects, can aid in obtaining early feedback from PDC to support design decision-making.

2. Amended Preliminary Review occurs after Preliminary approval and before Final review if the Preliminary approval includes "conditions" or if the design changes substantially after Preliminary approval..

3. Amended Final Review occurs after Final approval if the Final approval includes "conditions" or if the design changes substantially after Final approval. Amended Final review can occur late in the design phase or during the construction phase

4. Amended Preliminary + Final Review occurs after Preliminary + Final approval if the Preliminary + Final approval includes "conditions" or if the design changes substantially after Preliminary + Final approval. Amended Preliminary + Final review can occur late in the design phase or during the construction phase.

5. Extension of Approval occurs when the Final or Preliminary + Final approval expires prior to the start of construction.

/viii. Waivers

Waivers are available for projects where the exterior work is strictly limited to repair or replacement-in-kind, with replacement components having the same specifications, size and finish as existing components. Replacement of exterior mechanical equipment does not typically qualify for a waiver. For projects eligible for a waiver, the waiver request is submitted directly through DOB NOW, after filing a job.

/c Artworks Reviews (For Design Consultant reference only, to be coordinated by Artist)
For artwork, the number and level of PDC reviews required depend on whether the artwork is an installation of new artwork through the Percent for Art program, or conservation, relocation, or removal of existing artwork. Installation of new artwork through Percent for Art Program (see Section 1000.05 PERCENT FOR ART) requires three levels of review – Conceptual, Preliminary, and Final. Conservation, relocation, or removal of existing City-owned artwork requires two levels of review – Preliminary and Final. In addition, conservation, relocation, or removal of existing artwork requires review by PDC's Conservation Advisory Group (CAG), a team of conservators and art historians who advise PDC.

Additional reviews may be required including, Pre-Conceptual, Amended Conceptual, Amended Preliminary, and/or Extension of Approval.

For new artwork, the Department of Cultural Affairs' Percent for art Program will organize the artist selection process as described in Section (see Section 1000.05 PERCENT FOR ART). The PDC serves in an advisory role during the selection process.

PDC Reviews Required for Artwork Type and Phase	**DESIGN PHASE**		**CONSTRUCTION PHASE**
	Early Design	**Final Design**	**Post Installation**
New Artwork (%)	Conceptual	Preliminary	Final
Artwork Conservation	n/a	Preliminary	Final
Artwork Relocation	n/a	Preliminary	Final
Artwork Removal	n/a	Preliminary	Final

/i. Conceptual Review (Community Board review required)

Conceptual review is recommended to occur early in the design process for new artwork, upon development of a conceptual design, and after Community Board review. Upon receiving Conceptual approval, if the design changes substantially or if PDC includes "conditions" in their Conceptual approval, the artwork must be submitted for Amended Conceptual review prior to proceeding to Preliminary review.

For complex conservation, relocation, or removal of existing artworks, or when additional guidance is needed, projects may be submitted for Conceptual review before requests for proposals (RFPs) are finalized and/or before a conservation team has been engaged.

/ii. Preliminary Review

For new artwork, Preliminary review is recommended to occur when the design has been fully developed and prior to fabrication. It is required for all artworks that were reviewed at a conceptual level, and for conservation, relocation or removal of existing artwork. Upon receiving Preliminary approval, if the design changes substantially or if PDC includes "conditions" in their Preliminary approval, the artwork must be submitted for Amended Preliminary review prior to proceeding to Final review. For new artwork, prior to receiving Preliminary approval, the artwork can move forward toward being fabricated and installed

/iii. Final Review

Final review occurs after installation, conservation, relocation, or removal of the artwork is complete. It is required to demonstrate to PDC that the project was built as approved.

/iv. Additional Reviews

Additional reviews may be required, including Pre-Conceptual review (or Informal review), Amended Preliminary review, and/or Extension of Approval.

1. Pre-Conceptual Review (or Informal Review) is available for complex and highpriority projects with expedited timelines, including emergency declaration projects and alternative delivery projects. Pre-conceptual review occurs during a preschematic or master plan phase, or during the early stages of design. The Pre- Conceptual review does not take the place of the required design reviews but, for time-sensitive projects, can aid in obtaining early feedback from PDC to support design decision-making.
2. Amended Preliminary Review occurs after Preliminary approval and before Final review if the Preliminary approval includes "conditions" or if the design changes substantially after Preliminary approval.
3. Extension of Approval occurs when the Preliminary approval expires prior to the start of fabrication or installation. Preliminary approval by PDC is conditioned on construction fabrication commencing within two years.

/d Capital Projects and Artwork Review Coordination

While capital projects and artworks located on the same site are subject to separate and distinct PDC reviews, the capital project and artwork submissions should be coordinated and submitted in tandem, whenever possible, as shown in the table below. If necessary to avoid any impacts to the project schedule, the capital project and artwork may be submitted separately.

Coordination of Capital Project and Artwork Reviews	**DESIGN PHASE**			**CONSTRUCTION PHASE**
	75% SD (SD Interim II, Technical Proposal)	**100%** (SD Final, SD)	**75% CD**	**Construction Completion**
Capital Project	Conceptual	Preliminary	Final	Final Signoff
Artwork	n/a	Conceptual	Preliminary	Final
Artwork Conservation	n/a	n/a	Preliminary	Final
Artwork Relocation	n/a	n/a	Preliminary	Final
Artwork Removal	n/a	n/a	Preliminary	Final

/e PDC Review Documentation

PDC review documentation indicates the results of and is typically issued at two points during their 4-week submission review. Mid-Cycle documentation is typically issued during the second week for submissions that fall under delegation or are Final Signoff submissions. End-of-Cycle documentation is typically issued during the fourth week for submissions that appear on the PDC Monthly Meeting Agenda.

Review documentation issued by PDC indicates 1) the outcome of the review, 2) items requiring further study, investigation, or clarification, if applicable, and 3) guidance on next level of review or next steps. The type of review documentation issued depends on the level of review and the outcome

of the review and can be either a Status Report or a Certificate. In addition, over the course of the PDC submission review, PDC may send inquiries via email that will require a response.

The DDC PDC Liaison is available to assist the Consultant in deciphering the information communicated on the review documentation or emails, and to guide the development of appropriate responses to inquiries received.

PDC Review Documentation		
	Mid-Cycle	**End-of-Cycle**
Certificate	Issued for projects that fall under delegation	Issued for projects listed on PDC's Monthly Meeting Agenda under "Public Meeting - Consent Items" or "Public Meeting - Public Hearing"
Status Report	Issued for projects submitted for Final Signoff	Issued for projects listed on PDC's Monthly Meeting Agenda under "Committee Meeting"
Email	Issued for projects where additional information or clarification is required	

Notes:
- Certificates serve as formal documentation of PDC approval
- Certificates may include "conditions" (a list of items requiring further study, investigation, or clarification) that must be addressed in subsequent submission
- Certificates expire within two years of the issue date
- Certificates for capital projects indicating Final approval state that construction must commence within two-years of the certificate date, and that photographs be submitted for Final Signoff review upon completion of the work
- Status Reports (Interagency Communications) do not indicate formal approval but provide guidance on next steps and may also include a list of items requiring further study, investigation, or clarification

/f Interagency Coordination Requirements (Sponsor, DOB, SCP, DOT, LPC)

Before a capital project or artwork can be submitted to PDC for review, all required NYCCB, LPC, DOT and interagency coordination must have occurred, and any design-related concerns must be resolved. Prior to DOB, DCP and DOT regulatory approvals, PDC review and approval and Review Documentation must be provided.

/i. Sponsor Agencies

Prior to submitting a project to PDC for review, a preferred Schematic Design option must be reviewed and approved by all stakeholders, including DDC's Capital Program Delivery and A+E Units, the Sponsor Agency, and any other agencies with jurisdiction over the project or site. Sponsor Agencies may require in-house and Commissioner-level reviews before submission to PDC. NYC Parks, the Department of Transportation, the Department of Environmental Protection, and the Department of Cultural Affairs all require interagency coordination on all PDC submissions. The Consultant is required to identify and facilitate all required stakeholder reviews.

/ii. Department of Buildings (DOB)

For any project that falls under PDC design review jurisdiction and requires a building permit from the Department of Buildings (DOB), Final (or Preliminary + Final) review and approval by PDC is required to obtain a building permit from DOB. In addition, Final Signoff review and approval by PDC is required to close out a building permit and obtain a Certificate of

Occupancy from DOB. For projects eligible for a waiver, the waiver request is submitted directly through DOB NOW, after filing a job. For more information on the DOB requirements see Section 1000.06/C.

/iii. Department of City Planning (DCP)

For any project that falls under PDC design review jurisdiction and is subject to the Uniform Land Use Review Procedure (ULURP), Conceptual review and approval by PDC is required prior to ULURP certification. The Conceptual submission to PDC should be made at or around the same time as the Department of City Planning (DCP) interdivisional meeting.

/iv. Department of Transportation (DOT) Revocable Consent

For any project that falls under PDC design review jurisdiction and is subject to Department of Transportation (DOT) Revocable Consent, coordination and approval of the Revocable Consent by DOT must be achieved prior to submitting the project to PDC for review.

/v. Landmarks Preservation Commission (LPC)

For any capital project that is an individual landmark or is located within an historic district, design review jurisdiction is held by the Landmarks Preservation Commission (LPC) and will not require PDC review. However, for any artwork that is installed within an individual landmark or historic district, design review jurisdiction is held by PDC, with LPC serving in an advisory role.

For any new construction, including landscape and excluding additions/alterations, within a scenic landmark, design review jurisdiction is held by PDC, with LPC serving in an advisory role.

The PDC and LPC Design Review Jurisdiction by Project Type is outlined in the table below.

In cases where PDC review is binding and LPC review is advisory, a written Advisory Report from LPC must accompany the submission to PDC. For additional information on Landmarks Preservation Commission, please refer to Section 1000.06/E Landmarks Preservation Commission.

PDC and LPC Design Review Jurisdiction by Project Type			
	Individual Landmark	**Historic District**	**Scenic Landmark**
New Construction	LPC Binding	LPC Binding	LPC Advisory PDC Binding
Addition/Alteration	LPC Binding	LPC Binding	LPC Binding
Landscape	LPC Binding	LPC Binding	LPC Advisory PDC Binding
New Artwork (%)	LPC Advisory PDC Binding	LPC Advisory PDC Binding	LPC Advisory PDC Binding
Artwork Conservation	LPC Advisory PDC Binding	LPC Advisory PDC Binding	LPC Advisory PDC Binding
Prototypes	n/a	LPC Advisory PDC Binding	LPC Advisory PDC Binding

/g Community Board Coordination

Before a Capital Project can be submitted to Community Board for review al required interagency coordination must have occurred, and any design-related concerns must be resolved.

Prior to submitting a capital project to PDC for Preliminary or Preliminary + Final review or an artwork for Conceptual review, the project must be reviewed by Community Board and the Community Board resolution, or written confirmation of Community Board review is required to be provided along with the submission package.

For projects with limited exterior scope, such as single or multi-system upgrade projects, an email notification sent to the Community Board from the DDC Office of Community Outreach and Notification (OCON) may be provided in lieu of a Community Board resolution.

For complex and high-priority projects, community engagement beyond the typical Community Board coordination may be required.

All Community Board communications are coordinated through the DDC OCON. For additional information related to Community Board Coordination, please refer to Section 1000.06/C New York City Community Board.

III. PDC Project Requirements

/a Planning

Proper planning for PDC reviews is essential to ensuring an efficient process that does not impact the project schedule. The Consultant is required to incorporate all anticipated PDC reviews in the project schedule, accounting for DDC and Sponsor Agency reviews, Community Board reviews, DDC's pre-submission reviews, and PDC's submission reviews.

For all capital projects and Artworks, PDC Submissions are intended to synchronize with the DDC's design phase submissions (See Section 3000.02/A) and deliverables (see Section Z.) The PDC Liaison is available to provide guidance on the number and levels of PDC reviews required for any given Capital Project and to confirm that the anticipated PDC reviews are properly coordinated with the project schedule and phase of development. Upon design phase kickoff, the Consultant is encouraged to schedule a Workshop with the DDC PM/PDC Liaison to review PDC requirements. For a full list of Design Phase Workshops see Section 3000.02/A.

For alternative delivery or priority projects, including those that fall under Design-Build, CM Build, and/or are declared "Emergency", the Consultant is required to coordinate a strategy for PDC reviews with the DDC PDC Liaison early in the design phase. All required PDC reviews of "early works" packages must be coordinated with PDC review of the overall project.

Capital projects and artworks located on the same site are subject to separate and distinct PDC reviews that must be coordinated. Although the Consultant is not responsible for Artwork submissions to PDC, the Consultant is responsible to provide supporting materials to the Artist as necessary. For additional information related to Capital Project and Artwork Review Coordination, please refer to Section 1000.06/D II/d.

/b Submission and Review Process

The PDC submission and review process takes approximately six weeks, from providing a complete draft submission package to receiving an approval from PDC or guidance on resubmitting with revisions. Capital projects and artworks requiring PDC review must be submitted to PDC once per month, according to the deadlines published on the PDC calendar.

The process, including DDC's pre-submission review and PDC's submission review, is outlined in the table below. For additional information or guidance on submitting capital projects or artworks for PDC review, please reach out to the DDC PDC Liaison.

DDC Pre-Submission Review (2 Weeks)	
DDC Pre-Submission Deadline	**DDC Pre-Submission Deadline** ▪ Two weeks prior to the PDC Digital Submission deadline, the Consultant is required to submit a complete draft submission package, including all applicable items on the PDC Checklist, to the DDC PDC Liaison for presubmission review. (typically, Friday) o The design represented in the submission must have been approved by DDC, the Sponsor Agency, and other agency stakeholders identified for the project. o For large or complex projects that require approval by multiple agencies, the Pre-Submission Review may require additional time. ▪ See PDC Calendar for DDC pre-submission and PDC submission deadlines ▪ See PDC Checklist ▪ See PDC Submission Package Items and Requirements
Week 1: DDC Pre-Submission Review	**DDC Pre-Submission Review** ▪ During the first week of DDC pre-submission review, the DDC PDC Liaison reviews the package for completeness and clarity of the submission package, conformance with PDC requirements and guidelines, alignment with city-wide standards and best practices, and for appropriateness of the design. ▪ Upon initial review, the DDC PDC Liaison provides a list of revisions along with a due date, and guidance on next steps to Consultant. o Multiple draft revisions may be required within the two-week Pre-Submission review and prior to submitting to PDC.
Week 2: DDC Pre-Submission Review+ PDC Digital Submission Deadline	**DDC Pre-Submission Review** ▪ The Consultant is required to update and submit a revised submission package in response to the DDC PDC Liaison's list of revisions as directed by the DDC PDC Liaison. ▪ Upon receipt of the revised submission package, the DDC PDC Liaison reviews the package, and, if acceptable, prepares the package for submission to PDC. **PDC Digital Submission Deadline** ▪ The DDC PDC Liaison transmits the digital (PDF) submission to PDC. (Friday, typically) ▪ The Consultant submits models and material samples directly to PDC (see PDC Delivery Instructions below) following guidance from the DDC PDC Liaison. ▪ Once the submission package is transmitted to PDC, the Consultant should expect to receive inquiries that may require expedited responses, clarifications, and/or revised documents. The DDC PDC Liaison serves as the point of contact with PDC and communicates any feedback received by PDC to the Consultant.

PDC Submission Review (4 Weeks)	
Week 1: PDC Staff Review	**PDC Staff Review** ▪ During the first week of PDC Submission review, PDC Staff familiarizes themselves with the design proposal and, if required, requests additional information, clarifications, and/or revisions needed to continue their review. ▪ Through the DDC PDC Liaison, the Consultant receives and responds to requests from PDC Staff.
Week 2: PDC Commissioner Review+ Mid-Cycle Documentation	**PDC Commissioner Review** ▪ During the second week of PDC Submission review, PDC Staff reviews the design proposal with Commissioners and, if required, requests additional information or clarifications needed to continue their review. ▪ Through the DDC PDC Liaison, the Consultant receives and responds to requests from PDC Staff. ▪ Under special circumstances, PDC may schedule a workshop to discuss the project and specific details about the design proposal. **Mid-Cycle Documentation** ▪ PDC Staff issues Staff-Level Review Documentation for projects that fall under delegation. Documentation may include Certificates indicating approval or Status Reports indicating approval or resubmission. ▪ The DDC PDC Liaison distributes the documentation, provides the hard copy submission instructions, and any additional guidance on next steps to the Consultant.
Week 3: PDC Monthly Meeting Agenda+ Meeting Coordination	**PDC Monthly Meeting Agenda** ▪ PDC Staff finalizes and publishes the PDC Monthly Meeting Agenda three business days prior to the meeting (by Tuesday, typically) and coordinates meeting requirements, as necessary, with DDC PDC Liaison. ▪ The DDC PDC Liaison distributes the PDC Monthly Meeting Agenda, provides the hard copy submission requirements, and any additional guidance on next steps to the Consultant. o The PDC Monthly Meeting Agenda includes links to presentations for projects that are scheduled to be presented. **Meeting Coordination** ▪ The DDC PDC Liaison will indicate whether attendance is required and will coordinate the list of attendees and presenters with the Consultant. ▪ The PDC Monthly Meeting Agenda includes three sections: o Public Meeting – Consent Items o Public Meeting – Public Hearing o Committee Meeting ▪ For projects listed under “Public Meeting – Consent Items”, attendance at the meeting is not required. ▪ For projects listed under “Public Meeting – Public Hearing” or “Committee Meeting”, attendance at the meeting is required and the design proposal is presented to the Commission by the Consultant with DDC and the Sponsor Agency in attendance. If the meeting is a Public Hearing, members of the public can sign up to testify. ▪ If a project was not eligible for Mid-Cycle approval, and is not listed on the PDC Monthly Meeting Agenda, the project may be required to be revised and resubmitted.

PDC Submission Review (4 Weeks) (Continue)	
Week 4: PDC Monthly Meeting, Hard Copy Submission Deadline + End-of-Cycle Documentation	**PDC Monthly Meeting** ▪ PDC holds in-person meetings at the Public Design Commission Board Room on the 3rd floor of City Hall. (Monday, typically) Presenters and attendees must arrive to the meeting 45-minutes in advance of their scheduled presentation. In addition, PDC Monthly Meetings may be attended via Zoom or viewed on YouTube. ▪ PDC will have the submitted presentation displayed on a screen, and samples and models will be laid out on the board room table. **Hard Copy Submission** ▪ Following the PDC Monthly Meeting, the Consultant delivers the submission package to PDC for archival purposes. (by Thursday, typically) See PDC Delivery Instructions below. **End-of-Cycle Documentation** ▪ Before the end of the fourth week, for the projects included on the PDC Monthly Meeting Agenda, PDC Staff issues formal documentation communicating the results of their review. Documentation may include Certificates indicating approval or Status Reports indicating approval or resubmission. ▪ The DDC PDC Liaison distributes the documentation and provides any additional guidance on next steps to the Consultant.

/c Submission Package Items

Each level of PDC review for any given capital project or artwork has specific submission package items or requirements, many of which are detailed on PDC's checklists specific to the type and level of review. Typical PDC Submission Package Items for Capital Projects and Artworks are outlined in the table below and must be provided to the PDC Liaison on the scheduled due date outlined in the process above.

Except for the Application and Community Board Documentation, all items are the responsibility of the Consultant. For any capital projects or artworks requiring PDC review, the DDC PDC Liaison provides the relevant checklist and confirms the submission package items and requirements. For submissions that do not have a designated checklist, the DDC PDC Liaison identifies the submission package items and requirements. The Consultant (or Artist) is responsible for providing all submission package items at the appropriate deadline to the DDC PDC Liaison. The Consultant (or Artist) is encouraged to reach out to the DDC PDC Liaison to obtain the appropriate checklist and submission package requirements.For Pre-Conceptual, Amended Preliminary, Amended Final, Amended Preliminary + Final, or Extension of Approval submission items and requirements, please reach out to the DDC PM/PDC Liaison for guidance.

KEY:

- • First submittal of applicable documents.
- **o** If not submitted previously
- **X** Encouraged but not mandatory

Submission Package Items For description of submission deliverables listed below see Section Z of the guide	**CAPITAL PROJECTS**			
	Conceptual	Preliminary	Final/Preliminary + Final	Final Signoff
Z.03/D PDC SUBMISSION DOCUMENTS				
PDC Checklist	•	•	•	
Application Information	•	•	•	
Statement of Project Scope	•	o	o	
List of Changes of Deviations		•	•	•
Response to PDC Comments		•	•	
NYCCB & Interagency Advisories/Approvals		•	o	
Material LIst & Cut Sheets		•	•	
Z.04/A DESIGN PRESENTATION	•	•	•	
Z.04/D MATERIALS		•	•	
Z.04/B MODELS	**X**	**X**	**X**	
Z.04/E PHOTOGRAPHS				•
Z.06/E TECHNICAL DRAWINGS	•	•	•	

/d PDC Submission Delivery Instructions

PDC Requires submission of digital files (PDF), materials, models and hard copies. See Section Z as noted above. All material samples, models and hard copies must be delivered directly to PDC's offices (located on the 3rd Floor of City Hall) by the Consultant . Following PDC's review, all material samples and models must be picked up by the Consultant. Delivery and pick up of material samples and models must be coordinated in advance with PDC Staff through the DDC PM/PDC Liaison.

PDC Delivery Instructions	
Via USPS, FedEx, USPS	**Hand Delivered**
Clearly labeled with project name and addressed to: Public Design Commission City Hall, 3rd Floor New York, NY 10007	Clearly labeled with project name and addressed to: Public Design Commission City Hall, 3rd Floor New York, NY 10007 **Drop off at:** **1 Centre Street, Mail Room #1,** **Closes at 4:00 pm, Monday-Friday**

06/E LANDMARKS PRESERVATION COMMISSION (LPC)

I. LPC Overview

The Landmarks Preservation Commission (LPC) is the mayoral agency responsible for designating and protecting New York City's architecturally, historically, and culturally significant buildings and sites. Since its creation in 1965 by the Landmarks Law, Section 3020 of the New York City Charter, and Chapter 3 of Title 25 of the Administrative Code, LPC has granted landmark status to more than 38,000 buildings, including 1,463 individual landmarks, 123 interior landmarks, 12 scenic landmarks, and 157 historic districts in all five boroughs. The agency consists of eleven commissioners comprised of at least three architects, a historian, a realtor, and a planner or landscape architect, as well as at least one commissioner from each borough. The paid chair leads the agency and a staff headed by the executive director.

The objective of designating landmark properties is to "safeguard the city's historic, aesthetic, and cultural heritage" and to "foster civic pride in the beauty and accomplishments of the past." Protection of designated properties is achieved through mandatory review and approval of plans for restoration, alteration, addition, reconstruction or other proposed changes.

II. LPC Jurisdiction

The LPC has jurisdiction over all properties that are either designated or pending designation as NYC landmarks. The four types of landmark designation are individual (exterior), interior, scenic, and historic districts. In addition, projects undergoing City Environmental Quality Review (CEQR) fall under LPC jurisdiction. Properties reviewed under CEQR or other environmental laws might be listed on or eligible for the New York State or National Registers of Historic Places or meet criteria for local designation, even if they are not New York City designated landmarks. CEQR review covers historic, aesthetic, cultural, archaeological, and architectural resources. Note, for works of art located on a landmark site LPC will issue an Advisory Report to the PDC. See PDC Regulation in Section 1000.06/D above for areas of overlap between PDC and LPC.

III. LPC Project Requirements

There is usually only one formal application to the Landmarks Preservation Commission for a given project; however, there are instances where two or more separate submissions are required to satisfy the application. The first submission accompanies the application form for the proposed work as soon as a clear design direction has **x** been determined. At this point a Landmarks Preservation Commission staff member will be assigned to the project, and the likely level of action, either staff review or public hearing, will be established. The application and initial submission should be made as early in the design phase as

is reasonably possible to avoid possible schedule impacts. All LPC permit applications are now filed and processed through Portico, the agency's new web-based permit application portal.

The second required submission is for the final approval, which will be issued in the form of a permit or report. This submission includes final construction documents including specifications. For some simple and straight-forward projects, a single submission near the end of design will be sufficient. When a submission for final approval has been deemed complete by LPC staff, the Commission has 45 business days to issue a report.

For more complex projects, such as those involving a Pre-Schematic Phase or extensive alterations to a landmark, it is useful to have a pre-submission meeting with the LPC staff to discuss project scope and possible alternative design strategies. It is also useful to discuss the scope of work and get advice on appropriate presentation materials. Initial contact could be by telephone or by a meeting, depending on the nature of the project. DDC's HPO will guide the Project Team on the appropriate timing for interactions with LPC based on the nature of the project and will review the prepared materials prior to the meeting with LPC.

/a Submittal Requirements for Initial Application

Please see the Permit Application Guide on the LPC website http://NYC.gov/landmarks for the latest submission requirements for various types of work. These may specify materials in addition to the general illustrative materials described below. All submission materials must be approved by DDC prior to submitting to the LPC. Two sets are required for the LPC and two sets for DDC.

1. Application Form

   The application form will be prepared by the HPO staff, with the Chief of Historic Preservation entered as "Person Filing Application," and the Associate Commissioner of A&E signing as "Owner."

2. Landmark Presentation Illustrative Materials

   Materials illustrating the proposed design shall include a full and complete set of drawings, renderings, photographs, and photo-montages that clearly and completely describe all the proposed work that affects the protected features, interior or exterior, of the landmark structure or site. Materials will typically show, side by side, historic, existing, and proposed conditions. These typically include all relevant floor plans, building sections, exterior elevations, interior elevations if applicable, details, and building and site context.

3. Samples

   One set of material and color samples with supporting product literature and identification specifications is required.

4. Research

   Relevant research, test reports, and documentation shall be submitted with the application.

5. Presentations to the Landmarks Preservation Commission Staff

   Accompanied by DDC staff and the Sponsor Agency representative, the Consultant is required to make presentations to the LPC staff.

6. Mock-Up Requirements

   For all rooftop additions and/or mechanical equipment installations, the Consultant will be required to provide all necessary information for the construction of a wood or light steel frame mock-up matching the overall size and configuration of the proposed addition/ equipment. Photographs of the completed mock-up shall be part of the LPC submission package. In certain cases, the mock-up may be required to remain in place for a period of

time to allow Commission members and/or members of the public/community board an opportunity to visit the site. Costs for the construction of the mock-up shall be identified as a reimbursable expense or part of the construction budget, depending on the direction of the DDC project manager.

/b Submittal and Procedures Requirements for A Public Hearing

Projects requiring public hearing review can be scheduled about five weeks after the Commission receives a substantially complete application. Hearings are held on at least two Tuesdays per month, generally during normal business hours. The scheduled time for each item on the day's calendar is posted on the LPC web site at the end of the week before the hearing.

If a public hearing is required for LPC review, the Consultant must first present the proposed project to the appropriate committee of the local community board prior to the hearing. The Sponsor Agency, in conjunction with DDC's Office of Community Outreach and Notification will take the lead in scheduling this with the assistance of DDC and the Consultant. Usually one presentation to the CB committee is sufficient. However, depending on the nature of the proposed project, the Consultant may be required to present to the full Community board as well. LPC requires that the community board have the opportunity to review the project and submit a written resolution by the time of the scheduled Landmarks public hearing.

It is at this stage that the Consultant must include OCON for input regarding the presentation that the Consultant plans on showing to the Community Board. OCON may require some revisions be made and provide the Consultant with contacts and guidance on engaging the Community Board. Once the presentation has been executed, the Consultant will ask the Community Board to provide a "resolution" letter which is then included as part of the submission to LPC.

Please note that most of the 59 Community Board's Committees meet only once per month and do not meet at all in July and August.

Illustrative materials for the public hearing are as described in section (4) above. In addition, the Consultant must provide 12 sets of 11 by 17-inch, color copies of the presentation for distribution to the LPC commissioners. Digital presentations in final form can be submitted by PDF or thumb-drive about one week prior to the hearing. Presentation boards are also acceptable.

At the close of the public hearing, the Commission will vote on the project, request revisions or additional information, or defer action. A vote, which requires a majority of the 11 commissioners, may be to approve, approve with specified modifications, approve with revisions to be worked out with staff, or deny. A vote (other than a denial) will result in issuance of a Status Update Letter describing the action taken. This letter will indicate that a permit (or report) will be issued upon review of final contract documents that conform to the Commission's approval.

/c Submittal Requirements for Final Approval

Final Construction Documents shall include:

1. Two sets of signed and sealed drawings and one set of specifications each for LPC and DDC.
2. One set of material and color samples as well as related product literature and specifications.

/d Changes During Construction

If there are changes to the design during construction that deviate from the approved LPC drawings, the Consultant shall prepare for submission to LPC all necessary drawings and documentation illustrating the changes, with a letter requesting an amendment prepared by the HPO staff.

/e Notice Of Compliance From LPC
At the end of the construction phase, LPC will issue a Notice of Compliance if so requested. The LPC Notice of Compliance is a requirement by the Department of Buildings before its final sign-off. The Consultant shall submit to DDC final photographs with key of all work that affected any of the protected features of the landmark structure or site. DDC will forward these photographs to LPC with a request for issuance of a Notice of Compliance. The Consultant shall also submit to DDC and LPC as-built drawings for any portions of the work that deviate from the LPC-approved drawings. After determining that all the work was completed in accordance with the approved plans and specifications as well as any amendments to the approval, LPC will issue the Notice of Compliance.

06/F ADDITIONAL REGULATORY BODIES

Depending on circumstances, approval may also be required from other agencies. The following list is intended as a guide and should not be considered comprehensive.

I. NYC Department of City Planning (DCP) and The City Planning Commission (CPC)

The DCP and the CPC have overall responsibility for zoning variances, special permits, and Uniform Land Use Review Procedure (ULURP). ULURP is required for zoning changes, site selection, acquisition and disposition of City owned property, select concession contracts, select revocable consents, permits, and map changes. Consultant services in support or preparation of ULURP shall be identified in the Agreement.

II. NYC Department of Transportation (DOT)

DOT is responsible for operations relating to streets, bridges, and tunnels, and the issuance of necessary permits. These include review and approval, as necessary, by:

/a Administrative Superintendent of Highway Operations (ASHO)
ASHO may place a hold on a permit when the proposed work location is scheduled for resurfacing by DOT in the near future or was resurfaced within the past 18 months.

ASHO may release the hold if the proposed work can be scheduled or designed in a way that does not interfere with planned or recent work. ASHO may also place a hold when the proposed work location is part of a DDC street reconstruction project, in which case DDC will review the permit and seek to coordinate the proposed work with the reconstruction

/b Bureau of Permit Management and Construction Control (the Bureau)
The Bureau issues permits relating to the maintenance and repair of public roads, streets, highways, parkways, bridges, and tunnels. Permits are required to be taken out by the Contractor for street closings, sidewalk and roadway construction, protective bridges (sidewalk sheds) and other similar construction operations. The Consultant may be required to prepare necessary drawings.

/c Office of Franchises, Concessions, and Revocable Consent (OFCRC)
Approval from the OFCRC of DOT is required for any construction extending beyond the property line, whether above or below street level, that is not exempt by provisions of the NYC Building Code, and underground tunnels, vaults, and utilities. It is required for other work, including the construction of bridges over streets and tunnels or utilities under roadways. Such approval can be withdrawn at any time (revocable consent). Any above ground work, requiring revocable consent will also require the approval of the PDC or LPC.

III. Metropolitan Transit Authority (MTA)

If the proposed construction could infringe upon or adversely affect structures of subsurface, surface, or elevated transit systems, it will be necessary to receive the approval of the MTA prior to receiving approval by the DOB.

IV. Fire Department (FDNY)

The FDNY's Bureau of Fire Prevention enforces all laws and rules pertaining to the prevention of fire.

V. NYC Department of Environmental Protection (DEP)

The NYC DEP enforces all laws and rules pertaining to environmental conditions and hazardous materials and includes:

/a Asbestos Control Program
While DEP oversees asbestos reporting and abatement in the City, DDC has primary responsibility for identifying asbestos containing materials at DDC projects and developing drawings and specifications for their abatement (see Section A-1 of this Appendix, Part A, "Design Process", and Part K, "Hazardous Materials"). In most instances, the Consultant's responsibility is limited to identifying potential areas of asbestos containing material and coordinating other work with abatement work. Asbestos forms may need to be filed with DEP regardless of whether the overall project requires filing with DOB.

/b Bureau of Environmental Planning and Analysis
The Bureau supports the City and State Environmental Quality Review processes (CEQR and SEQR) through which City agencies may be required to assess, disclose, and plan for the mitigation of the environmental consequences of projects (see NYS Department of Environmental Conservation below). Consultant services in support of CEQR/SEQR, including environmental assessment statements (EAS) and environmental impact statements (EIS), shall be identified in the Agreement.

/c Division of Air and Noise Policy, Permitting and Enforcement
This division regulates activities and equipment that emit atmospheric contaminants, including demolition activities that can produce airborne particulate matter, boilers that can produce noxious gases, and construction vehicles that can produce both kinds of contaminants. This division also enforces the NYC Noise Code, Local Law 113. The Consultant is responsible for ensuring that noise-producing elements of the project scope, such as outdoor mechanical equipment, comply with code.

/d Bureau of Water and Sewer Operations (BWSO)
BWSO authorizes the repair or replacement of water and sewer lines, the installation of backflow prevention devices, and the connection of domestic water, sprinkler, sanitary, and stormwater systems to City water and sewer mains. BWSO also provides water pressure tests for connections to new domestic water and sprinkler systems and confirms the availability of sewer service for new sanitary and stormwater systems. If applicable to a project, BWSO approvals are required to obtain DOB approvals.

/e Bureau of Wastewater Treatment (BWT)
Construction activities such as excavations and well drilling that will discharge more than 10,000 gallons per day of ground water into the public sewers must obtain a Dewatering Permit from BWT. Projects involving well point de-watering in Brooklyn and Queens must also contact the NYS Department of Environmental Conservation (see below).

/f NYC Water Board
The Board manages DEP's Comprehensive Water Reuse Program, which offers a rate reduction for buildings that capture and use stormwater.

VI. NYC Department of Parks and Recreation (NYC Parks)

NYC Parks approves projects within parks or designated parkland, as well as removal or planting of street trees. Street tree plantings may be required for new construction or significant renovation projects as required by DCP regulations. Street tree planting approval is required prior to DOB or DOT approval. Street tree plantings must be inspected and accepted by NYC Parks Forestry division to obtain DOB final sign-off or Certificate of Occupancy.

VII. NYC Department of Health and Mental Hygiene (DOHMH)

The DOHMH approves the operations of food service establishments and swimming pool facilities. DOHMH regulations also pertain to other types of facilities including day care centers and animal care facilities.

VIII. NYC Department of Sanita;tion (DSNY)

The DSNY approves refuse disposal methods, including disposal of special refuse.

IX. Environmental Control Board (ECB)

The ECB is the division of the Office of Administrative Trials and Hearings (OATH) that hears cases on violations of City laws that protect the public's health, safety, and environment issued by agencies including, but not limited to, the DOB, DOT, FDNY, DEP, and NYC Parks.

X. Utility Companies and NYS Energy Research and Development Authority (NYSERDA)

Utility companies review and approve applications for electric, gas, and steam connections. Consultants are also expected to be aware of and help Sponsor Agencies apply for energy conservation incentive programs by NYSERDA and individual utility companies.

XI. Mayor's Office of Climate & Environmental Justice

This office administers, coordinates, and reports on capital project performance on resiliency (Climate Resiliency Design Guidelines) and reduced embodied carbon (NYC EO23 Whole Project Life Cycle Assessment Guidance).

XII. Mayor's Office of Environmental Coordination (MOEC)

This office coordinates the City Environmental Quality Review (CEQR) process. DDC projects that have potential for significant effects on the environment, including historic resources, are subject to CEQR. During the process these potential effects are identified and disclosed, and options for avoiding or mitigating the effects are proposed. See the CEQR Technical Manual (https://www1.nyc.gov/site/oec/environmental-quality-review/technical-manual.page). CEQR requirements and procedures are equivalent to those for the New York State Environmental Quality Review (SEQR) (see section 13, below). OER has an electronic filing process for applications at the following website: https://a002-epic.nyc.gov/app/search/advanced.

This office also administers, coordinates, and reports on capital project performance on resiliency (Climate Resiliency Design Guidelines), energy use (Local Law 51/2023 Low Energy Intensity Buildings) and reduced embodied carbon (NYC EO23 Whole Project Life Cycle Assessment Guidance).

XIII. NYC Small Business Services

The NYC Department of Small Business Services (SBS) is tasked with issuing permits for all construction related to improvement or maintenance on Waterfront Properties under SBS Jurisdiction. SBS has permitting jurisdiction for construction work on all City-owned waterfront property.

XIV. NYC Board of Standards and Appeals (BSA)

The New York City Board of Standards and Appeals (BSA) is an independent Board created to decide requests and resolve disputes about zoning and land use issues. BSA reviews properties uniquely restricted by zoning and land use rules and interprets decisions of certain land use enforcement agencies, including the Department of Buildings (DOB) and the Fire Department "FDNY). The BSA reviews and approves zoning variances and special permits, appeals for DOB and FDNY decisions and determines variances for NYCBC Appendix G.

XV. New York State Agencies

/a Department of Environmental Conservation (DEC)

DEC administers and enforces the State's Environmental Conservation Law (ECL). Consultants for DDC projects will work primarily with DEC's office for Region 2, which covers New York City, and with the Division of Environmental Permits, which conducts environmental assessments and reviews projects that require DEC permits. Permit applications are processed according to the ECL's Uniform Procedures Act. The most common DEC reviews, permits, and authorizations required for DDC projects include:

/b State Environmental Quality Review (SEQR)

DDC projects that receive State funding, require a DEC permit, or require discretionary action such as a variance by a State agency, must proceed through SEQR. Under SEQR, an Environmental Assessment Statement (EAS) must be prepared to identify potential environmental impacts; if such impacts are anticipated, an environmental impact statement (EIS) must be prepared to describe how they will be mitigated.

Under SEQR, projects may be designated as follows:

1. Type I Action: Projects that meet or exceed statewide or agency thresholds, typically – but not always – requiring the preparation of an EIS.
2. Type II Action: Projects that do not require further SEQR review.
3. Unlisted Action: Projects that do not meet Type I thresholds but may still require an EIS.

/c State Pollutant Discharge Elimination System (SPDES)

This permit is required for construction activities involving soil disturbance where DEC finds a potential threat to water quality. To obtain approval, projects must prepare a Stormwater Pollution Prevention Plan (SWPPP) that conforms to the NYS Stormwater Management Design Manual. Because the SWPPP for a project in New York City must be approved by DEP (see above), such projects must also conform to the DEP Guidelines for the Design and Construction of Stormwater Management Systems.

The Consultant shall confirm which stormwater system applies to their project and meet the applicable requirements. Projects in MS4 areas and high-level combined sewer areas must

comply with the general NYC MS4 (SPDES Number NY-0287890) from the NYS Department of Environmental Conservation. Five aspects of the permit impact capital construction projects:

1. Site Assessments: The Departments of Transportation, Environmental Protection, Police, Fire, Sanitation, and Parks and Recreation are required to conduct assessments of their properties and create a plan to eliminate or reduce pollutants of concern from entering waterways. Many of these plans will require capital improvements. Therefore, these plans shall be used in the scoping and development of any capital project.
2. Illicit Discharges: All NYC employees are mandatory reporters of illicit discharges. The Consultant shall also report any illicit discharges to the DDC project manager and 311.
3. Green Infrastructure: All projects over $2 million which generate stormwater will need to be assessed for the feasibility of green infrastructure per the process in the MS4 permit.
4. Construction Permits: Projects over 20,000 square feet are required to prepare a Stormwater Pollution Prevention Plan (SWPPP) and obtain a permit from the Department of Environmental Protection. (Formerly, such permits were issued by NYS Department of Environmental Conservation.)
5. Post-construction Permits: For certain projects, post-construction measures are necessary and will require a Post-Construction permit.

/d Coastal Erosion Hazard Area

This permit is required for construction activities on land along coastal waters including the Hudson, Harlem, and East Rivers; the Kill van Kull and Arthur Kill; Long Island Sound; the Atlantic Ocean; and all connecting water bodies, bays, harbors, shallows, and wetlands. To obtain approval, projects must have public benefit, must not cause an increase in erosion or have adverse effects on protective features or natural resources, and must be safe from flood and erosion damage. DEC maintains maps of the State's Coastal Erosion Hazard Areas.

/e Tidal Wetlands and Freshwater Wetlands

This permit is required for construction activities that could impact wetland functions. To obtain approval, projects must not degrade or destroy any wetlands. DEC maintains the State's Fisheries (freshwater wetlands) Maps and Tidal Wetland Inventory. In general, the City's wetlands are concentrated around the south shores of Brooklyn and Queens (see Critical Environmental Areas below), the north shore of Queens, the southeast shore of the Bronx, and the north and west shores of Staten Island, with small tidal and freshwater wetland areas scattered throughout the five boroughs, especially Staten Island and the major parklands of northern Queens.

/f Critical Environmental Areas (CEA)

The shoreline of Jamaica Bay, which includes parts of Brooklyn and Queens, is the only designated CEA in New York City. Projects subject to SEQR that are in or substantially contiguous to this area must specifically evaluate potential impacts to the unique characteristics of the CEA, which may include its benefit or threat to human health; valuable natural, agricultural, cultural, historic, recreational, or educational qualities; or an inherent environmental sensitivity to change.

/g Environmental Remediation

DEC maintains the States' Registry of Inactive Hazardous Waste Disposal Sites and, together with the New York City Mayor's Office of Environmental Remediation (OER), oversees the remediation of State Superfund Sites and brownfields in the City.

/h Office of Parks, Recreation and Historic Preservation (OPRHP)

In addition to administering the seven (7) New York State parks within the City, as well as Hudson River Park, jointly administered with the City through the Hudson River Park Trust, OPRHP

administers the State's Open Space Conservation Plan, which identifies conservation and historic preservation priorities on public and private property in the City and throughout the State.

/i State Historic Preservation Office (SHPO)
This office of OPRHP maintains the National and New York State Registers of Historic Places (see Landmarks Preservation Commission above) and maps of known areas of archeological sensitivity. SHPO acts as the primary reviewer of projects receiving state or federal funding that are found through SEQR (see DEC above) to have potential impacts on Register-listed properties or archeological resources. Projects receiving only City funding are reviewed by LPC.

/j Department of State
Projects located in Coastal Erosion Hazard Areas (see above) must obtain a Coastal Consistency Certification from the Department's Coastal Management Program. The certification will be incorporated into the permit decision of the U.S. Army Corps of Engineers if federal approval is required, or of DEC if no federal approval is required.

XVI. Federal Agencies

/a US Army Corp of Engineers
Required under the Clean Water Act and Rivers and Harbors Act for work in, over, or under U.S. navigable waters, such as piers or docks, discharging material into waters, including wetlands, or any structures or work affecting waters.

/b Environmental Protection Agency (EPA)
Necessary for projects requiring compliance with the National Environmental Policy Act (NEPA). (https://www.epa.gov/nepa/epa-compliance-national-environmental-policy-act)

07 COMMISSIONING

07/A COMMISSIONING OVERVIEW

Commissioning (Cx) is a quality control process for verifying and documenting that projects are designed, constructed, and operated as intended. DDC contracts with third-party Commissioning Agents to perform commissioning verification on all applicable DDC projects (see Section 2000.02/E for Commissioning Agent roles and responsibilities.) The Consultant must ensure that Commissioning requirements are incorporated into the design of the project and design process including, but not limited to clearly documenting Sponsor Agency expectations, developing contract documents which verify these expectations are met, responding to site inspections and testing during the construction phase to make sure that installation conforms to the design. See Section 3000 for Commissioning management and submission requirements during project delivery and Section Z/11 for related Commissioning Deliverables.

07/B COMMISSIONING JURISDICTION

Commissioning is required for NYC Energy Code compliance and for most projects pursuing LEED certification. Commissioning must be in accordance with ASHRAE, ASTM, NIBS, LEED, and NYC Energy Code requirements, as well as the requirements outlined below. A project may include Commissioning of MEP Systems and/or Commissioning of the Building Enclosure, as indicated in the Front-End Planning Report. Systems and included in the list below:

I. Building Systems Commissioning

1. HVAC Systems,
2. Controls Systems,
3. Electrical Systems,
4. Plumbing Systems,
5. Fire Protection Systems,
6. Fire Alarm Systems,
7. Security Systems, and
8. Uninterrupted Power Supply (UPS) Systems.

II. Building Enclosure Commissioning

1. Roof waterproofing, including garden roof systems, all penetrations, and transitions;
2. Skylights and other sloped glazing;
3. Exterior walls, including the air barrier system, water management systems, and thermal insulation;
4. Punched windows, window walls, curtain walls, storefronts, glazed entries, doors, and louvers;
5. Sealants, expansion joints, and control joints;
6. Flashings, including all transitions and end-dams;
7. Terrace, balcony, and deck waterproofing;
8. Below-grade waterproofing, including drainage, waterproofing and damp proofing;
9. Below slab floor barriers;

10. Interface and transition conditions between exterior enclosure components and systems;
11. Smoke controls and fire separation and stopping; and
12. Any other special building enclosure systems, equipment, and controls.

07/C COMMISSIONING PROJECT REQUIREMENTS

The Consultant is obligated to ensure that the Contract Documents incorporate the Commissioning requirements described below, as applicable to the project scope. The Commissioning Agent will participate in milestone design reviews, conduct site inspections and coordinate testing to ensure the project is in compliance with the following design and documentation requirements.

I. Building Systems Commissioning (Cx)

/a Design Concepts

1. Redundancy of the equipment must be considered and explained in the documents and complies with the OPR and BOD.
2. HVAC design should be considered in both part-load and off-peak conditions; systems have adequate ramp-down function and can operate efficiently at less than full load (e.g., VAV, staging).
3. Constant volume HVAC equipment should have features to control humidity at part load, such as hot gas bypass, reheat coils, or VFD compressors.
4. Temperature zoning should appear correct. There should be no conflict between interior and exterior zones. The number of zones should seem appropriate for the building and use.
5. Space humidity requirements must be able to be met by the specified equipment; humidifiers and/or dehumidifiers must be included as needed.
6. Selected equipment and systems should generally be considered reliable and easily maintained; systems should not be unusual or unnecessarily complex.
7. Diversity should be applied to VAV system design, and AHUs are sized accordingly.
8. Minimum flowrates should be able to be maintained through boilers and chillers with VFD pumps, or bypass loops are required.
9. Alternative HVAC system designs that might improve cost, efficiency, reliability, simplicity, zoning, space, maintenance, or other concerns should be considered.

/b Technical Requirements

/i. Equipment Access

1. Equipment has access space for service and maintenance.
2. Equipment has clearance space for tube pulls, removals, and door swings.
3. Equipment location can be safely accessed (e.g., hatches, permanent ladders, stairwells to roof, and clear passageways)
4. Equipment is not blocked by other equipment or utilities.
5. Access doors and panels are shown on drawings with notes.
6. Instruments and controls are accessible.
7. AHU filters can easily be replaced. Panel swings are acceptable.
8. Valves are accessible and visible.

9. Access spaces between AHU coils for cleaning have been provided.
10. Avoid installing equipment above hard ceilings.
11. Avoid installing VAV's or reheat coils above furniture or partitions.
12. Large equipment can be feasibly installed or rigged through doors, roofs, basements, halls, etc. Access allows equipment to be replaced in future.
13. Adequate clearance for electrical panels is provided.
14. Space exists for future additional equipment, if applicable.
15. VFD cabinets and DDC panels are shown on walls or equipment.

/ii. Noise and Vibration

1. Equipment has vibration/spring isolators or inertia bases.
2. Piping near equipment has spring hangers.
3. Connections to rotating equipment have flex connectors.
4. Sound traps are installed in ductwork, if required.
5. Equipment is not installed below or above sound-sensitive areas.
6. Ductwork has acoustical lining.

/iii. Commissionability and Testing, Adjusting, and Balancing (TAB)

1. Isolation valves are provided at all equipment.
2. Pressure gages, thermometers, P/T plugs and flowmeters are available at all equipment for testing.
3. Branch volume dampers in ductwork are provided.
4. Sufficient straight duct sections are included for manual pitot traverses or airflow monitoring stations.
5. Balancing valves are shown at base of main piping risers.
6. Pumps have appropriate balancing accessories. Coils have balancing valves.
7. Airflow diagrams are recommended to aide with air balancing and zoning analysis.
8. Water system flow diagrams are included to show piping circuit design, pump accessories, air control devices, and make-up water connections.
9. The Testing and Balancing specification is adequately detailed and certification requirements are included.

/iv. Ductwork

1. No ductwork is exposed to the weather. All ducts from roof top equipment must immediately enter straight down to interior conditioned space through roof curbs for equipment. Horizontal traversing of ductwork along the roof is not permitted.
2. Duct seal class and pressure class is specified or shown on plans. Duct gages should comply with SMACNA guidelines.
3. There are no excessive duct fittings around air handling units, creating high-static system effects and excessive losses.
4. VAV boxes have uniform inlet connections.

5. Rectangular to round duct transition to VAV has the recommended minimum length for proper flow development.
6. Volume dampers are shown at all diffusers and grilles.
7. Fire dampers are located at appropriate wall/floor penetrations. Access doors are provided at fire dampers.
8. Duct sizes are designed for proper velocity (random check).
9. Duct liner is clearly specified and locations are indicated.

/v. Typical Issues

1. The distance between the cooling tower basin and the condenser pumps allows for adequate Net Positive Suction Head.
2. Drawings show the Engineer has considered the existing structural elements and other components as potential interferences in routing ductwork and piping (e.g., using "high" ducts in shallow ceiling).
3. Roof penetrations for piping and ducts are kept to a minimum, and all go down through equipment curbs. Where required, penetrations are better through vertical walls (such as roof equipment penthouses).
4. Piping and duct penetrations through walls and slabs should be sealed.
5. Relief valves for boilers, chillers, and other equipment are shown along with vent piping.
6. Chemical water treatment equipment is shown for piping systems.
7. Alternate piping methods (e.g., Victaulic, PEX, crimping) are specified or permitted.
8. Specifications are included for pipe pressure testing and cleaning and duct leakage testing.
9. Vents are shown at high points of piping systems or required by notes.
10. Heaters are provided in stairwells, entrances, toilet rooms, and mechanical rooms.
11. Ventilation or cooling has been provided for electrical closets and elevator equipment rooms.
12. If glycol solution is needed for freeze protection, the pumps, coils, and other equipment are rated for glycol.
13. Freeze protection schemes (heat tracing, insulation, pumps, etc.) are indicated.
14. Piping is not installed in electrical rooms or complies with all code clearance requirements.
15. Automatic isolation valves are provided at multiple chillers and boilers. Where possible, isolation valves must be easy to access without the aid of ladders.
16. Return air path and/or ductwork is clearly shown.

/vi. Air Handling Units and Fans

1. AHU Schedule has appropriate and required data: e.g., face velocity, coil heat balance, flowrates, filter efficiencies, and static pressures.
2. Fan motors have 20% safety margin over calculated brake horsepower, to allow for adjustments during TAB and inefficient field duct conditions.
3. Condensate drain traps are detailed and sufficient height is available. Condensate drains should be sloped away from the unit and piped to the nearest drain.

4. Adequate access space is provided between heating and cooling coils for cleaning and temperature sensors.

/vii. VAV boxes

1. Responsibility for providing/mounting/installing VAV controls is clearly stated.
2. Drawing details show a minimum of 3 duct diameters of straight duct upstream of inlet.

/viii. BAS/BMS and Controls

1. Detailed and complete written sequences of operation are provided for all systems, and all equipment has a corresponding sequence of operations.
2. Control points are labeled on flow diagrams/schematics.
3. Sufficient points are available to facilitate performance verification and O&M.
4. The BAS includes adequate trending and reporting features.
5. VAV duct static pressure sensor locations are shown.
6. Chilled and hot water loop differential pressure sensor locations are indicated, and isolation valves and pressure gages are provided at transmitters.
7. Room thermostats and space humidity sensors are shown.
8. Flowmeters and air monitoring stations have proper downstream dimensions.
9. A BACnet or Lonworks generic DDC interface has been specified for equipment (e.g., chillers, boilers, RTUs) and vendor responsibilities are clearly noted. Specified BAS protocol is compatible with equipment controller protocols.
10. A BAS point list is included. Control or monitoring points to be available to BAS from other equipment's control panels (e.g., chiller) is provided.
11. Sequences of Operation correspond to AHU and other equipment details on the drawings.
12. Boiler/Chiller room safety equipment, interlocks, and alarms are specified.
13. Chillers and boilers have automatic isolation valves if needed for lead/lag sequencing.
14. Controls schedule/part number list is included on the drawings.

/ix. Sequence of Operations

1. Morning warm-up and cool-down modes are described.
2. Economizer sequence is applied. Enthalpy sensors are used, if appropriate.
3. Occupied and unoccupied sequences are described.
4. A fire and emergency power response matrix is provided for HVAC systems, lighting, alarms, and generator during power outage or fire alarm.
5. The emergency shutdown and fire alarm sequences are described.
6. Chilled water system sequences are provided, including start/stop, temperature control, lead-lag, loading and unloading, and primary-secondary operations.
7. VFD control of pumps and fans is described.
8. Ventilation mode (Carbon dioxide) control is described, including overrides with temperature.
9. Energy and/or heat recovery sequences are explained, with setpoints.
10. Freeze protection strategies are included.

11. Mechanical Room ventilation is described, including refrigerant leak mode.
12. Kitchen Exhaust and make-up air sequence are described; including Ansul suppression system equipment interlocks.
13. Hot water heating system sequences including start/stop, temperature control, lead-lag, primary-secondary operations are provided. Heat recovery feature has been explored.
14. Supply fan and return fan tracking strategy is provided.
15. Sequences are included for stand-alone equipment not interfaced to BAS.

/x. Indoor Air Quality

1. Outdoor air intakes at louvers or rooftop units are not close to exhaust fans, cooling towers, plumbing vents, or boiler stacks.
2. Outdoor air intake louvers are not close to loading docks, traffic, or dumpsters.
3. Exhaust fans serve photocopy rooms, storage rooms, break rooms, labs, etc.
4. Ventilation rates will be met when VAV boxes are at minimum air flow condition, and calculations or procedures are included.
5. Air filters are the appropriate efficiency for the application and meet applicable LEED requirements. Filter rack appropriate for filter size and specification.
6. The use of duct liner and exposed insulation in AHUs has been evaluated as a potential source of microbial contamination and debris, and the potential for such contamination has been minimized.
7. Demand control ventilation strategies using CO2 sensors have been considered. Sensors have been located adequately and protected from tampering.
8. Operations and Maintenance
9. Valves are provided at all piping risers and main branches. Valves meets recognized quality standards.
10. O&M Manual requirements are included in the specifications.
11. Owner orientation requirements are included in the specifications.
12. Equipment warranty requirements are detailed in specifications.

/xi. Plumbing

1. AHU condensate drains are piped to floor drains.
2. Floor drains have trap primers where needed.
3. Floor drains are properly vented.
4. Proper backflow prevention devices are specified.
5. Hot water return system is indicated.
6. Domestic make-up water is shown for HVAC systems fill.
7. Roof drains are combined with overflow drains.
8. Plumbing drawings include riser diagrams with pipe sizes and fixture units shown.
9. A domestic water booster pump is provided if required.
10. Specifications include sterilization of domestic water piping.

11. Gas pressure regulators are provided at appliances or equipment, if needed.
12. Water hammer arrestors are included in the specifications, if needed.

/xii. Coordination

1. The voltages and phase information provided on the mechanical equipment schedules match the electrical drawings.
2. MEP equipment structural, space, and clearance requirements have been reviewed.

/xiii. Electrical

1. Emergency generator loads are listed, and support life safety, data backup, communications, heat, food refrigeration, or other Sponsor needs.
2. Sequences of operation are specified for emergency generators, automatic transfer switch, and uninterruptible power supply.
3. Fire and Emergency Power Response Matrix are included.
4. Furnishing and installation of duct smoke detectors are coordinated with Trades.
5. Drawings show important typical Electrical details such as conduit penetrations, ductbank sections, grounding, lightning protection, cable supports, power, and control connections at fixtures, equipment and components, manholes, and handholes.
6. Drawings show important Schedule Details such as Cable and Conduit Schedules, Panel Schedules, Lighting Fixture Schedules, Specialty Wiring Device Schedules (or equivalent details), and Low Voltage and Alarm Component Schedules (or equivalent details).
7. Drawings show important One Line, Riser, and Block Diagrams such as Overall Power one line; Sub System Swbd or MCC one lines; Process and Instrumentation Diagrams (P&IDs); Power, Fire Alarm, and Low Voltage Risers; and Major Interconnection Block Diagrams.
8. Circuits on emergency power should be clearly indicated on the plans.
9. Major conduit runs are laid out to ensure there are no conflicts with piping and ductwork. Plan drawings show large numbers of conduits as a bank of conduits drawn to scale (in width) with a section taken to show height and width dimensions and conduit identifications, not as a single line.
10. .Temporary power is shown and/or specified in adequate detail to be accurately bid and to provide the temporary power required to execute the work. It is clear who provides temporary power, who pays the Utility Bills, and how they are paid.
11. Specifications require vendor to submit Factory Test procedures and check lists.
12. Equipment has clearance space for circuit breaker rack out, removals, door swings, etc.
13. Equipment location can be safely accessed: hatches, ladders, clear passageways. Room for future growth is provided, if appropriate.
14. Electrical equipment rooms do not have other unrelated systems running through them.
15. Access doors and panels are shown on drawing or with notes.
16. All mechanical equipment and controls are included on power plans (e.g., condensate pumps, small heaters, small booster pumps, BAS panels, heat tracing, chemical treatment equipment, automatic valves, VAV box transformers, air compressors).
17. Power to plumbing automatic flush valves and faucets has been coordinated. Power to electronic trap seal primers is provided.

18. Furnishing and installing of motor starters, disconnect switches, VFDs is clearly defined by Trade.
19. Convenience receptacles and lighting are provided at rooftop HVAC units and fans, if required.

II. Building Enclosure Commissioning (BECx)

/a Design Concepts and Technical Requirements

1. The construction documents include documents for a partial building enclosure mockup, if applicable.
2. The air barrier, insulation, vapor barrier, and weather resistant barrier are continuous. Interruptions in any of these barriers create opportunities for the development of condensation and moisture infiltration in the exterior walls or roof.
3. The wall system is free of thermal bridges, which may be a source of condensation within the wall system in cold climates.
4. The details describing interruptions in the typical exterior wall system (typically around windows, doors, and skylights) ensure adequate joinery in air, vapor, weather, and thermal barriers bridging the typical wall with the window and door systems.
5. Materials within the exterior wall systems provide adequate accommodation of differential movement resulting from thermal stresses.
6. The materials within the exterior wall systems accommodate movement resulting from moisture absorption and evaporation. Some envelope materials are absorptive which cause changes in size and movement that must be properly accommodated during design.
7. All joinery of exterior wall systems is detailed to ensure no water infiltration paths, and the building is designed to be completely watertight. Liquid water can penetrate a wall system via gravity, capillary suction, surface tension, kinetic energy, hydrostatic pressure, and air pressure. All wall systems are designed to ensure adequate drainage paths for water to exit.
8. All components of the exterior wall systems can safely permit the naturally occurring movements that all buildings experience during their lifetime. Sealant joints are included and sized appropriately to allow for the natural deflection of structural beams, lintels, and angles. Adequate construction tolerances are provided between wall systems and structural systems, and between distinct wall systems. Details depict the actual sizes of wall components.
9. Roof assembly is complete. If rigid insulation is used, adequate materials are provided to protect insulation boards during construction. Adequate protection from moisture migrating out of the concrete roof slab is provided.
10. Adequate drainage is provided for all surfaces of the roof. Drainage is not to be impaired by normally deflecting structural roof members, mechanical equipment, inadequate slope, etc.
11. Adequate descriptions are provided for all roof penetrations, including plumbing vents, roof drains, supports/legs/curbs for all mechanical equipment, mechanical piping, conduits, roof hatches, etc.
12. Materials within the roof system allow for adequate accommodation of differential movement resulting from thermal stresses.

13. Effective and current field testing (performance testing) methods are specified, as agreed by DDC and the Sponsor Agency.
14. Review of construction drawing details for compliance of materials with thermal resistance values per design.

2000
PUBLIC BUILDING PROJECT DEVELOPMENT

01 PROJECT PLANNING

02 DESIGN + CONSTRUCTION SERVICES

03 THE SPONSOR AGENCIES

01 PROJECT PLANNING

During the Project Planning stage, DDC evaluates proposed capital projects to ensure the project has holistically identified applicable scope, considered design constraints and construction parameters, and provided adequate funding. DDC develops a baseline schedule, prepares the specific project scope and requirements, estimates the project costs, determines the design and construction procurement paths through Front End Planning, Advanced Capital Planning and CPSD Studies.

01/A FRONT END PLANNING (FEP) AT DDC

The Project Planning and Initiation stage begins when the Sponsor Agency submits a Project Initiation (PI) request, which includes a general description of the project, a summary of the requested work, and information on funding. DDC's Front End Planning (FEP) Unit is then tasked with validating the project. In order to verify that scope and budget are aligned, DDC's FEP unit, along with technical support from A+E and the ADA Compliance Unit, conducts a preliminary project investigation to review existing conditions and site constraints, identify requirements for compliance with codes, local state and federal laws, and other City obligations, explore construction logistics and so forth, to establish the project scope and budget. FEP's findings are compiled into a report.

I. The Front End Planning (FEP) Report

The Front-End Planning Report is a tool for developing consensus around scope and budget with the Sponsor Agency. It also provides critical project details to the Office of Management and Budget (OMB) to validate requested funding. The Report is issued to the Consultant at Design Award as a reference document and 'test fit' representation of the project's scope of work and includes the project budget.

II. Strategy Board

All decisions made during this stage are vetted by DDC's Strategy Board who will take into consideration various regulatory pathways as well as design and construction services procurement options based upon project scope, schedule and budget. Upon acceptance by Strategy Board, the project is ready for Initiation.

01/B ADVANCED CAPITAL PLANNING

The Advanced Capital Planning program supports our Sponsor Agencies by leveraging database and survey information into a centralized data portal. Guided by DDC's technical expertise during the early stages of planning, Sponsor Agencies can more readily evaluate their assets using all available information as an overlay to strategic decision making, enable better anticipation of future needs and make more informed capital commitments.

01/C CAPITAL PROJECT SCOPE DEVELOPMENT (CPSD)

Capital Project Scope Development (CPSD) studies are large scale scope and project investigations, awarded to Design Consultants, that enable the City to plan and assess projects prior to capital commitment. The prime objective of a Capital Project Scope Development (CPSD) is to determine the scope of work and budget necessary for the renovation, expansion, or replacement of an existing or proposed, building, structure, and facility on a current or proposed site, to meet current and/or anticipated operational needs. A CPSD study might also include large-scale portfolio planning, master planning, space programming, design standards and technical research. Since the extent of each CPSD will vary, design services will be specific to the nature of the project. The following section outlines the base level expectations for a CPSD study.

I. CPSD Process

The scope development process is divided into three development Stages: (a) Inventory, Data Gathering and Analysis, (b) Development of Options, and (c) Final Scope Development Report. Each stage will culminate in a report which is issued for review and comment, further refined, and presented to DDC and the Sponsor Agency in its Final form. At the conclusion of the study, the final Stage III report is presented with the full project team to Office of Management and Budget (OMB).

/a Stage I - Inventory, Data Gathering and Analysis

This stage will focus on investigating the existing conditions of the site, and establishing the programmatic needs, zoning, applicable building codes and regulatory requirements as the basis for developing the conceptual options in Stage II. During this stage the consultant will perform the following tasks and hold meetings and workshops to review progress with DDC and the Sponsor Agency. Depending on the type and complexity of the CPSD, additional Stakeholders might be involved such as other city agencies, Federal Government entities, Community entities or boards, academic institutions. The Stage concludes with a presentation, review and approval of a Stage I Report which includes all opportunities and constraints. (see Section Z.01 for deliverables).

/i. Site Visits

Conduct building and site visits to review existing facilities, program, and operations.

/ii. Project Goals

Develop a set of Project Goals and Objectives with Stakeholders through a series of workshops and reviews.

/iii. Available Information Analysis

Obtain, review, evaluate all existing documentation as well as any available reports, including but not limited to, geotechnical, MEP, structural, utilities and code/zoning. Investigate historical documentation of Stakeholder facility and surrounding neighborhood, site adjacencies and environmental impacts.

/iv. Conduct Site Assessments

1. Facility Survey
2. Topographic Survey
3. HAZMAT Testing
4. Additional Reports as applicable (Arborist Reports, Underground Storage Tanks, etc.)

/v. Subsurface Investigations

Provide materials for geological conditions applicable to the project area, including recommendations for civil and structural engineering design and construction purposes.

/vi. Existing Systems and Services

Perform a thorough and complete facility(s) survey which includes analysis of code, zoning, regulatory compliance, ADA, life safety, architectural, structural, equipment, energy use, vertical transportation, infrastructure, and building systems.

/vii. Regulatory Analysis

Identify applicable code regulations and project-specific compliance strategies that are relevant to the existing site including but not limited to Planning, Land Use, Local Laws and Executive Orders, Fire Code, NFPA. DEP, LPC, MTA, NYCBC Appendix G, etc.

/viii. Program, Operations and Inventory

Analyze any on-site facilities and satellite units (if consolidation is required) throughout the city, conduct stakeholder interviews, document the existing Stakeholder program, produce detailed inventories, and capture projected growth.

/ix. Sustainability and Resiliency Goals

Conduct sustainability and resiliency workshops and establish goals with the project team (see workshops below and Sustainability section 1000.03 for Sustainability investigations and requirements).

/b Stage II - Development of Options

Based on the opportunities and constraints established in Stage I, the Consultant will develop 3 potential options, in collaboration with DDC and The Sponsor Agency, to a conceptual level and, at the conclusion of the stage, issue a report that documents and summarizes the process and conclusions. The team will select a preferred option (s) for further refinement in Stage III.

/i. Project Requirements

Summarize and identify all relevant requirements, opportunities and constraints based on Stage I report, which will inform the development of options, and produce a prioritized principles and criteria matrix. The constraints and opportunities should be prioritized in collaboration with DDC and the Sponsor Agency .

/ii. Development of 3 conceptual options

Once the project requirements are established, identify three options or strategies and present them to DDC and Sponsor Agency in the form of diagrams, drawings and 3-dimensional representation. The three options must reflect the project requirements and include an approach to project phasing, building systems/assemblies and a cost estimate.

/iii. Sustainability and Resiliency (see Sustainability).

Establish preferred sustainability options, strategies, and technologies including qualitative comparison between the 3 (three) architectural/ campus/ landscape design options. Hold an Environmental Design Workshops, if applicable, to begin defining potential LEED credits and a LEED Plan, defining resiliency strategies.

/c Stage III - Final Scope Development Report

Following an evaluation of the options presented in Stage II, the preferred design option will be refined together with a pre-schematic level cost estimate and compiled into a Final Report.

/i. The Preferred Option

Together with the DDC and Sponsor Agency, further refine the options into the preferred scheme and develop phasing strategies and a cost estimate. Arrive at consensus on the preferred scheme in order to proceed with the Final Report.

/ii. Draft Report

Develop a draft of the Final report which includes a comprehensive summary of critical project information from the preceding stages, a comparison and overview of the options and refinement, and a detailed pre-schematic level of development for the preferred option. Present the draft report to DDC and Sponsor Agency and issue for review and comment.

/iii. Final Report and OMB Presentation

Following a review and comment period, the design team will incorporate feedback into a Final

Report and develop a presentation of the report for OMB. The study will conclude following a full team presentation to OMB.

II. CPSD Management

/a Consultant Obligations

In addition to providing the Architectural scope of the study, the Consultant will be responsible for coordinating the project investigations and deliverables with all the subconsultants. The Consultant will compile and issue all required reports, drawings, documents and is responsible for documenting the meeting minutes.

/b CPSD Schedule

An initial project schedule is prepared by DDC as part of the Fee Proposal submitted in the RFP. The Consultant will be responsible for developing and refining the project schedule following initiation and throughout the CPSD process. The schedule must outline each stage with key scope of work items, meetings, workshops, milestones, required deliverables, tasks and project durations.

/c CPSD Meetings and Workshops

/i. Kick-Off Meetings

Kick-off meetings must be held at the beginning of each stage. The Kick-Off Meeting is attended by the Consultant and Front-End Planning Executive and expanded team members as may be required. At this meeting important project requirements shall be discussed, including but not limited to:

1. New or Updated CPSD project schedule
2. Open items from previous stage
3. Next steps

/ii. Bi-weekly Progress Meetings

Bi-weekly progress meetings are to be held throughout all stages. Required workshops may substitute for a bi-weekly meeting when appropriate.

At progress meetings, the Consultant is expected to make presentations which clearly identify issues, present options, cost estimates and demonstrate progress, etc. The consultant is required to invite sub-consultants, as required, to discuss the appropriate phase of development for their scope of work and provide adequate advanced notice of presentation or technical topics to arrange for stakeholders and DDC team members to attend. These meetings are intended to facilitate constructive exchanges of information and decision-making to advance the project.

/iii. Stakeholder and Interdisciplinary Workshops

Stakeholder and Interdisciplinary Workshops are intended to involve all stakeholders as pertinent to the topic under investigation as a means to conduct interviews, capture project requirements and applicable Regulatory and Local Laws related to the project. DDC and pertinent Stakeholders must be included as participants and conclusions/requirements circulated for review and comment following the workshops. Some key workshops include, but are not limited to:

1. Stakeholder Objectives and Goals
2. Existing Conditions and Site Investigations
3. Programming and Program Matrix

4. MEP/Civil/Utility
5. Civil / Resiliency (when applicable)/ Environmental (MS4, when applicable)
6. HAZMAT and/or remediation, as applicable
7. Zoning & land use and applicable regulatory processes and requirements
8. Phasing Logistics

/iv. Sustainability and Resiliency Workshops (see section 1000.03)

The following workshops are required to be coordinated with the Office of Sustainability, Commissioning and Resiliency (OSCR), at the appropriate stage of project development, to develop a Sustainability and LEED plan for the project. See Section 1000.03/D for more details about these meetings.

1. Integrated Process Workshop
2. Environmental Design Workshop

III. CPSD Submission Checklist

CAPITAL PROJECT SCOPE DEVELOPMENT **Submission checklist** For description of submission requirements list below see Section Z	Stage I Submission	Stage II Submission	Stage III Submission
Z.01 Report			
Executive Summary			
Project Introduction	•	•	•
CPSD Schedule Summary	•	•	•
Project Considerations and Objectives	•	•	•
Existing Conditions			
Site Analysis	•		
Site History	•		
Existing Facility Assessment	•		
Existing Programming Analysis	•		
Existing Conditions Summary		•	•
Project Description			
Project Goals	•	•	•
Project Criteria (Regulatory and Design Standards)	•	•	•

CAPITAL PROJECT SCOPE DEVELOPMENT **Submission checklist (Continue)** For description of submission requirements list below see Section Z	Stage I Submission	Stage II Submission	Stage III Submission
Project Description			
Program Requirements and Matrix		•	•
Space Allocation and Benchmarking		•	•
Options			
Option Analysis		•	•
Option Description		•	•
Options Comparison Matrix		•	•
Preferred Option			
Siting			•
Description			•
Building Elements			•
Z.07 Design and Construction Schedule		•	•
Sustainability and Resiliency (See Section 1000.03/C/III)	•	•	•
Project Logistics		•	•
APPENDIX/REFERENCE DELIVERABLES			
Stakeholder Interviews, Outreach Documentation and Inventory Matrices	•	•	•
Z.07 Cost Estimate		•	•
Z.15 Existing Conditions Model (BIM) (as necessary for facilities undergoing a significant renovation/ expansion)	•		
Z.03 Communication Records/Meeting Minutes	•	•	•
Engineering Investigations & Reports (coordinated by Consultant)	•	•	•
HAZMAT Documentation (coordinated by Consultant)	•	•	•

02 DESIGN + CONSTRUCTION SERVICES

02/A THE CORE PROJECT TEAM

1. **The Consultant Team (Including All Required Sub-Consultants)**
2. **The DDC Project Team**
   a. The DDC Project Manager (DDC PROGRAM UNIT)
   b. The DDC Team Leader (DDC ARCHITECTURE/A+E UNIT)
   c. The Design Liaison (DDC DESIGN and CONSTRUCTION EXCELLENCE/A+E UNIT)
3. **The Sponsor Agency Project Team**

02/B DDC PUBLIC BUILDINGS DIVISION

I. The Program Unit

The Program Unit provides project management services for the Civic and Uniform agencies and entities that rely on DDC to execute construction throughout the five boroughs of the city. These agencies and entities include, but are not limited to, Police, Fire, DCAS, Courts, DEP, Sanitation, Transportation, Tanks, Health, Parks, Human Services + UPK, ACS, Libraries, and Cultural Institutions.

/a The Project Manager

Under the leadership of the Program Director and Deputy Program Director, the DDC Project Manager (PM) will represent the Program Unit as the central point of contact with all project stakeholders including:

- DDC Contracted Consultants (see section 2000.02/E)
- The Sponsor Agency and on-site operator, if applicable (see section 2000.03)
- The Architecture + Engineering Unit (see section 2000.02/B/II)
- DDC General Project Support teams (see 2000.02/D)
- Prime Contractors

/i. The PM's general project responsibilities include:

1. Coordinating approval of project funding through the DDC Budget department.
2. Scheduling and coordinating all project meetings.
3. Point of contact for all project communications

   At the onset of the project, the DDC Project Manager will develop a project contact list to clearly outline all involved parties on the project. Refer to section 02/F – Office of Community Outreach and Notification related to any communication requirements with external parties.

4. Coordinating with the Consultant, including but not limited to:
   a. Reviewing and processing the task order and any supplemental task orders that may arise and facilitate registration through the DDC ACCO department.

b. Reviewing and processing Requests for Approval of Subcontractor (RFAS) through the DDC ACCO department.
c. Providing all standards, templates and forms required for DDC submissions.
d. Receiving and distributing all design documentation and submissions
e. scheduling hazmat surveys and obtaining hazmat specs and drawings through the OEHS department for distribution to the consultant.
f. Reviewing and processing payment requisitions and facilitate approval through the DDC Engineering Audit Office.

5. Coordinating with the Sponsor Agency, including but not limited to:
   a. Obtaining and distributing Sponsor Agency design standards
   b. Distributing design submissions, reviewing sponsor agency comments, and distributing Sponsor agency comments to the consultant and A+E unit.
   c. Resolving issues that arise for the sponsor agency throughout all phases of the project.
   d. Facilitating communication between the Sponsor Agency and Design and construction teams.
6. Coordinate, negotiate, review and process Supplemental Task Orders (see section 4000.02/B) and Change Orders for the project.
7. Liaise with regulatory agencies, in coordination with Permits & Approvals, on behalf of the project as needed.

/ii. Communications Protocol

All project communications must go through the DDC PM.

II. The Architecture + Engineering Unit

/a Architecture Unit

The Architecture Team helps establish project baseline criteria and provides technical support and subject matter expertise to the Core Project Team during the Design Phase. A staff member from the Architecture Unit will be assigned as A+E Team Leader and a team member will be assigned to each project for every discipline represented in the project scope.

/i. Architecture, Team Leader

The Team Leader will act as the main point of contact for the DDC technical review team and coordinate each trade as applicable, including Architecture, Engineering, Accessibility, Landscape Architecture, Historic Preservation, Public Art, and Sustainable and Resilient Design. The Team Leader will attend all regular project meetings and workshops and coordinate other members to attend on an as-needed basis. The Team Leader will also coordinate the A&E Team's review of each milestone submission.

/ii. Landscape Architecture

A Landscape Architecture team member will be assigned to each relevant project to provide technical expertise for site planning, grading, planting, etc. The Landscape Architecture team member will attend meetings, workshops, and review sessions as needed.

/iii. Historic Preservation

A team member from DDC's Historic Preservation Office will be assigned to each relevant project to provide expertise in NYC historic buildings and their construction methodologies,

as well as in the navigation of the Authorities Having Jurisdiction (as required) over said properties. The Historic Preservation team member with be the point of contact with the Landmarks Preservation Commission and all applications with be submitted through the HP team member. The Historic Preservation team member will attend meetings, workshops, and review sessions as needed.

/b Engineering Unit

The Engineering Team helps establish project baseline criteria and provides technical support and subject matter expertise during the Design Phase. A team member will be assigned to each project for every discipline represented in the project scope, including Structural, Mechanical, Electrical and Plumbing/Fire Protection. Engineering team members will attend meetings, workshops, and review sessions on an as-needed basis.

/c Front-End Planning Unit

The Front-End Planning Unit is responsible for managing and executing the Front-End Planning process including, vetting potential projects with the Program Units and Sponsor Agencies, developing the project FEP reports, orchestrating and presenting at weekly Strategy Board meetings and working with the Project Managers and Sponsor Agencies to modify the scope, schedule and budget as needed. FEP also manages the Capital Project Scope Development (CPSD) program and the Advanced Capital Planning program.

/d Office of Sustainability, Resilience & Commissioning (OSRC)

The Office of Sustainability and Resilience Team helps establish project baseline criteria and provides technical support for sustainability and resiliency matters as well as subject matter expertise during the Planning and Design Phase. The OSRC team is primarily responsible for the following:

1. Ensuring that the City's Sustainability and Resiliency goals for Public Buildings are met by participating in design phase submission reviews and sustainability workshops.
2. Providing direction and guidance on Sustainability and Resiliency Local Laws and City Charter mandates
3. Liaising with MOEC for city-wide and project-specific environmental reporting and approvals
4. Liaising with DCAS for the Clean Energy Program to earmark public building projects appropriate for inclusion in the program.
5. Coordinating Commissioning Agent contracts and providing project related communications with the Commissioning Agent throughout design and construction

/e Design + Construction Excellence

The Design + Construction Excellence Unit is responsible for advocating for the importance of design quality throughout the life of a capital project. From planning and initiation, including RFQ/RFP development and consultant selection, throughout design and construction, and during closeout, the D+CE Unit works collaboratively with all capital project stakeholders to support the timely delivery of high-quality and viable capital projects that are responsive to key agency priorities, civic design criteria, and Public Design Commission design review requirements.

To ensure design quality remains on equal footing with schedule and budget, a Design Liaison from the D+CE Unit is assigned to each capital project across Public Buildings and is a key stakeholder on all capital projects requiring PDC review. In addition to monitoring design quality and providing guidance on civic design best practices, the Design Liaison serves as the liaison to PDC, handling all PDC-related matters on behalf of the agency and its Consultants.

For all capital projects requiring PDC review, the Design Liaison advises capital project teams on the number and levels of PDC reviews required, provides up-to-date guidance on the submission and review processes, and shares submission package requirements. The Design Liaison also conducts in-depth reviews of all submission packages before they are transmitted to PDC. All communication between capital project teams and PDC is handled via the liaison, who further assists in acquiring the requisite agency signoffs from DDC and partner agencies.

/f Public Art

The Public Art Unit is responsible for facilitating the inclusion of public art in capital projects across Public Buildings and Infrastructure divisions making site-specific artworks broadly accessible and visible throughout New York City. This primarily involves managing the NYC Percent for Art Program, City Canvas Program, and other special projects related to public art. The Percent for Art Program, established under Local Law 65/1982, provides City agencies with the opportunity to acquire, commission, or restore works of art. In addition, the City Canvas Program, made permanent by the adoption of Local Law 163/2021, allows for the exhibition of artwork on temporary protective structures.

For all capital projects that qualify for artwork, a Public Art Manager from the Public Art Unit is assigned to provide guidance on the process for integrating artwork and to serve as the liaison between the capital project team and the Department of Cultural Affairs (DCLA) in support of executing the Percent for Art Program. The Public Art Manager is the primary of contact between the capital project team, DCLA, the Consultant, and the selected Artist. In addition to attending and participating in meetings, the Public Art Manager also serves as the liaison to PDC, handling all PDC-related matters for artworks on behalf of the agency and its selected artists.

For all artworks requiring PDC review, the Public Art Manager advises capital project teams on the number and levels of PDC reviews required, provides up-to-date guidance on the submission and review processes, and shares submission package requirements. The Public Art Manager also conducts in-depth reviews of all submission packages before they are transmitted to PDC. All artwork-related communication between capital project teams and PDC is handled via the Public Art Manager, who further assists in acquiring the requisite agency signoffs from DDC, DCLA and partner agencies.

/g Bid Packaging

The Bid Packaging team is responsible for reviewing DDC Public Buildings' technical specifications and all other bid documents for compliance with the City of New York's Procurement Policy Board rules as well as guidelines particular to DDC.

All Competitive Sealed Bid projects are subject to Bid Package review after the DDC A+E Technical Review and prior to Design Completion. The Bid Package team will review the consultant specifications, cost estimate, and other bid documents prior to entering the Procurement Phase in Design Bid Build.

/h Permits and Approvals

The Permits and Approvals team assists project teams during design to develop filing strategies and is a liaison to the Department of Buildings. During construction phases they help schedule and coordinate required inspections and signoffs.

III. ADA Compliance Unit

The ADA Compliance Unit is involved from initial project planning (Front-End Planning), throughout the entire design phase, and into construction until the project reaches substantial completion. In addition to reviewing technical and on-site issues during the entire life of the project, we are also a resource to

the design and construction teams to ensure that NYC's Public Buildings are compliant with all aspects of accessible design, which includes federal, state, and local laws, and best practices learned from other trusted sources. The ADA Compliance Unit also serves as Technical Committee members to the NYC Construction Code Revision process, as the Agency's Disability Service Facilitator, and the development and enforcement of DDC's Five Year Accessibility Plan.

Project Planning: Alongside Front-End Planning, the ADA Compliance Unit visits a potential project site to determine the level of compliance of the existing structure and compare that to the Sponsor's initial project request. Upon a detailed review and analysis, all parties involved will further refine the project scope and assign a cost estimate or determine that the project is not feasible to be initiated due to either unforeseen issues or budgetary constraints.

Design Review: Alongside A&E, the ADA Compliance Unit carefully reviews scope changes, plans, specifications, submittals, cost estimates and related documentation. When necessary or specifically requested, our team attends comment resolution meetings with the consultants to ensure our comments are properly addressed. Although the ADA Compliance Unit will always require full compliance with the requirements, there are instances where compliance cannot be achieved. In those instances, our Unit would facilitate the Design Consultant and provide input on and meet with the Mayor's Office for People with Disabilities (MOPD) where we can seek a recommendation/ waiver from the NYC Building Code, where those requirements exceed that of the ADA Standards.

Field Inspections: Per Public Buildings Policy 034, the ADA Compliance Unit conducts field inspections during all phases of new construction and alteration projects to ensure compliance with all regulatory requirements for accessible design and construction.

Technical Assistance: If issues occur, the ADA Compliance Unit can be made available to meet with the Department of Buildings, MOPD, and/or the Sponsor Agency. Furthermore, we can provide technical assistance with shop drawing reviews, review of cut sheet submittals, and Bulletin reviews post Construction Document submittals.

02/C DDC GENERAL PROJECT SUPPORT

I. DDC Site Support Unit

/a Office of Geotechnical Investigations (OGI)

A geotechnical site investigation may be required to understand and provide information on the project site's soil conditions below the surface. Aspects of the subsurface include the groundwater conditions, the strength and the types of soils or bedrock present, the seismic site class of the site, fulfilling the requirements from the Building Code, and the challenges associated with foundation construction. Such conditions determine many factors, including the project construction costs, type of foundation is required to support the proposed structure, the constructability, and help to inform future bids. Geotechnical work includes the geological site investigation and the preparation of a geotechnical data report.

Design Consultant must retain a Geotechnical Engineer to provide services through the design development, construction documents and construction administration phases. The Geotechnical Engineer will develop the scope of work of a subsurface investigation program. The OGI will conduct a historical subsurface information research, perform the geotechnical subsurface investigation and prepare the geotechnical data report for the project Geotechnical Engineer use and to be incorporated into the construction documents. OGI's work product includes the following:

/i. Historical subsurface information

OGI maintains an archive of over 4,300 completed geotechnical investigations spanning more than 80 years. Before starting a new geotechnical service request, contact OGI to determine

if historical data are available and cover the limits of the project site. Historical data will help understand existing conditions and aid the development of a new geotechnical investigation scope of work.

/ii. Geotechnical Subsurface Investigation

A geotechnical subsurface investigation consisting of, where applicable, test borings, test pits, bedrock coring, groundwater observation well installation, and in-situ testing to observe the composition and engineering properties of the subsurface conditions of the site as well as the features of existing structural foundation elements. OGI's contractor will conduct the field work while OGI's consultant will document and log the findings from the field.

/iii. Geotechnical Data Report

A geotechnical data report will be prepared by OGI's consultant to document the factual findings of the site investigation. The report consists of a material description of the soil and bedrock encountered, classification following the New York City Building Code, relative density of the soils encountered, a record of groundwater observations, and photographic and schematic representations of test pit excavation findings. Laboratory analyses of selected soil and bedrock material will be included to provide additional engineering properties. New York City Building Code boring and test pit special inspection TR forms will be included also, if applicable.

/b Office of Land Surveying (OLS)

A map to survey grade accuracy may need to be created of an occupied or vacant lot to determine ownership prior to the commencement of construction activities. The survey map and other services that can be provided are but not limited to; Topographical and Property Line Mapping, 3-Dimensional Scanning along with Building Information and Revit Modeling. Additional services that can be provided are, an Underground Vault Survey Report, Subsurface Utility Engineering (SUE) and a Tree inventory Report.

/i. Topographical And Property Line Map

A Topo Survey may need to be prepared to depict the overall limits of a lot which may be undeveloped or contain an existing structure. The map should capture all site features, legal grades, elevations of all fixed objects, site dimensions. All elevations to be presented in NAVD88 (vertical) and NY State Plane (horizontal) Datums.

/ii. 3-Dimensional Scanning

3-D Scanning may be needed to document an existing structure for historical preservation of the exterior façade or interior architectural features. This method of surveying can be utilized to capture structural movement or deflections.

/iii. Building Information And Revit Modeling (BIM)

BIM is a service that can be provided through an OLS consultant contract. This service utilizes 3D point cloud data from a scanner device to generate a realistic rendering/model of a structure or object that can be rotated 360 degrees for multiple views along the XY Axis.

/iv. Vault survey

An underground vault shall mean any private basement or cellar in a structure that is not visible at the surface which extends beyond the mapped right-of-way that encroaches into a pedestrian sidewalk or the bed of a roadway. The deliverable for this service is in the form of a report that indicates location of vault(s), dimensions, roof and floor elevations and a photo library of each location in the project area.

/v. Subsurface Utility Engineering (SUE)

SUE is an investigative tool to locate and mark-out underground utilities to ensue no disturbance occurs during construction activities. There are four levels of this type of survey that ranges from a Level "A" to a Level "D" investigation. The most common investigation type is a Level "B" where sensoring equipment is used to determine location of a said utility. The deliverable for this service is in the form of a plan indicating the type and location of all utilities within a project location.

/vi. A Tree Inventory Report

A report is prepared by a licensed Arborist who follows guidelines set forth by a governing agency such as the Department of Parks and Recreation for New York City. The information captured in this type of report is the tagging, species, diameter, health and condition canopy along with a photograph of each tagged tree in the designated project area. The deliverable for this service is in the form of a plan with all information listed above displayed in a table.

/c Office of Environmental & HAZMAT Services (OEHS)

The Office of Environmental & HazMat Services (OEHS) provides a wide variety of technical services for DDC's Public Buildings. OEHS consists of Environmental and HazMat units staffed with degreed, licensed, certified, and experienced environmental scientists, engineers, industrial hygienists, public health professionals, and geologists who utilize scientific equipment, oversee field investigations, permitting and remediation activities, and review laboratory analytical data in compliance with regulatory standards.

/i. Environmental Unit

Environmental review may be required to assess projects for potential impact, disclose, and mitigate to the greatest extent practicable the significant environmental consequences of their decisions to fund, directly undertake, or approve a project. OEHS may be required to provide all services required for the preparation of:

- Environmental Assessment Form (EAF),
- Environmental Assessment Statement (EAS),
- Environmental Impact Statement (EIS),
- Phase IA Archaeological Documentary Study,
- Phase IB Archaeological Survey,

The Environmental Consultant's services shall be in accordance with all current, new and/or revised federal, state and city laws, rules, and regulations, and shall assess the project considering the environmental review requirements of the City Environmental Quality Review Process (CEQR) and the New York State Environmental Quality Review Act (SEQRA).

Environmental investigations and sampling may be required for projects during the design phase to better understand the environmental history of a project's site and the quality/conditions of the site's soil, groundwater, and soil vapor. The OEHS may be required to provide:

- Phase I Environmental Site Assessments (Phase I ESA), and
- Phase II Environmental Site Investigations (Phase II ESI).
- Hazmat Specifications and Cost Items

The deliverables are incorporated into the construction bid documents for the project to ensure that any potential increased costs due to handling and disposal are considered prior to bid and award.

/ii. Hazmat Unit

Hazmat removal work may be required for some Public Building projects including, but not limited to, asbestos abatement, lead abatement, petroleum storage, and handling equipment abatement and the lawful disposal of other hazardous materials regulated by Federal, State and City environmental protection authorities.

Unless otherwise determined by DDC, all Hazmat removal design work required will be performed through DDC OEHS; DDC OEHS will conduct probes at pre-selected locations on the project site, determine what is required for bidding, and provide documents to the Consultant.

OEHS's work product includes the following:

1. Accessible Hazards:

   A preliminary survey of the project site noting existing environmental conditions and properly defining the limits of accessible suspect hazards that may be disturbed, altered, demolished, or affected by the proposed work. Such environmental hazards may include, but are not limited to, asbestos building materials, lead-containing paints, PCBs from electrical transformers, underground storage tanks, and similar conditions.

2. Inaccessible Hazards:

   Identification and location of any inaccessible suspect-hazards and arrangements for exploratory probes, physical penetrations, sample collection, and analytical tests to determine whether suspect-hazards are present within the boundaries of the scope of work.

3. Assessment:

   A comprehensive environmental survey and hazard assessment, with a subsequent formal report, to determine the presence and location of hazardous materials and/or environmental conditions. The survey report will document the materials and conditions found and expected to be impacted by the scope of construction. The report must include the following information:

   a. A brief discussion of the services provided.
   b. An inventory of environmental hazards including, but not limited to, asbestos, lead, soil contamination, PCBs, mold and biological hazards, or similar environmental concerns.
   c. A written assessment of all hazards including cost of abatement or remedial work.
   d. Drawings or sketches showing approximate locations where samples were collected.
   e. An estimate of the quantities and conditions of the hazards identified in the survey.
   f. A summary of all samples, analyses, chains of custody, and laboratory certifications.
   g. Diagrams, photographs, sketches, drawings, etc., as necessary to document the conditions.

II. DDC Cost Controls and Schedule Management Units

The Cost Controls unit supports projects with cost estimating, cost forecasting and analysis, and risk quantification.

The Schedule Management unit supports projects with schedule development and analysis including review of risks and delays and review of consultant and contractor schedules.

III. DDC Office Of Community Outreach and Notification (OCON)

The Office of Community Outreach and Notification (OCON) serves as the primary liaison between the Department of Design and Construction (DDC) and the community. OCON is dedicated to fostering strong relationships with community boards, business improvement districts, community-based organizations, and individual residents to ensure transparency and collaboration on all DDC projects.

Key responsibilities include:

1. Community Engagement:
   Proactively reaching out to community stakeholders to provide timely updates on project progress, address concerns, and gather valuable feedback that is shared with the larger project team.
2. Public Relations:
   Developing and implementing effective communication strategies to inform the public about DDC initiatives and build trust within the community.
3. Community Outreach:
   Organizing community meetings, workshops, and events to foster dialogue and promote understanding of DDC projects.

IV. DDC Agency Chief Contracting Officer (ACCO)

ACCO is responsible for contract procurement of professional services contracts including, but not limited to, CM and Design contracts. During the Bid Award process, ACCO manages the Competitive Sealed Bid unit, which oversees all aspects from the Bid Room, advertising, bid openings through pre-award, and registration of these contracts. During the Construction Phase, ACCO is responsible for managing all task orders, processing all construction allowances, change orders, and time extensions, as well as all vendor integrity activities.

V. DDC Engineering Audit Office (EAO)

EAO is responsible for verifying the validity and cost reasonableness of all payment requests for construction related service contracts prior to processing such requests in the City's Financial Management System to ensure that the City has received appropriate value under the terms of the contract.

VI. DDC Office of Diversity and Industry Relations (ODIR)/MWBE Compliance Unit

The M/WBE Compliance unit tracks and monitors contracts to ensure that DDC's M/WBE related program requirements are met. The unit sets M/WBE contract goals for each eligible procurement, and the consultant must adhere to these goals to meet the terms of their contract with the City and DDC.

02/D OTHER DDC CONTRACTED CONSULTANTS

I. Commissioning Agent (CxA)

DDC retains third-party Commissioning Agents (CxA) through a separate contract for projects that are pursuing LEED certification, for projects that require commissioning to comply with the New York City Energy Conservation Code, and for projects with large or complicated systems at the discretion of DDC and the Sponsor Agency. The Consultant shall assist and support the CxA throughout the project. The Commissioning Agent will work with the Consultant team to clarify Sponsor Agency goals and make sure that the design addresses those goals through implementation of a Commissioning Plan. Please note that the term "Commissioning Agent" may refer to one or more individuals from one or more consulting companies.

/a Commissioning Agent Services

/i. Commissioning Plan and Schedule

The Commissioning Plan is a document developed by the CxA that outlines the organization, schedule, roles and responsibilities, allocation of resources, and documentation requirements of the commissioning process. The Commissioning Plan provides guidance in the execution of the commissioning process.

The CxA will develop and provide the Commissioning Plan during the design phase and update it throughout design and construction. This plan is a living document that must evolve and expand as the Project progresses. The Commissioning Plan will include:

1. Description of the facility and Project.
2. Commissioning Team member responsibilities, identified by name, firm, and trade specialty, for performance of each commissioning task.
3. Description of the commissioning process and associated deliverable documents.
4. Description of equipment and systems to be commissioned.
5. Test and inspection procedures, developed in collaboration with the Consultant.
6. Description of schedules for testing procedures along with identification of parties involved in performing and verifying tests.
7. Sample rates for equipment to be tested.
8. Identification of task items that must be completed before the next operation can proceed.
9. Description of responsibilities of Commissioning Team members.
10. Description of observations to be made and reported on during testing and witnessing of testing by all parties involved in the Project.

/ii. Design Submission Reviews

The CxA will perform design reviews of the Consultant's Design Development and Construction Document Phase Milestone Submissions. See Section 3000/2/A/III.

/iii. Commissioning During Construction

The CxA will participate in construction as outlined in the Commissioning Plan including but not limited to, attending phase commissioning meetings, reviewing submittals, control

integration plans, testing and balancing procedures and reports, developing test checklists and plans, developing the Master Equipment List, reviewing O+M manuals, As-Built review and verification, etc.

/b Commissioning Agent Deliverables

/i. Owner Project Requirements Template

The CxP will provide an OPR template to the Consultant team to guide the development of this document (see Section Z/11 for OPR deliverable requirements)

/ii. Commissioning Specifications

The CxP will provide Commissioning specifications to the Consultant during the design process to be incorporated into the project specifications. See Section Z/11/C

II. Third-Party Special Inspection

To ensure construction meets required Building Code, DDC hires a special inspection provider to perform third-party inspections. If Special Inspections are required for a project, the DDC's project manager coordinates and initiates the contracts with an approved special inspection provider.

Special Inspectors work collaboratively with the design consultant to verify approved plans are properly executed throughout the construction process. This includes:

1. Reviewing plans and specifications with the design team prior to construction
2. Conducting regular inspections at key intervals during construction
3. Performing required tests and verifying assemblies/equipment meet code requirements
4. Issuing detailed reports documenting inspection findings and any deviations from a pproved plans
5. Working closely with the design consultant to resolve any issues or objections raised in reports
6. Providing final inspection certification upon successful completion of all required inspections

Coordination protocols between the special inspector, design consultant, and DDC include:

1. Pre-construction meetings to review roles, responsibilities, and processes
2. Regular communication regarding upcoming inspection schedules and findings
3. Prompt notification to all parties if any deviations or concerns are identified
4. Collaborative resolution process for any objections raised by the special inspector

III. CM Manage Services

For projects identified for CM Manage services, DDC will hire a third-party Construction Management Company to operate as an extension of DDC project staff.

During the design phase, the CM will provide constructability reviews, review BIM Execution plans and models, perform risk assessments, review cost estimates, phasing plans and site logistics.

During the Construction Phase, the CM will coordinate project meetings, provide meeting minutes, review the BIM models, provide support validating and organizing shop drawings, submittals, RFI's and change orders to ensure that the AOR/EOR/DDC can respond appropriately and in a timely fashion. The CM proactively and collaboratively manages the Contractor by working through schedule optimizations with the contractor and design consultant and in discussion with the DDC field team and Sponsor.

03 THE SPONSOR AGENCIES

DDC runs design and construction projects for 28 City agencies. The Sponsor Agency, and/or in some cases, an operator or organization will be the end user for the final building or facility. The Sponsor Agency, project manager and a representative of the end user are therefore critical members of the Core Project Team and must ratify the proposed design for layout, functional adjacencies, material choices and any other aspect of the design that affects the user experience.

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PUBLIC BUILDING DESIGN+CONSTRUCTION

01 GENERAL PROJECT DELIVERY REQUIREMENTS

01/A BASELINE SCOPE, BUDGET AND SCHEDULE

Careful project adherence to scope, budget and schedule is critical for a successful DDC project. Adjustments to any of those three measures can have lasting repercussions on Capital project delivery. As noted in the previous chapter, the FEP Report establishes a baseline scope, budget and schedule for each project. This forms the basis for the Consultant's design fee and is memorialized in the Notice of Award that is issued to the Design Consultant at the start of each project (see Section 4000.02/A). The Consultant obligations for scope, budget and schedule are as follows:

1. The Design Consultant is responsible for delivering a design that falls within the Estimated Construction Budget (basis for the design fee.) Projects that exceed the Estimated Construction Budget (basis for the design fee) at any point in the design phase, must be value engineered at the consultant's expense and the necessary changes expedited to maintain the project schedule.
2. The Consultant shall notify DDC no later than the Schematic Design phase, if they believe that the project scope cannot be achieved within the approved budget, but this does not relieve the Consultant of their responsibility to deliver a project that adheres to the budget.
3. Deviations from project scope are discouraged. If changes to the established project scope or budget are required, they must be initiated by the Sponsor Agency and follow the DDC's policy for Sponsor Initiated Scope Change Requests. The policy includes a scope change impact assessment to be performed by the consultant as an additional service. This assessment will be reviewed by DDC for approval prior to the inclusion of the requested additional scope in the project. Once approved, a new baseline scope, schedule and budget will be established.

01/B GENERAL CONSULTANT OBLIGATIONS

I. General Delivery

The project design must be complete, comprehensive, documented accurately and capable of being executed in a safe, effective and timely manner. All project scope must be completely represented in the contract documents and may not be delegated to the Contractor. Swing space, phasing and work restrictions must be thoroughly documented and scheduled. Despite the DDC review protocol, the Consultant retains complete responsibility for the quality of the documents, constructability and compliance with building code, as well as local state and federal law.

II. Procurement Documents

The City's ability to successfully procure, and/or build the Consultant's work is contingent upon the production of clear and complete documents. Drawings and specifications must conform to DDC's standards, many of which are legally prescribed. The consultant must ensure that materials and systems selected for the project comply with the City's Procurement Policy Board Regulations. The Consultant shall take care in the preparation of specifications. Specifications will not be accepted if incomplete or uncoordinated, if they contain sections not specific to the project, or contain language not in conformance with DDC requirements.

III. Construction And Close-Out

The Consultant shall provide timely and proactive responses during the construction phase to ensure documentation on file with the Department of Buildings and other Authorities Having Jurisdiction is kept up to date with any changes made in the field so that the project may be properly closed out in a complete and efficient manner.

IV. Performance Evaluations for Design Consultant Evaluations

Consultants will be evaluated at the completion of all project milestones, or as needed, based on their ability to provide quality products and services on time, within budget, and in conformance with contractual requirements. Performance evaluations serve to provide Consultants with feedback on their performance throughout the lifespan of a project and DDC with a record of performance for all Consultants providing design services. DDC will review previous performance evaluations when evaluating proposals for new projects and consider the past performance of a vendor in its selection.

V. Publicity/Awards/Press

Consultant (and their employees, sub-consultants, subcontractors, etc.) shall not issue any press release or other public announcement (on any social media platform or outlet) or otherwise make any public statements, written or oral, without the prior written consent of DDC.

If any media outlet (including blogs) reaches out to the Consultant (and their employees, sub-consultants, subcontractors, etc.), the Consultant will immediately contact the appropriate person at DDC (DDC's Public Information Officer) and will not respond until DDC has approved in writing.

If the Consultant is interested in seeking an award on a DDC project, the Consultant shall first get DDC's written permission and agree to work with DDC's Public Information Officer on how the application and/or nomination may be presented.

Consultant will not include photographic or artistic representations of the design of the DDC project in Consultant's promotional or professional materials, on any website, social media platform, or outlet, without prior written consent from DDC.

VI. Computer Software

/a Construction Management Software
The Consultant may be obligated to purchase the DDC-stipulated Construction Management Software (CMS) for project team use during the Design and/or Construction Phase of the project. If this is a project requirement it will be included in the Task Order (See Section 4000.02/B) as a reimbursable expense.

/b Office Master Specification Software
The Consultant may be obligated to purchase licenses for the DDC-stipulated Office Master Specification (OMS) Software for project team use during the Design Phase of the project. This requirement will be included in the Task Order (See Section 4000.02/B) as a reimbursable expense.

02 DESIGN-BID-BUILD PROJECT DELIVERY

The Design-Bid-Build (DBB) delivery method at DDC involves three roles in the project delivery process—owner (NYC/DDC/Sponsor Agency), architect (Consultant), and builder (publicly procured Contractor)—in which competitively bid, lump-sum construction contracts are based on complete and prescriptive contract documents prepared by the architect. These documents generally include drawings, specifications, and supporting public procurement details. The phases of work are typically conducted in linear sequence.

DDC contracts with a Consultant for design; uses the design documents produced by the Consultant to secure competitive bids from contractors; and, based on an accepted bid, contracts with a contractor for construction of the building.

The following chart outlines a typical DDC project design phase breakdown by percentage:

Design Phases	**Percentage of Design Completion**
Schematic Design	35%
Design Development	70%
Construction Documents	100%

02/A THE DESIGN PHASE

The Design process at DDC typically includes a robust Schematic Design phase (with three distinct stages); a Design Development phase, a Construction Documents phase, a Bid Package phase and Final Acceptance of the Construction Documents. In certain instances, a Pre-Schematic phase may be required for a project. As designated by the design delivery track, submissions to DDC are required to capture progress and demonstrate conformance to the project criteria. Submissions will be coordinated by the Core Project Team and reviewed by all owner stakeholders as applicable to the level of development. A Deliverables Checklist (by phase) is included at the end of this section. Detailed description of the deliverables is found in Section Z.

I. The Design Process

/a Pre-Schematic Design (if applicable)

A Pre-Schematic phase may be required for complex projects to further define a scope of work prior to Schematic Design. The Pre-Schematic scope may include programming, site investigations, site selection, zoning options, etc. When a Pre-Schematic Phase exists, the tasks and deliverables will be defined on a project specific basis.

/b Schematic Design Phase

The goal of schematic design is to establish an agreed upon integrated design direction that synthesizes approaches towards the project criteria, budget, program, elements, site/community context, civic design criteria and major design considerations. The importance of this phase cannot be overestimated. A fully vetted schematic design Preferred Option will provide a solid foundation for a successful project that is on time and on budget. The Schematic Design phase normally includes two interim submissions leading up to a final submission. Both interim phases and the final submission are submitted for DDC review.

/i. Opportunities And Constraints Phase (Interim I)

Prior to developing design options, the consultant must thoroughly analyze all project-specific opportunities and constraints. Immediately following project kick-off, existing condition surveys, probes and documentation collection should be initiated. It is critical to complete the existing conditions investigations in SD Interim I which are necessary to advance the project to the next phase.

During this phase, project risks and unknowns must be identified and evaluated against project scope, cost and schedule and presented to the Core Project Team. Strategies for mitigating risk should be discussed and agreed upon prior to advancing the project to the design options phase. For Submission requirements and Design Review information see Section 3000.02/A/III.

/ii. The Design Options Phase (Interim II)

Following SD Interim I, for track 1, 2 and 3 projects, the Schematic Design Interim II phase consists of a series of workshops (see Section 3000.02/A/II) that will culminate in consensus on a preferred design scheme. The SD Interim II workshops will be directed by the consultant and structured in a manner which identifies the key project issues and design decisions necessary to reach a Preferred Option and advance the project. For Presentation deliverables see Section Z04/A.

As applicable, key elements to resolve during the investigation of options include, but are not limited to:

1. Regulatory Compliance:

   If applicable, investigate alternative compliance paths which may impact function, project schedule, phasing, or construction elements.

2. Massing and Program:

   Investigate building and site layouts, stacking, adjacency, and circulation considering the following:

   a. The Consultant must avoid design approaches that require access agreements with neighboring properties, including but not limited to SOE requirements, roof access and underpinning (see Section Element A). The Consultant must provide at least one option that does not require an access agreement of any sort. Where such is unavoidable, the Consultant must provide an analysis which outlines the extent of the encroachments for review and approval by DDC.
   b. Impacts on the engineering systems, cost, construction and operational efficiency and security.
   c. Implications on sustainability goals, traffic, or visual impact to the neighborhood context as well as solar and wind exposure and flood risk.
   d. Points of access to the building and site for pedestrians, utilities, and vehicles.

3. Systems and Services:

   Investigate options for all major engineering and structural systems considering impacts on operations, maintenance, cost and existing construction, systems, and utilities, if applicable.

4. Building Envelopes:

   Investigate alternative facade and fenestration treatments and conceptual materials of major horizontal and vertical exterior elements. Consider impacts on operations, maintenance, cost and existing construction, systems, and utilities, if applicable.

The Preferred Option

At the conclusion of the workshop series a single design scheme must be selected that reflects the team's consensus on the key elements listed above. This Preferred Option will be submitted for design review. For Submission requirements see Section 3000.02/A/III. For Submission Deliverables see Section Z.

Conceptual Submission for Public Design Commission (PDC) may be required following this phase. For more information, see Section 1000.06, Regulatory Bodies.

/iii. Schematic Design Final

At the conclusion of the Schematic design phase the project must demonstrate a resolved and compliant design scheme and the beginning stages of systems coordination and material exploration. The Schematic Design Final submission for DDC represents a level of project development which can serve as the framework for submission to the Public Design Commission, if applicable.

For Submission requirements and Design Review information see Section 3000.02/A/III. For Submission Deliverables see Section Z.

Submission for Public Design Commission (PDC) and/or Landmarks Preservation Commission (LPC), depending on which is applicable, may be required following this phase. For more information, see Section 1000.06, Regulatory Bodies.

/iv. Public Building Major Design Considerations for Schematic Design

1. Design Approach

   The Consultant must establish a project framework based on the General Design Criteria outlined in Section 1000.01 of this guide. Establish project priorities utilizing the Project Performance Matrix (See Section Z.02/C)

2. Space Allocation (see Section 1000.01/E/I)
3. Regulatory Compliance Requirements (See Section 1000.06/A/II)
4. Adjacent Properties and Encroachment Requirements
   a. Whenever a project site shares a lot line with an adjacent property the consultant shall:
      i. Perform an analysis in Schematic Design Interim I which identifies all possible impacts to the adjacent properties, including but not limited to any work that requires:
      ii. access to the adjacent property to perform work during construction.
      iii. underpinning of the adjacent property's foundations.
      iv. "Support of Excavation" which may cross or impact the adjacent property.
      v. the installation of scaffolding and/or protection on the adjacent property during construction.
      vi. temporary egress through the adjacent property during construction.
      vii. new or remedial permanent work to be performed on the adjacent property, including below-grade tie-backs to be abandoned in place.

b. Develop at least 1 design option during Schematic Design Interim II which eliminates all such encroachment on adjacent property, or provide justification why no such reasonable option exists.

c. Take appropriate measures, in all cases, to minimize encroachments whenever possible, or provide justification why encroachments produce significant benefits to the project.

5. Scope and Budget Validation

a. At the outset of the project, it is strongly recommended that a design contingency be established by the Consultant that appropriately reflects the complexity of the project, degree of unknown conditions and risks and the design and construction excellence anticipated for the project. The established contingency must adjust to provide price consistency from Schematic Design through 100% Construction Documents. See Section 3000.02/A/II/b for Cost Estimating Requirements.

b. Within the project scope (for existing buildings), rectifying deficiencies related to code compliance or hazardous conditions must be prioritized.

6. Mitigating Project Risk

During the early design phase, the Consultant must prioritize performing all site Investigations (borings, probes, etc.), surveys and regulatory pre-approvals as possible to mitigate risk in the design and construction process as possible.

/c Design Development Phase

The process of advancing a scheme to Design Development must validate, develop, and refine the project, including all design elements, building systems, materials, details, equipment, maintenance and operational requirements, and life-cycle costs, demonstrating that all decisions are justifiable on the basis of function and value.

At the end of the Design Development Phase, all major design decisions are made final and design elements must be fully coordinated across all disciplines. Any open issues regarding zoning, code compliance, and neighboring property access should be resolved and if determinations from DOB are required for the proposed design, the Consultant must obtain written responses prior to submittal. The Design Development Technical Drawings must also include furniture and equipment layout plans to demonstrate the appropriate capacity, functionality and ADA compliance of the program spaces.

For Design Development submission requirements see Section 3000.02/A/III. For Submission Deliverables see Section Z.06

/i. Public Building Major Design Considerations for Design Development

1. Maintenance Considerations (See Section 1000.01/E/II)

2. Materials, Assemblies and Systems (See Section 1000.01/E/III and A to G)

3. Preparation for Public Bidding and Procurement

During this phase, the Consultant must start planning for DDC Bid and procurement by ensuring that materials and systems selected for the project and engineering services comply with the City's Procurement Policy Board Regulations and that the Contract Documents are formatted properly. The Consultant must also secure DDC approvals for any procurement exemptions, if necessary.

a. Proprietary Items

New York City Procurement Policy Board rules do not permit specifying sole-source proprietary items. This is to ensure that materials, products, and systems are fairly and competitively bid. Under limited circumstances, proprietary items

may be approved when it is determined, following exhaustive investigation, that a product cannot be sufficiently described in a performance specification, is required for circumstances such as upgrades or modifications to existing systems (such as a Roof or Fire Alarm), or is part of a system-wide standard required by the Sponsor Agency. Use of proprietary items requires prior approval from DDC. (see Section Z14/C)

b. Special Experience Requirements (SER)
City of New York Procurement Policy Board rules do not permit specifying experience requirements exceeding three years, however under limited circumstances, special experience may be required. SER is often justified for warranty requirements (such as for a Roof Installer), for historic experience (such as for a Mason on a landmark building), or for situations uniquely based on the project scope. All Special Experience Requirements require prior approval by DDC. (see Section Z14/D)

/d Construction Documents Phase

During this phase, the Consultant prepares final Construction Documents, including drawings and specifications, for regulatory approval and public bidding. Detailed design intent and regulatory compliance for all construction elements and assemblies must be demonstrated. The work of all required disciplines must represent an equally advanced level of development and must be coordinated with no room for unreasonable additional interpretation.

Final submissions to PDC or LPC must be made during this phase. Submission to the DOB is required prior to the 75% CD submission.

The project must begin to compile and arrange documents in anticipation of the bidding phase and for multiple contract construction projects, the documents shall clearly indicate separation of contract work among the various contracts. See Section 3000.02/B/I for more information about DDC Procurement.

There are two submissions required during this phase, the 75% CD submission, and the 100% CD submission. The 75% CD submission should be considered a complete draft of the Bid Set. The 100% CD documents shall include any changes, revisions, clarifications, additional information and new or revised details since the 75% CD submission and/or required to address and incorporate the review comments made on the 75% CD submission. Following the 100% CD submission, a conformed set of Construction Documents with all final comments resolved must be submitted for record.

/i. Public Building Major Design Considerations for Construction Documents

1. Detailing and Assemblies (See Section 1000.01/E/IV)
2. Delegated Design:
   Delegated design (which includes the delegating of design of elements and/or assemblies, which are part of the complete design, to the Contractor) is not permitted. The Architect/Engineer of Record must issue complete project designs as part of the base services agreement.
3. Engineering Services for elements in the complete design:
   If required, the Contractor may be permitted to provide supplemental calculations ("Engineering Services") verifying that the requirements of the Consultant's design are being met. Engineering Services calculations generally fall into two categories:
   a. Calculations that verify a submitted product or material meets the basis of design requirements. An example of this would be calculations for a curtainwall mullion to verify that it meets the design requirements, such as strength and deflection.

b. Detailing of common elements to industry standard requirements. An example of this would be detailing of a structural steel bolted connection per the requirements of AISC 360, Specification for Structural Steel Buildings.

In both cases, these calculations must work alongside the Contractor's shop drawings, sketches, and product data, and also be submitted for approval (see Section 3000.02/C/d.)

These Engineering Services must comply with the following requirements:

c. The Consultant must remain the Designer of Record (Architect of Record and/or Engineer of Record) and not delegate design responsibility to the Contractor.

d. The Consultant must review and Approve all the Engineering Services calculations proposed by the Contractor to verify full compliance with contract documents.

e. The specifications must provide all required performance, code and design criteria such that the Contractor is not required to make any design assumptions and has clear guidance for the calculations that are required.

f. The Engineering Services calculations must be approved by the Commissioner, Commissioner's Representative, Resident Engineer or Project Manager.

4. Engineering Services for temporary works during construction:

The Contractor is responsible for the design and engineering of temporary works necessary for execution of the Consultant's design. Examples of this include support of excavation, rigging, falsework and re-shoring, etc. For these scopes, the Contractor must retain an Engineer to design the temporary work. Note that this does not include temporary works that become part of the complete design, in which case the design responsibility falls to the Consultant (see item #3 above). For example, a secant pile wall that becomes a structural element of the final basement wall must be designed by the consultant, but lost falsework in a void cavity may be designed by the Contractor as a temporary work.

The following requirements for the design of temporary work must be included in the Contract Documents:

a. The Contractor must retain a Professional Engineer licensed in the state of New York to perform the engineering services for temporary works.

b. The Consultant must review all such temporary works designs provided by the Contractor to verify full compliance with all regulations and contract documents.

c. The Design must be approved by the Commissioner, Commissioner's Representative, Resident Engineer or Project Manager.

5. Logistics:

a. The project should be capable of being executed in a safe, effective and timely manner.

b. Swing Space, phasing and work restrictions must be thoroughly documented and scheduled.

6. Comprehensive Documentation:

a. All project scope design must be completely represented in the contract documents and may not be delegated to the Contractor.

b. Drawings and details must be legible, project-specific and coordinated across disciplines.

c. Design detailing must align with manufacturer requirements and be capable of achieving required warranties.

d. Specifications must be fully coordinated and vetted.

7. Constructability:
   The design and detailing for the project must consider ease of construction, appropriate sequencing, adequate and generous tolerances, and simplified coordination of trades.

/e The Bid Package Phase

DDC Design Bid Build construction contracts are awarded through a sealed competitive bid process, in compliance with State and local laws, through which the project is awarded to the lowest responsive and responsible bidder. It is not permissible for the Consultant to collaborate with the contractors to develop design intent prior to the bid. Therefore, the Consultant is advised that the success of the bid and award process, as well as the construction process itself, can be greatly enhanced through their efforts to produce bid documents that are clear, complete, and thoroughly coordinated.

All Competitive Sealed Bid projects are subject to Bid Package review after the DDC A+E Technical Review and prior to Final Acceptance of Construction Documents. It is mandatory that the Consultant follow the specific requirements for bid packaging and comply with all comments from the DDC Bid Packaging team to advance the project into the Bid/Award phase. To ensure a successful and efficient Bid Package review the Consultant must coordinate early and ensure all design decisions are made with procurement regulations in mind.

/i. The Bid Package

The Bid Package comprises of the Bid Drawing Set, Procurement requirements for bidders (via the City of New York's PASSPort system) as well as three distinct Contract Volumes listed below. The Consultant must review and be knowledgeable of the Information to Bidders, the Standard Construction Contract and the DDC General Conditions included in Volume 2 (provided by DDC) and provide all Technical Requirements for Volume 3. In addition, the Consultant must provide a cost estimate and, if applicable, a Proprietary Items List, Special Experience justification Approval and Requirements, and a Unit Price Schedule. (See Section Z/13 and Z14 for Bid Package deliverables.)

1. PASSPort procurement and Volume 1: Bid Booklet, including but not limited to, the following:
   a. MWBE Requirements
   b. Pre-Award process
   c. Project Reference Forms
   d. Construction Employment Report
   e. Bid Opening and Pre-Bid Walkthrough Information

2. Volume 2: Standard City Contract Documents, including but not limited to, the following:
   a. PLA (Project Labor Agreement)
   b. Information for Bidders
   c. Standard Construction Contract
   d. Prevailing Wage Schedule
   e. DDC General Conditions

3. Volume 3: Technical Requirements, including but not limited to, the following:
   a. Addendum to the General Conditions (See Section Z14/B)
   b. Technical specifications Table of Contents (See Section Z13)
   c. Technical specifications (See Section Z13)
   d. Appendix items as applicable (Geotechnical Report, etc.)

/ii. Major Design Considerations for Public Bidding

1. Technical Specification Instructions (TSI)

   It is the Consultant's responsibility to download, review and comply with the requirements in the latest version of DDC's Technical Specification Instructions (TSI), which will be provided by the DDC Project Manager. They include, without limitation, the Competitive Bidding Laws of the State of New York, the NYC Procurement Policy Board, Rules of the City of New York, and the DDC General Conditions. The TSI may be updated during the design process so the Consultant must ensure they are utilizing the most recent version.

   Accordingly, the project design and specifications shall:

   a. Permit maximum competition.
   b. For Multiple Prime Contracts (Wicks), permit the separate, competitive sealed bidding of each prime construction trade. (See Section 02/B below.)
   c. Clearly describe the City's requirements without favoritism toward any Contractor, supplier, or manufacturer, or to a supplier's goods and/or services.
   d. Emphasize functional or performance criteria. Requirements establishing the significant qualities related to type, function, in-service performance, physical properties, as well as other special features and requirements must always be clearly described in Part 2 of the specifications. It is important that functional/performance specifications are tightly written using acceptable commercial standards to help ensure the quality of the job.

2. Bid Alternates, Allowances and Unit Price Work

   Unless approved in writing by DDC, Bid Alternates, Allowances or Unit Price work may not appear in the Technical Specifications or the Drawings.

   a. Bid Alternates are not permitted for any Publicly bid projects.
   b. Unit Price Work is limited to specific DDC General Condition work items or as directed in writing by DDC for extra work. Unit Price Work, if applicable, would be included in the Consultant's Cost Estimate only.
   c. Bid Allowances must be approved in writing by DDC and pre-registered with each contract. Bid Allowances, if applicable, must be estimated in detail and included in the Consultant's Cost Estimate as a Construction Contract Allowance (see Section Z.07 for Cost Estimate requirements.)

/f Final Acceptance of Construction Documents

Following Bid Packaging review and approval, documents are transmitted to DDC Law. In order to receive Final Acceptance of Construction Documents and transition to the Bid/Award phase the following must occur:

1. DDC A+E must review the 100% Construction Document submission and issue a Project Advisory which recommends the project advance to Bid Packaging.
2. DDC Bid Packaging must review and approve the contract documents.
3. DDC Law must review and approve the contract documents.

II. Design Phase Management

/a Design Schedule

The Consultant is responsible for developing and maintaining the Design Phase Project Schedule, which includes the Design Schedule, the Design Schedule Narrative, and the Risk Register. The Design Phase Project Schedule will be updated and presented at every bi-weekly meeting and submitted for review monthly.

As part of each biweekly design meeting, the Design Consultant will provide the current schedule, identify upcoming activities, and clearly indicate any area where there is schedule slippage, or risk of delay. Should delays or schedule slippages be caused by the Design Consultant, DDC may require the Design Consultant to produce a recovery schedule and add additional resources to the project until the original Baseline dates are achievable once more.

See Section Z/08 for schedule requirements.

/b Cost Estimate

The Consultant must maintain an accurate and up-to-date accounting of estimated construction costs. Detailed cost estimates must be prepared by a professional (and preferably CMCI, AACE certified or equivalent) cost estimator and developed according to the requirements in Section Z/07.

The estimated project costs must be provided at each design submission (except Schematic Design Interim I), utilizing the DDC Cost Estimating Template, and must be provided at the same time as the other required deliverables (see Submission Checklist in Section 3000.02/A/III). The DDC Standard Construction Cost Estimate Template will be provided by the DDC Project Manager and is accessible via the DDC website. For a full outline of the Cost Estimate deliverable requirements refer to Section Z/07.

/c Project Meetings and Workshops

The following basic meetings and workshops are required for all projects. The DDC Project Manager schedules Project meetings and workshops. The minimum required meetings and workshops outlined below must include the Core Project Team (see Section 2000.02/A) and be indicated on the Consultant's schedule. Additional meetings or workshops may be required and include participants from the A+E Unit, ADA, Project Support or other Contracted Consultants (Section 2000.02), Percent for Art, the Community Board or group, LPC, PDC, Regulatory Bodies and representative from the Sponsor Agency.

It is strongly recommended that the Consultant work with the DDC PM to outline ALL bi-weekly meeting or workshop agendas, including but not limited to those listed below, at the beginning of the project and in conjunction with development of the project schedule. The outline agendas should include a list of required attendees/stakeholders, topics and/or issues to discuss and meeting outcome goals. Proper advanced planning for the design phase can ensure a project is delivered on time.

The Consultant is responsible for preparing and distributing the meeting minutes for all meetings or workshops during the Design Phase and must provide draft minutes within three days of the meeting or workshop. Once comments have been received from attendees, the Consultant must issue the final minutes to the Project Manager. See Section Z/03/A for meeting minute requirements.

/i. Design Kick-Off Meeting

Every project begins with an official Design Kick-Off Meeting. The Design Kick-Off Meeting is attended by the Core Project Team (see Section 2000.02) and other DDC team members as may be required. At this meeting important project requirements shall be discussed, including but not limited to:

1. Requirements of the Agreement.
2. Identification of responsibilities, expectations, contact information, and establishment of protocols for all stakeholders.
3. Project Intent including, but not limited to:
    a. Project Scope and Goals (as defined in the Front-End Planning Report and Major Design Considerations)

b. Commissioning. See Section 2000.02.
c. Sustainable Design and Resiliency goals. See Section 1000.03
d. Percent for Art, if applicable. See Section 1000.05

4. Design Phase management and submission checklist
    a. Project Tracking Forms
    b. BIM Execution Plan, if applicable
5. Sponsor Agency standards, if applicable
6. Project Construction Budget – the Basis of Design Fee
7. Design Schedule
8. Site Verification and Site Support. See Section 2000.02
9. MWBE Requirements
10. Design + Construction Excellence
11. Role of the A+E Team Leader
12. Thereafter, all the following phases will commence with a kick-off meeting that will lay out the expectations for that phase.

/ii. Bi-weekly Progress Meetings

Bi-weekly progress meetings are to be held at a location determined by the Project Manager and must be conducted throughout all phases. Required workshops may substitute for a bi-weekly meeting when appropriate.

At progress meetings, the Consultant is expected to make presentations to the Core Project Team (as required) which clearly identify issues, present options, and demonstrate progress, etc. The consultant is required to invite sub-consultants to discuss the appropriate phase of development for their scope of work and provide adequate advanced notice of presentation or technical topics to arrange for stakeholders and DDC team members to attend. These meetings are intended to facilitate constructive exchanges of information and decision-making to advance the project.

/iii. Schematic Design Interim II Workshops

A minimum of two SD Interim II workshops is required, however more may be needed. At least one workshop must be dedicated to reviewing an investigation of options and a second workshop to advancing feedback into a resolved scheme. The Consultant should invite relevant key personnel from their team and coordinate scheduling with the DDC PM a minimum of 7 ccds in advance so that the full DDC Core Project Team and relevant DDC and Sponsor Agency stakeholders, as applicable, can attend. During each workshop, time must be allocated for feedback and discussion. Following each workshop, the presentations must be shared, and time allocated (a minimum of 7ccds) for stakeholder review and feedback. Design decisions must be recorded in the Meeting Minutes or in writing.

1. Workshop 1: Investigation of Options

    The Consultant must present an SD Interim II Presentation (see Deliverables section Z/04/A) which includes a minimum of three options, with a cost estimate, for each key project element. Every option must demonstrate how it satisfies the:

    - Public Building and Project criteria.
    - Scope as outlined in the Front-End Planning Report

- Project budget (including a schematic cost estimate comparing each option)

2. Workshop 2: Preferred Design Scheme

   The Consultant must present a scheme which incorporates the feedback and decisions made following feedback from the Options workshop(s). The consultant must demonstrate that the preferred option satisfies the project criteria, scope recommendations as outlined in the Front-End Planning Report and project budget. The outcome of this workshop will be the basis for the SD Interim II submission.

/iv. Design Submission Page-Turn

A page-turn meeting consists of a review of documents at the time of submission by the Consultant and all pertinent sub-consultants in the presence of the DDC PM, the DDC A+E team and the Sponsor Agency team with all relevant stakeholders. Such reviews may take place virtually and should be held within 5 business days of the submission. A page-turn meeting is required for the Design Development and Construction Document Phase Submissions.

/v. Comment Reconciliation Meeting

Following Design Phase Milestone Submission reviews, the Consultant must schedule a comment reconciliation meeting with DDC to resolve open design issues. This meeting must occur following the Consultant/subconsultant review of the comments but may occur prior to them issuing their responses. All applicable subconsultants involved in the submission must be present at the meeting as well as applicable DDC and stakeholder reviewers (see Section III/b below for more details.)

/vi. Project Controls Workshops

1. Cost Estimate and Schedule Workshops

   Early in the Schematic Design Phase the DDC Project Manager will facilitate a Workshop to lay groundwork for the development of the cost estimate and schedule during the Design phase. During these workshops, the Project Team will review the DDC Cost Estimating Template, discuss assumptions in the project schedule, expected values and project-specific factors as they relate to the project scope and budget.

   The Consultant must document this workshop in meeting minutes and memorialize agreed-upon assumptions in the Basis of Estimate (BOE) sheet at each design submission.

   The agenda may include the following topics:

   a. The use of DDC Cost Estimating Template and its tabs.
   b. The latest DDC General Conditions document
   c. The standard DDC Construction Contract.
   d. The anticipated construction schedule.
   e. Key design features and potential cost-driving items not explicitly identified within the design documents.
   f. Class of cost estimate and gap analysis that details the expected level of scope definition, including specific discipline completion percentages.
   g. Risk Register.

h. Data sources and relevant historical cost data including escalation, sample labor rate calculation and wage rate sheets. Estimator's understanding of market conditions impacting bid costs.

i. Specific areas of change since the previous estimate including revisions made to address overruns identified in previous estimates.

Following each cost estimate submission, it may be necessary to conduct additional workshops to validate estimating and scope assumptions against budgeted project costs prior to value engineering or scope change requests.

2. Risk Register Workshops

An initial Risk Register will be developed during the FEP process and provided to the Consultant following project kick-off. During the design phase, a risk workshop will be held to validate and update the risk register to account for risks encountered or resolved following the FEP stage. For projects involving a CM, the CM will lead this workshop.

/vii. Interior Design Workshop/s (if applicable)

Held during the Design Development phase, the consultant must conduct interior design workshop/s as needed to present and gain approval on proposed interior design schemes for all significant program spaces. Presentation materials must include floor plans indicating finishes and furniture/equipment layouts for all specialty spaces such as lobbies, kitchens, laboratories, exercise rooms, open offices, conference rooms, reading rooms and the like; interior finish boards with actual materials and color selections; renderings or other visualization tools needed to adequately communicate the design intent; cut sheets or product descriptions and any other supporting materials as needed.

/viii. Bid Packaging Workshops

Held during the Design Development phase, these workshops will inform the Design Consultant and all its subconsultants of the specific DDC requirements for creating a compliant Bid Package. The Consultant and sub-consultants responsible for writing technical specifications must attend these sessions with the Bid Packaging team. Workshops will occur as often as mandated by the DDC Bid Packaging team. During these workshops, drafts of all bid package documents, including the technical specifications, may be submitted for preliminary review, as directed by the DDC Bid Packaging team.

Additionally, workshops related to the development of the specifications via e-Specs software will be required; these workshops will aid the consultant in troubleshooting and technical requirements needed to develop their specifications during the CD and Bid Packaging Phases.

/ix. Public Design Commission Workshop (if applicable)

These workshop/s will be held as needed to review materials required for submission to the Public Design Commission. Public presentations may also be required. The Consultant shall coordinate with the DDC Project Manager and Team Leader concerning all materials and information to be included in the presentation documents. See Section 1000.06/D.

/x. Percent For Art Workshops (if applicable)

Percent For Art requires a series of workshops early in the Schematic Design/Design Development Phase which includes a series of Artist Selection Panels and orientations. These workshops will be coordinated by DCLA in collaboration with the DDC Percent for Art Program. The Consultant will be responsible for presenting the design and potential options for the integration of new Artwork. See Section 1000.05/C for more details about these meetings.

/xi. Sustainability and Resiliency (if applicable)

For projects required to register with LEED the following workshops are required to be coordinated with the Office of Sustainability, Commissioning and Resiliency (OSCR) at DDC early in the Design phase. See Section 1000.03/D for more details about these meetings.

1. Integrative Process Workshop during Schematic Design Interim I
2. Environmental Design Workshop during Schematic Design Interim II

/xii. Commissioning Meetings (if applicable)

1. Design Phase Commissioning Kickoff Meeting
   The Consultant shall participate in a Design Phase Commissioning Kickoff Meeting prior to the final Schematic Design Submittal. At this meeting, the Commissioning Agent will present an overview of the commissioning process to the team. This meeting may be an allocated portion of a biweekly progress meeting.
2. Owner's Project Requirements (OPR) Development Meeting
   The DDC PM will schedule this meeting early Design Development to gather any outstanding information required from the Sponsor Agency to complete the OPR.
3. Monitor-Based Commissioning Meeting (if applicable)
   Held during Design Development phase, at this meeting, the Consultant, his/her LEED Consultant, and the Commissioning Agent will present the requirements for the monitoring-based commissioning program. The Sponsor Agency will provide feedback to clarify their expectations and capabilities to support monitoring-based commissioning. The CxA will then provide a monitoring-based commissioning plan and the Consultant shall ensure that the final design supports the plan.

/d Furniture and Equipment Support

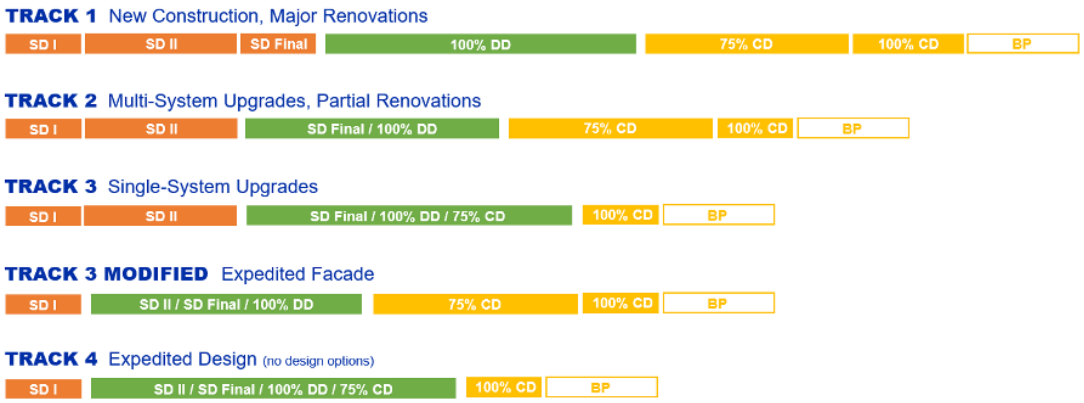
For all projects, furniture and equipment test fits are required to validate room sizes, functionality and, in some cases, book/media layout. The consultant is responsible for preparing Furniture Layout Plans to be presented for discussion and approval by the DDC and the Sponsor Agency in the Interior Design Workshops and included in the DD submission. Loose furniture and equipment purchase is not included in the General Contractor's bid.

When Furniture and Equipment Support Expanded Services are identified in the Task Order, or requested by DDC via Supplemental Task Order, the consultant will facilitate the furniture selection from a list of vendors provided by the Sponsor Agency and prepare a schedule (see and cost estimate (see Z/06) for use by the Sponsor Agency. Furniture and Equipment Support Expanded Services include limited responsibilities in during the Construction Phase as well, see 3000/02/C/II/e.

III. Design Phase Submissions

/a Design Delivery Tracks

To expedite the design schedule for projects which constitute limited or less complex scopes of work, projects may follow a more streamlined submission schedule. In the Front-End Planning Report, each project will be assigned to follow one of five design delivery tracks. Regardless of the assigned design delivery track, design phases must proceed according to the criteria outlined in section 3000.02/B/1 above. All projects require a thorough Schematic Design Interim I submission.



/i. TRACK 1

For new construction, major renovations, and additions. Track 1 includes all phases with 6 submissions: Schematic Design Interim 1; Schematic Design Interim 2; Schematic Design Final; Design Development; 75% Construction Documents; and 100% Construction Documents.

/ii. TRACK 2

For complex building system upgrades involving more than one system, such as building envelope or HVAC system reconstruction/rehabilitation. This track includes 5 submissions: Schematic Design Interim 1; Schematic Design Interim 2; a combined Schematic Design Final and Design Development submission; 75% Construction Documents; and 100% Construction Documents.

/iii. TRACK 3

For simple building system upgrade projects. This track includes 4 submissions: Schematic Design Interim 1; Schematic Design Interim 2; a combined Schematic Design Final, Design Development submission and 75% Construction Documents; and 100% Construction Documents.

/iv. TRACK 3 MODIFIED (EXPEDITED FAÇADE)

For envelope remediation projects. This track is for projects where investigative probes will not be conducted during the Design Phase. The consultant will be responsible for developing remediation details (typical and specific) based on visual observation and available documents. Scope of uncertain quantity or extents will be bid based on unit prices. Design assumptions will be confirmed and adjusted as necessary when the awarded GC makes probes during the first phase of construction.

This track includes 4 submissions: Schematic Design Interim 1; a combined Schematic Design Interim 2 (if required), Schematic Design Final and Design Development; 75% Construction Documents; and 100% Construction Documents.

/v. TRACK 4

For projects with limited scope. In this very expedited track, there will be 2 submissions: Schematic Design Interim 1; followed by a combined Schematic Design Final, Design Development, 75% and 100% Construction Documents submission.

/b Design Submission Checklist

The chart below is a general illustration of submission requirements for Track 1 Design-Bid-Build projects. For other Delivery Tracks outlined in the Section above, submissions must include the applicable deliverables of all combined phases. For example, the Track 2 combined Schematic Design Final/Design Development submittal includes all items listed under both 1.0 SD Final and 2.0 DD unless otherwise agreed upon by the Core Project Team.

Submission Checklist For description of submission deliverables listed below see Section Z of the guide	00 Pre-Schematic	0.1 SD Interim I	0.2 SD Interim II	1.0 SD Final	2.0 DD	3.0 75% CD	4.0 100% CD	5.0 Bid Documents
REPORT								
Z.02 Project Tracking Report								
Project Description Form	•	•	•	•				
Program Matrix		•	•	•	•			
Project Performance Matrix	•		•	•	•			
Elements Approach Form	•			•	•			
Exceptions Report (as applicable)		•	•	•	•	•		
Regulatory Approval Matrix				•	•	•	•	
APPENDIX								
Z.03 Communication Records								
Meeting Minutes	•	•	•	•	•	•	•	
SD Interim II Record Documents			•					
Sponsor Initiated Scope Change	•	•	•	•	•	•		

Submission Checklist (Continue) For description of submission deliverables listed below see Section Z of the guide	00 Pre-Schematic	0.1 SD Interim I	0.2 SD Interim II	1.0 SD Final	2.0 DD	3.0 75% CD	4.0 100% CD	5.0 Bid Documents
DDC Underpinning/ Access Agreement Approval				•				
Z.04 Presentations								
SD Interim II Workshop Presentations			•					
Models					•			
Renderings					•			
Materials					•			
Z.05 Engineering Deliverables								
Preliminary Engineering Calculations					•			
Final Engineering Calculations						•		
Engineering Reports				•	•			•
Utility Company Letters					•	•		
Z.06 TECHNICAL DRAWINGS		•	•	•	•	•	•	•
Z.07 COST ESTIMATE	•		•	•	•	•	•	•
Z.08 DESIGN SCHEDULE	•	•	•	•	•	•	•	
Z.09 ADA COMPLIANCE (Project Tracking Forms, Drawings, Specifications)	See section 1000.02/C/III for checklist							
Z.10 SUSTAINABILITY AND RESILIENCY REPORT	See section 1000.03/C/II for checklist							
Z.11 COMMISSIONING								
OPR				•	•			
BOD				•	•			
Z.12 HAZMAT DOCUMENTATION				•		•		
Z.13 SPECIFICATIONS					•	•	•	•

Submission Checklist (Continue) For description of submission deliverables listed below see Section Z of the guide	00 Pre-Schematic	0.1 SD Interim I	0.2 SD Interim II	1.0 SD Final	2.0 DD	3.0 75% CD	4.0 100% CD	5.0 Bid Documents
Z.14 BID DOCUMENTS								
Multiple Contracts/Wick's Law						•	•	•
Addendum to the General Condition								•
Proprietary Items List and Approval						•		•
Special Experience Requirements						•		•
Unit Price Schedule								•
Z.15 BIM MODEL				•	•	•	•	•
Z.15 CAD DRAWINGS					•	•	•	•

/c Design Submission Review and Comment

/i. Design Phase Milestone Review Comments

Upon submission intake, the deliverables are reviewed against the submission checklist for completeness. Incomplete submissions will be returned to the Consultant or held from review until all deliverables are submitted. The Consultant will be responsible for schedule delays incurred by incomplete submissions.

Following acceptance of the submission, the Core Project Team and applicable stakeholders shall conduct a thorough review of the deliverables and provide the Consultant with written comments. within 21 ccds from receipt of a complete submission.

At the end of the review period, the DDC Design Review Team will issue a Project Advisory that recommends whether the project is at the appropriate level of development to proceed or if a full or partial resubmission is recommended. The Project Advisory compiles evaluations across disciplines with respect to code and regulatory compliance, whether there are major discrepancies, risks, or scope omissions, and if the current submission reflects the incorporation of the previous comments. The summary may also identify specific areas of concern requiring immediate attention. The Consultant will be responsible for schedule delays incurred by resubmissions resulting from underdeveloped documents, unacceptable noncompliance and/or significant discrepancies, risks or scope omissions for the milestone and prepare a recovery plan indicating how the original schedule will be maintained. Following return of the submission, the Consultant responses are due in 14 ccds.. A comment review reconciliation meeting must be scheduled to facilitate the resolution of any open design issues and comments. The Core Project Team (2000/02/A) shall determine the most effective timing for the reconciliation. In situations where deficiencies are extensive in one or more discipline, it

may benefit the project to hold this meeting as soon as possible.(See section II/c/v above for specific requirements.)

Notwithstanding any of the above, the Consultant shall proceed to the next phase according to the Project Schedule. Any corrections shall be made concurrently to the work needed to keep the project on schedule with no additional time allowed.

The DDC review will be conducted utilizing collaborative, cloud-based software, such as Bluebeam, available to the Consultant team as a free download. The Consultant is required to utilize the system in the design review process.

/ii. Bid Packaging Review Comments

Utilizing a similar methodology, DDC's Bid packaging team will participate in design review of the Consultant's Construction Document Phase Milestone submissions, starting with the 75% CD submission, to help the Consultant prepare for the Bid Packaging submission.

Formal submission to the Bid Packaging Unit may occur simultaneously to the 100% Construction Documents or thereafter. The Bid Packaging Unit will review the Bid Documents and Specifications and provide comments. Once the Consultant receives comments on their Bid Package from DDC they must respond with a complete resubmission, addressing all comments, within 10 business days, unless otherwise directed by DDC.

The Design Completion milestone is achieved with the successful completion of the Bid Packaging review and formal approval of all Bid Documents. At this point, the final Bid Package will be forwarded to DDC ACCO and DDC Law for Design Completion.

/iii. Commissioning Review Comments

The Commissioning Agent will participate in design reviews of the Consultant's Design Development and Construction Document Phase Milestone Submissions along with the DDC and Sponsor Agency. The Consultant shall respond, in writing, to all comments from the Commissioning Agent and incorporate their comments into the design documents. For LEED projects, the Consultant shall be responsible for formatting the comment responses for upload to LEED Online. Commissioning review comments shall be integrated into the Design Documents as required until all review comments are closed by the Commissioning Agent.

The commissioning review is intended to comment on system functionality and control, instrumentation, energy performance, water usage performance, access and maintainability, sustainability, and indoor air quality impact. Other areas of comment may include constructability, cost efficiency, LEED compliance, document clarity, and clarity of scope. See Section 1000.07 for commissioning project requirements.

02/B THE BID/AWARD PHASE

I. Bid and Award Procurement

/a Single Contract or Multiple Prime Contracts

Bids may be procured as either Single Contract or Multiple Prime Contract Projects. The Procurement method will be determined during the Front-End Planning process. The Consultant must prepare the appropriate documentation during design.

The following table lays out which projects can be bid as Single Contract, and which projects must be bid as Multiple Prime Contract:

<table>
<tr><th colspan="4">Question 1: How much does this project cost?</th></tr>
<tr><td colspan="3">Above $3 million</td><td>Below $3 million</td></tr>
<tr><th colspan="4">Question 2: Where is this project located?</th></tr>
<tr><th colspan="2">City Owned Property</th><th rowspan="2">Non-City Owned Property</th><th rowspan="2">City Owned Property</th><th rowspan="2">Non-City Owned Property</th></tr>
<tr><th>Renovation</th><th>New Building</th></tr>
<tr><td>RENOVATION PLA:

Format all documents as one single contract.*</td><td>NEW CONSTRUCTION PLA:

Format all documents as one single contract.

A Feasibility Study will be required to establish the applicability of project to the PLA. Determination should be established prior to the Construction Document Phase to avoid delays.</td><td>MULTI-CONTRACT WICKS:

Format all documents as 4 separate contracts as follows:

Contract #1: General Construction
Contract # 2: Plumbing
Contract #3: HVAC & Fire Protection
Contract #4: Electrical</td><td colspan="2">REVISED (SINGLE CONTRACT) WICKS:

Format all documents as a single contract.*,**</td></tr>
</table>

* DDC Policy requires all City Owned projects with estimated costs equal to or above $2.5 million to bid as Renovation PLA, in case bids come in higher than expected (ie- above $3 million).

** DDC Policy requires all Non-City Owned projects with estimated costs equal to or above $2.5 million to bid as Multi-Contract, in case bids come in higher than expected (ie- above $3 million).

1. The first factor in determining whether the project will be bid as Single Contract or Multiple Prime Contract is the cost. If the estimated project cost is less than $3 million, the project will be bid as a Single Contract, regardless of location.
2. If the estimated project cost exceeds $3 million, the next step is to determine whether or not it is located on City-Owned property.

    a. If the project is located on City-owned property and the cost of the project exceeds $3 million, the project may use the Project Labor Agreement (PLA) and bid to a Single Contract, as long as meets the criteria below. There are currently two types of Project Labor Agreements:

        i. The PLA for Renovation
        If the project involves the renovation of an existing building or structure, the project will be bid using the PLA for Renovation.

        ii. The PLA for New Construction
        If the project consists of building an entirely new structure, the project may be bid using the PLA for New Construction, assuming that the Project Team has conducted a Feasibility Study that has been approved by DDC ACCO and other City agencies.

        Whereas renovation projects can use the PLA automatically, new construction projects must first be approved for PLA (and subsequently, for Single Contract) bid.

    b. If a project is located on Non-City Owned property, it cannot be bid using the PLA, and must be bid using Wick's Law. Projects with costs that exceed $3 million must bid as Multi-Contract Wick's Law, which separates out the four

major trades (General Construction, Plumbing, Mechanical and Electrical Work). There are 2 types of Wicks Law Projects:

i. Revised Single Contracts
Used for projects whose total budget will be less than $3 million.

ii. Multiple Prime Contract Projects
The threshold is $3 million; however, similar to the PLA, if a project is estimated to cost at least $2.5 million, it is anticipated that the bids may come in at or above $3 million. As such, it is recommended for projects estimated to cost at least $2.5 million to anticipate bidding to Multiple Prime Contracts.

3. The DDC Project Manager and Team Leader will establish with the Consultant if the project should be prepared as a Multiple Prime Contract Project or a Single Contract Project. For Multiple Prime Contract Projects, or where applicable, adherence to Wick's Law requires that the Consultant prepare separate sets of drawings and cost estimates for four separate contracts. The specifications must be inclusive of all contracts but may reference the four separate Prime Contractors. The specifications and Table of Contents must organize the sections as per separate contract. (Coordinate with DDC PM for latest version of drawing and table of contents for Multiple Prime Contract Projects). These documents, unless directed otherwise by DDC PM, must be organized as follows:
    a. Contract #1: General Construction work, including site work and vertical transportation.
    b. Contract #2: Plumbing work, including standpipe system, if required.
    c. Contract #3: Heating, Ventilating, Air Conditioning, and Fire Protection work, including sprinkler systems, as well as combined standpipe system, if required. Note: The sprinkler system work, which is part of Contract No. 3, must be shown and detailed on drawings separate from all other work within that contract.
    d. Contract #4: Electrical work, fire alarm, data & telecommunications systems, A/V systems.

/b Open Competitive Bid vs. Pre-Qualified List (PQL) Bid

Bids may be procured to either the general public (as an open competitive bid) or to a select group, or list, of Pre-Qualified bidders. The Consultant must coordinate with the DDC PM to determine how the project will be procured in order to prepare the appropriate documentation.

Bids procured to the general public may require additional Special Experience requirements for the prime bidder(s). Special Experience requirements must be approved by DDC Law and DDC ACCO, and the Consultant will be required to provide appropriate justification.

Bids procured to a Pre-Qualified List (PQL) of bidders will take the place of Special Experience requirements for the prime bidder(s). Since the bidders here have already been vetted and approved to work on City projects, the Bid and Award Phase may be significantly shorter. Pre-Qualified Lists may be for work on roofs, landmark buildings, or general construction projects (or others as may be applicable). The DDC PM, working with the Project Team and Consultant, will decide which PQL is applicable to their specific project.

In order to bid to a PQL, the DDC PM must seek approval from DDC ACCO. At this time, the DDC PM may require certain documents from the Consultant, including the cost estimate and detailed project description.

II. Bid and Award Management

During this phase, the Consultant will interpret plans and specifications when requested by DDC in response to inquiries by prospective bidders and prepare all necessary addenda and drawings required for the clarification of plans and specifications. Such documents will be issued through DDC. The Consultant is obligated to participate in the following manner:

/a Pre-Bid Meetings

The Consultant will attend Pre-Bid Meetings to answer questions from bidders and to assure that all parties clearly understand the intent of the Contract Documents. Pre-Bid Meetings are held at the project site to ensure that all bidders become familiar with existing conditions. Agenda items include highlights of the contract emphasizing any unusual work.

/b Addenda

Addenda drawings and specifications must be produced by the Consultant as required in response to Contractor questions and requests for information arising during the Pre-Bid Meeting or as otherwise necessary for the clarification of the Bid Documents. The Consultant must submit all addenda, including revised drawings and specifications, in a timely manner, to the DDC Project Manager and the DDC A+E Unit for review and approval. The DDC Project Manager will inform the Consultant of all format requirements, including the specific addendum number.

/c Bid Opening and Evaluations

Once bids are received, the Consultant will assist in the analysis and evaluation of bids and within three calendar days of the bid opening make written recommendations and reports on the disposition of bids and the award of Contracts. The Consultant will also assist in the review and evaluation of special experience qualifications of the contractors and/or subcontractors proposed by the Prime Contractors.

/i. Bid Tabulation Analysis

The Consultant shall attend the Bid Opening and review the Bid Tabulation available at the end of the Bid Opening to assist in discovering any bid anomalies.

/ii. Special Experience Requirements (if applicable)

The Consultant shall assist in the review and verification of the special experience qualifications submitted by the Contractor and/or proposed subcontractor. Qualifications for the Prime Bidder(s) shall be determined at the time of bid; qualifications for sub-contractors and manufacturers shall be after award. (See Bid Packaging in Section 02/A above for Special Experience Requirements applicability.)

/d Pre-Award Meeting

The Consultant is required to attend a Pre-Award Meeting with the Contractor(s), the Sponsor Agency representative and members of the DDC Project Team. At the Pre-Award meeting, the Consultant shall answer questions and provide additional support and analysis in the understanding of the intent of the Contract Documents.

/e Filing and Signature

The Consultant must sign and seal all necessary drawings and send regulatory agency approvals to the DDC Project Manager. All regulatory approvals must be achieved prior to the project going out to Bid. Changes to any approved regulatory drawings must be prepared and filed by the Consultant. Changes to the Landmarks Preservation Commission will be filed by DDC. Changes that require approval by the Public Design Commission will be filed by the Consultant at the direction of the DDC Public Design Commission Liaison.

/f Issue for Construction Set
The Consultant shall assemble and submit a complete set of Construction Documents that incorporates all addenda, RFI responses, sketches.

/g Design BIM Model
The Design BIM model must be updated to include all addenda or changes to the contract documents and issued to the DDC PM at Award. See Section Z/15 for BIM model requirements at Bid/Award.

02/C THE CONSTRUCTION PHASE

I. Construction Phase Process

The Construction phase begin when the DDC issues a Notice to Proceed to the General Contractor. The Design Consultant's primary goal is to validate that the project is constructed in compliance with the Contract Documents and to protect the interests of the city. The Design Consultant will attend regular project meetings, interpret and issue clarifications or revisions to the Contract Documents as required, review submittals, review and document the progress of the work, update regulatory approvals and facilitate project close-out.

II. Construction Phase Administration

The Design Consultant is a critical partner providing Construction Administration services through oversight and participation as outlined below.

/a The Contract Documents
The Consultant is responsible for interpreting the Contract Documents, providing clarifications, and making recommendations, by drawing and in writing, in response to Requests for Information (RFI's) or as deemed necessary to clarify the project.

/i. Supplementary Drawings and Bulletins

The Consultant shall promptly prepare any supplementary drawings that may be necessary for clarifying the contract documents. Supplementary drawings are to be sealed and signed by the Consultant or the sub-consultant, as appropriate, and shall be issued to DDC as a Bulletin. All such issuances shall be recorded in a log by the Consultant.

If additional filings with regulatory agencies are required as a result of Bulletins, the consultant will proceed with the procurement of any necessary approvals so the work can legally proceed.

/ii. Resolution of Design Errors or Omissions

If the DDC or the Contractor identifies Errors or Omissions in the Contract Documents, the Consultant shall promptly submit to DDC any necessary correspondence, supplementary or revised drawings, specifications, negotiated cost estimates and any other documentation or coordination material to resolve the design error or omission.

Upon approval of the required changes by DDC, the Consultant shall promptly provide documentation necessary to execute the work as a Bulletin, and issue to the DDC CPM. All such issuances shall be recorded in a log by the DDC and the Consultant.

/b Site Visits and Field Inspection Reports
A site visit walk-through must be conducted bi-weekly (in certain instances, monthly at a minimum), so that the Consultant can appropriately monitor the completion of the work in accordance with the standards of care and quality set forth by the Construction Documents, and promptly provide a Field

Inspection Report to DDC documenting any deviations which impact ability to comply with industry standards, best practice, regulatory approval and/or impact completion of the work.

The content of the Field Inspection Reports is essential to assuring the quality of the construction work being installed. Detailed observations on current work, field conditions, connections, clearances and Contractor capability will assist the DDC Construction Project Manager in quality control efforts. The Field Inspection Report is the vehicle by which the Consultant is empowered to assure that ongoing construction work complies with the design intent, details, and specifications, which form the basis of the Contract Documents.

Field Inspection Reports record a specific time at the project site. Documentation must be clear, detailed and accurate since it will become a component of the official project record.

1. The Consultant must use the DDC Field Inspection Report Template (or the AIA standard G711) template. See Section Z03/C for deliverable requirements.
2. The Field Inspection Reports are to be prepared by members of the Consultant team who are thoroughly familiar with the project.
3. The Field Inspection Reports are to be submitted in writing to the DDC Construction Project Manager within five working days of the site visit. This will enable the DDC Construction Project Manager to address the issues identified in the reports at the next project site meeting.

/c Project Meetings and Workshops

/i. Regular Project Meetings

The Consultant is required to attend all project meetings in person, unless otherwise agreed to by DDC. These required meetings include the Construction Kick-off (Pre-Construction) meeting, Bi-Weekly site meetings, Commissioning Kickoff Meeting, and other commissioning meetings, performance tests as required, and all meetings related to the interpretation of the Construction Documents. Sub Consultants, as deemed necessary by the DDC Construction Project Manager and/or the Design Consultant, are also required to participate in the relevant portions of such meetings.

The DDC CPM, or CM, will prepare the meeting agenda and conduct the job site meetings.

The Design Consultant, or CM when applicable, will prepare and distribute the bi-weekly job site meeting minutes (see Section Z.03/A) within three working days of the meeting.

The DDC CPM shall distribute the minutes to all meeting attendees and others as identified.

/ii. Environmental Construction Workshop

For projects required to register with LEED this workshop is required to be coordinated with the Office of Sustainability and Resiliency and Commissioning (OSRC) at DDC prior to, or at the minimum within 30 CCDs following the start of Construction. See Chapter 1000.03/D for the specific requirements for the workshop.

/d Review of Project Progress Documents and Submittals

The Consultant shall receive submittals directly from the DDC CPM for review and approval. The Consultant shall review, approve, and distribute submittals per procedures described in the General Conditions. If applicable, submittal review shall be coordinated with the Commissioning Agent, LEED Consultant and other subconsultants as required. The Consultant shall incorporate all sub-consultant comments into their response to the Contractor within one document for distribution. During the review of progress documents and submittals, the Consultant shall make no changes to the design or changes causing additional cost or project duration without prior written approval from DDC.

/i. Contractor Coordination Documents

The Consultant shall review the Contractor's coordination documents and promptly report in writing to the DDC Construction Project Manager (CPM) on issues relating to achieving the quality of work specified in the Contract Documents.

/ii. Submittals (shop drawings, mock-ups, cut sheets and samples, etc.)

1. The Consultant shall present the Submittal Requirements from the General Conditions to the Contractor at the Construction Kick-off (Pre-Construction) Meeting.
2. The Contractor submits a Submittal Schedule and updates the Submittal Schedule every two weeks. The DDC CPM will issue the Submittal schedule to the Consultant for review and comment. The Consultant will review and verify:
    a. The list of submittals is complete and titles are in accordance with the specifications
    b. The submittals are scheduled appropriately in relation to the approved Construction Schedule
3. The Consultant shall maintain a Submittal Log that includes the submittal title and number along with the date of submittal receipt and date of return with comments and disposition. The log shall also include any resubmission/s and shall note the date of final acceptance along with other pertinent information.
4. The Consultant shall act promptly and systematically to check all shop drawings, materials samples, and items exhibited in mock-ups to determine if the submittals are in accordance with the Contract Documents and specifications.

/iii. Commissioning Submittals

The Consultant shall coordinate the review of Contractor submittals with the Commissioning Agent, prior to approving submittals. Commissioning Agent will review for conformance with Design Documents, and adherence to the requirements documented in the OPR and BOD. The Consultant shall incorporate the commissioning comments into their response to the Contractor.

/iv. LEED Documentation

For all LEED projects, the Consultant shall review all LEED submittals, provide guidance as required, and assist in uploading the proper documents to the USGBC.

/v. Engineering Services Submittals

The Consultant is responsible for is reviewing all Contractor provided Engineering Service means and methods submittals and, as the Engineer of Record, assuring that the documents reflect the design requirements and professional standards required for the project. See Section 3000.02/A/d/i for more information.

/vi. Schedules of Values

The Consultant shall promptly examine, recommend adjustments to, or approval of, the schedules of values and the level of completion submitted by the Contractor. The Consultant shall issue their recommendations to the DDC to assist in establishing a reasonable basis for subsequent partial payments to Contractors.

/vii. Change Orders

On an as-needed basis, the consultant is to assist DDC in determining if PCOs (Potential Change Orders) are complete and valid claims as additional scope of work.

/viii. Special Experience Qualifications

The Consultant is responsible for reviewing the qualifications for any Special Experience Requirement subcontractors and ensuring that the qualifications meet the requirements included in the specifications. See Section 3000.02/A/e for more information.

/ix. Percent for Art Support

For Consultant obligations related to the Percent for Art program see section 1000.05/C/II

/e Owner Development Support

/i. Commissioning

Consultant shall provide support for commissioning activities during construction and in resolution of issues with the Contractor by providing prompt clarification as required. The Consultant must ensure that the commissioning agent is included in the distribution of information and aware of any and all updates to the Contract Documents for coordination with testing procedures.

/ii. Operations and Maintenance Manuals

The Consultant shall coordinate the review of Operations and Maintenance Manuals with the Commissioning Agent, prior to acceptance. Commissioning Agent will review for accuracy and completeness of manuals. The Consultant shall incorporate commissioning comments into their response to the Contractor.

/iii. Furniture and Equipment Support

When Furniture and Equipment Support Expanded Services are included in the Consultant's Task Order, the following are required:

1. Site Visit

   Two weeks prior to delivery of furniture, the Consultant shall conduct a site visit to survey the conditions along the full path of the delivery. The Consultant shall identify problems such as unfinished ceilings, unpainted walls, and missing electrical work or other issues where the condition of the construction work could prevent delivery; or disturb or damage installed furniture. The consultant must notify DDC immediately if any such issues are found.

2. Location of all Furniture and Equipment

   The Consultant shall verify that all furniture and equipment is placed in the correct room and in the proper location as per furniture plans.

/f Construction Close-Out

/i. Regulatory Approval, Coordination and Sign off

The Consultant shall obtain any approvals from regulatory agencies and utilities for any and all supplementary drawings required to update the original approved set to match built conditions. A complete set of the approved project documents from all regulatory agencies must be submitted to DDC. The consultant is responsible for obtaining all final sign-offs from regulatory agencies. See Section 1000.06: Regulatory Bodies for more information.

/ii. As-built documents

The Consultant must review the As-built documents provided by the DDC PM and Contractor for accuracy and completeness. The Consultant shall coordinate review with the appropriate sub-consultants, Commissioning Agent and LEED consultant as required. The Consultant shall

incorporate all sub-consultant comments into their response to the Contractor within one document.

/iii. Construction Punch List

At Substantial Completion the Consultant shall participate in the preparation of Construction Punch Lists. The Consultant shall submit a list of items for the Punch List to the DDC Construction Project Manager within ten working days of the request of such a list. This list of items shall be based on a final site visit and Field Inspection Report, and on any unresolved problems that have been the subject of earlier reports or job site meetings. The Construction Punch Lists, prepared by the Consultant, the Contractor, and the DDC Construction Project Manager, will be compiled at a job site meeting and shall be part of the minutes of that meeting.

/g Scope Change Requests

Although discouraged, there may be instances where the scope of work for a project must change to accommodate conditions or circumstances discovered during Construction. At DDC request, the Consultant may be asked to assess additional scope requests from the Sponsor Agencies and determine the cost, time, and risks associated with implementation following DDC's Sponsor Initiated Scope Change Request policy (See Section 3000.01/A/3 above). This information will be used by DDC to determine the full implications of a proposed scope change.

03 CM-BUILD PROJECT DELIVERY

CM-Build involves a construction manager who takes on the building of a project. DDC contracts with a Design Consultant for design services under a separate contract. Along with DDC, the construction manager oversees project management and technical quality control from design through construction. Such management services may include reviewing and commenting on design documents to optimize construction, cost, quality, and schedule, creating a risk register, performing a constructability analysis, and conducting site investigations to identify site constraints that may impact scope, cost, schedule, or construction. In addition, for CM-build, the CM manages and procures subcontracts to implement construction activities and may phase construction work into packages.

03/A THE DESIGN PHASE

Unless otherwise noted below. The requirements for CM-Build delivery projects are the same as Design Bid Build delivery projects. See Section 3000.02 for Design and Construction Phase requirements.

I. The Design Process

/a The Bid Package Phase

DDC CM-Build construction contracts are subject to Bid Package review after the DDC A+E Technical Review and prior to Final Acceptance of Construction Documents however the Bid Packages are coordinated and bid through the CM-builder.

II. Design Phase Management

/a Design Schedule

The Consultant must submit the Regulatory Approval Matrix to the CM-Builder for review and comment and incorporate agreed upon revisions into the matrix and project schedule.

The Design Consultant must develop a risk analysis and work with the CM-Builder to develop a risk register.

/b Cost Estimate

The Consultant must utilize the cost estimating templates provided for CM-Build Delivery projects and participate in a cost estimate reconciliation process with the CM-builder at the Design Development phase kick-off.

III. Design Phase Submissions

/a Design Submission Checklist

If applicable, the Consultant must include a phasing plan which aligns with the CM-builders proposal for phased construction.

/b Design Submission Review and Comment

The CM-builder will participate in milestone Design submission Reviews to review the project for constructability alongside DDC A+E. The CM-builder will also participate in the comment reconciliation process.

03/B THE BID/AWARD PHASE

Unless otherwise noted below. The requirements for CM-Build delivery projects are the same as Design Bid Build delivery projects. See Section 3000.02 for Design and Construction Phase requirements.

I. Bid/Award Methods of Procurement

This section is not applicable for CM-Build Projects

II. Bid and Award Management

During this phase, the Consultant will interpret plans and specifications when requested by DDC and the CM-builder in response to inquiries by prospective subcontractors and prepare all necessary addenda and drawings required for the clarification of plans and specifications.

The Consultant will also assist in the review and evaluation of special experience qualifications of the contractors and/or subcontractors proposed by the CM.

This section is modified as follows for CM-Build Projects:

/a Pre-Bid Meetings
A formal pre-bid meeting is not applicable to CM-Build projects; however the Consultant must regularly work with the CM-Builder to answer questions and communicate intent of the Contract Documents throughout the design and bidding process.

/c Bid Opening and Evaluations
A formal bid opening process is not applicable to CM-Build projects; however, the Consultant must assist in the analysis and evaluation of bids provided by the CM-Builder and make written recommendations. The Consultant will also assist in the review and evaluation of special experience qualifications of the subcontractors proposed by the CM-Builder.

/d Pre-Award Meeting
A formal pre-award meeting is not applicable to CM-Build projects; however the Consultant must regularly work with the CM-Builder to answer questions and communicate intent of the Contract Documents throughout the design and bidding process.

03/C CONSTRUCTION PHASE

Unless otherwise noted below. The requirements for CM-Build delivery projects are the same as Design Bid Build delivery projects. See Section 3000.02 for Design and Construction Phase requirements.

04 DESIGN-BUILD PROJECT DELIVERY

In the Design-Build approach, DDC contracts with a single entity, the Design-Builder, for both design and construction services. The Design-Build teams are often led by a general contractor and include architects, engineers and other specialty consultants as required by the project scope.

The Design-Build delivery method at DDC has its own contract for the Design-Builder, which includes many of the same requirements outlined in the Design Consultant Guide with respect to design team responsibilities and public building criteria. DDC review of design submittals is conducted for alignment of the DB's contract requirement.

4000
PUBLIC BUILDING CONTRACTING REQUIREMENTS

01 CONTRACT TYPES

Virtually all the design and construction services required for the Division of Public Buildings' projects are contracted out. Construction is never done with in-house forces and design is done in-house only in rare instances.

Contracts define the work to be done, the time frame for performing the work, and the price to be paid for the completed work. Design consultant contracts are used to develop design of a project (based on a provided scope of work), and to produce the required construction documents.

Both consultant and construction contracts are used in two forms-project-specific contracts and requirements contracts:

1. A project-specific contract is intended for a particular project and is tailored to that project's scope, budget and schedule.

2. A requirements contract provides a particular type of service or work that is used on multiple projects. This contract type has a maximum dollar capacity and a contract term during which work can be initiated; the scope is defined broadly. A requirements contract is used on a particular project through a task order. A task order specifies the project's scope of work, time frame and not-to-exceed amount.

Both of the above contract types are organized similarly, consisting of an agreement, which contains the basic contract provisions that do not change, and a group of accompanying documents, the exhibits that define the scope of work, cost, duration, and other contract elements that vary from project to project. All consultant contracts are considered to include the RFP issued to procure the contract and the consultant's proposal.

01/A DESIGN CONSULTANT REQUIREMENTS CONTRACTS

The Design Consultant Requirements Contract is the base contract to be used for multiple projects. It describes basic design services and provides a fee curve to be applied on a project-specific basis. Once a scope of work for a specific project is established, a task order is generated on the existing requirements contract. Based on the specific project's estimated construction cost with complexity factor/s, the design fee is computed from the overall fee curve. This is the project's baseline budget and fee.

The detailed scope, schedule and design fee for a project are specified in the task order, together with allowances for Consultant services. The contract includes the Agreement and Exhibits which detail further contract requirements, provide the overall fee curve, MWBE requirements and reference the Design Consultant Guide.

There are three types of Design Consultant Requirements Contacts:

I. Architectural Design Contract

These contracts are for new construction, major renovations and CPSDs. They will have architecture firms as the prime contract holder.

II. Technical Design Contract

These contracts are for multi-system upgrades including scope such as envelope rehabilitation, historic preservation, landscape, or multiple engineering systems with complex coordination and/or phasing. They will have architecture firms as the prime contract holder.

III. Engineering Design Contract

These contracts are for non-complex single-system upgrades. They will have engineering firms as the prime contract holder.

01/B PERCENT FOR ART CONTRACT

If the project is selected for inclusion in the Percent for Art program, the design consultant subcontracts with the artist for design and production of the artwork. The artwork allowance will be added to the Consultant's scope of work through a Task Order and identified as an allowance in the Consultant's payment requisitions. The artwork allowance is calculated based on the capital budget for the project and is allocated as a lump sum amount that is paid out according to the Fee Schedule in the Percent for Art contract for the project. For sample Percent for Art Contract see Appendix.

01/C OTHER CONTRACTS

I. Other Consultant Contracts

/a CM Manage Project-Specific Contract or Requirements Contract
These contracts provide for a construction management firm to act as DDC's CPM overseeing a construction project and to provide certain pre-construction services, such as cost estimating and constructability review of design documents. For these projects, DDC holds the construction contracts. A CM Manage contract can be used to provide pre-construction services only, in connection with a project that does not otherwise involve a CM.

/b CM Build Project-Specific Contract
This contract type is used in special cases to provide pre-construction and construction services. The CM (rather than DDC) holds the contracts with various construction subcontractors, in compliance with Wick's Law when applicable, providing greater coordination and a single point of responsibility. Subcontracts are competitively bid to pre-qualified subcontractors.

/c Pass-Through Contract
This is a sole-source contract between a client institution and DDC in which the client institution is the contractor. There may also be a city agency (the sponsor agency) that funds and sponsors the client institution and the project. All other parties, including the architect, construction manager, builder, etc. are considered subcontractors to the client institution. DDC's role in a pass-through contract is essentially to monitor and expedite the project. Pass-through contracts usually have a minimum value of one million dollars.

/d Third-Party Inspection Requirements Contract
This contract provides engineering services to carry out the Third-Party inspections required by the NYC Building Code. The scope of work is based on the list of special inspections that are part of the design consultant's DOB filing.

/e Commissioning Requirements Contract
This contract provides specialized MEP and envelope engineering expertise in connection with commissioning building systems and envelope. The contract is administered by OSRC.

II. Construction Contracts

Public Buildings construction contracts are either project-specific or requirements contracts. When applicable, in compliance with the state's Wick's Law, there are separate contracts for each of the basic

work types-general construction, HVAC, plumbing and electrical. Please see Section 3000/B for more information.

/a Project-Specific Contract
This contract type is the one typically used for Public Buildings projects, particularly if the project involves most or all of the four basic work types. These contracts are competitively bid as lump sum contracts. Construction documents (plans and specifications) must be completely developed for each project.

/b Job Order Contract (JOC)
This requirements contract type is best suited to simple projects with limited scopes, generally with construction costs less than $1 million. The contract contains technical specifications and unit prices for a wide variety of construction work items, so it may not be necessary to prepare complete drawings and specifications for the project in order to define the scope of work. The project cost is determined by the pre-established unit prices and an overhead and profit factor.

/c Force Account Contract
A Force Account contract is usually associated with a project near subway and commuter rail lines. The railroad authority is paid from the project's funds for costs incurred by the railroad authority in protecting its property and operations from the adjacent construction activities. Force Account contracts are separate contracts with distinct registration numbers.

III. Safety and Site Support Contracts

Services available through contracts administered by the Technical Support Division include the following:

- Environmental
- Aerial Survey
- Land Survey
- Geotechnical
- Engineering Inspection
- Asbestos Abatement (unit price)
- Material Testing
- Air Sampling
- Bulk Sampling (hazardous materials)
- Borings (unit price)

02 PROJECT AWARD AND REGISTRATION

02/A NOTICE OF AWARD

I. Design Fee and Allowances

The design fee will be stipulated in the Notice of Award Letter along with the not-to-exceed amount for certain types of allowance services that are authorized in advance in writing. The following is a brief description of Consultant Allowances.

/a Staffing Plan Allowance
This allowance covers additional professional services by the consultant and its subconsultants. Payments for work performed under this allowance are based on hourly rates.

/b Reimbursable Services Allowance
This allowance covers services performed by someone else (other than the consultant and its subconsultants). The consultant is to procure these services according to DDC's direction (per the PPB Rules); payments may be lump sums, unit prices, hourly rates, etc.

/c Allowance for Artwork
This not-to- exceed amount is for the inclusion of artwork for the project, when applicable. The consultant will hire an artist as directed by DDC. For services in connection with the artwork, the consultant is entitled to a fee in the amount of five percent (5%) of the total actual cost of the artwork; payment is made on a lump sum basis.

II. Available Project Information

Available project information will be provided to the consultant at the Notice of Award. Any available information is for the consultant's reference only and must be independently validated by the consultant. Available information includes:

/a The Front-End Planning Report
For information on the Front-End Planning Report see Section 2000.01/A

/b The Major Design Considerations
The Major Design Considerations are intended to identify and emphasize special constraints or opportunities that will influence design choices from the outset of the project or to highlight any requirements of instructions to the design consultant that are of particular concern specific to a given project.

/c Existing Conditions, Templates and Project Tracking Forms
When available, existing conditions drawings will be made available. For Templates and Project Tracking Forms, see Section Z.02 and Appendix.

III. Identification of Subconsultants and MWBE Participation

The Notice of Award will include DDC's required M/WBE participation goals. The Consultant must identify all subconsultants and reimbursable services, as well as create the M/WBE Utilization Plan and

a Staffing Plan immediately upon receipt of the Notice of Award. In order for Design Phase services to begin promptly upon receipt of the registered Task Order and Notice to Proceed, all documentation required in the Notice of Award letter must be received and approved by DDC.

02/B THE TASK ORDER

Project work is assigned through task orders and each task order is written for a specific scope of work, and specific dollar value and time duration. It establishes the not to exceed amount and duration for the project work, sets the final values for the task order's allowances, and includes information on start dates, payment methods, etc. The task order is used to register the scheduled funds for the project. A consultant mav not perform services on a requirements contract until it is issued a registered task order. Task orders are modified by supplemental task orders (not change orders or time extensions).

02/C NOTICE TO PROCEED (NTP)

Following registration and the determination of a task order's start date, the DDC DPM will issue a Notice to Proceed (NTP) letter for original task orders; this letter (if applicable) and a copy of the registered task order are distributed to the consultant. Once a Notice to Proceed is issued the Consultant is authorized to begin Design Phase services.

THE ELEMENTS OF PUBLIC BUILDINGS

A SUBSTRUCTURE

B SHELL

C INTERIORS

D SERVICES

E EQUIPMENT AND FURNISHINGS

F SPECIAL CONSTRUCTION AND DEMOLITION

G SITEWORK

A SUBSTRUCTURE
A10 FOUNDATIONS

A1000 FOUNDATIONS GENERAL

1. All foundation elements shall be designed by the structural engineer in accordance with the latest NYC Building Code and all approved and applicable local laws. At the direction of DDC, the requirements of the NYC Building Code may be supplemented by more stringent provisions as found in other building, design and material codes relevant to the project.
2. Foundation systems shall be designed to meet or exceed all structural integrity, strength, serviceability, and appearance criteria as defined by code. Serviceability criteria include deflections, drift, vibrations and progressive collapse as applicable. The design shall insure durability by means of crack control, resistance to corrosion, water tightness, fire-resistance etc. The design shall eliminate any detrimental effects of anticipated settlement.
3. While meeting all criteria for strength and serviceability, the design is expected to optimize the use of material and be economical.
4. Structural items required for site development, such as retaining walls, exterior steps, pits, support for fuel tanks and similar items, shall be designed and detailed by the structural engineer.
5. The Consultant shall evaluate the boring data provided by DDC, perform additional investigations as needed (including borings, and test pits) to determine the most suitable and economical type of foundation. The foundation must be properly designed, detailed, and specified on the structural drawings and specifications.
6. Members for any temporary bracing or shoring of retaining walls, secant walls or other structural systems, shall not pass through, or be embedded into the footings permanently.
7. The consultant shall take care to not locate any utilities, trenches, or other similar items to run through the footings. All such items must run independently.
8. Settlement
   a. The foundations must be designed to minimize overall as well as differential settlements. For utility lines where such settlement could have detrimental effects on facility operations, health, and safety, the settlement criteria must be more stringent. This is to be coordinated by the consultants with other trades, as applicable.
   b. Where the bearing capacity of soil necessitates the footings to be supported on piles and/or other deep foundation systems, the utilities shall also be supported similarly or hung from the slabs, as appropriate. The possibility of any differential settlement shall be avoided.
9. Vibrations and Monitoring
   Where relevant, the Consultant must show the requirements for monitoring the structure (including any affected structures in the vicinity) and provide guidance in the notes or on the drawings regarding the type, number, frequency etc. of the monitoring recommended.

A1010 STANDARD FOUNDATIONS

1. Ground Water
   a. The Consultant must evaluate the ground/flood water conditions indicated in the Geotechnical report. If de-watering during construction, or subsurface waterproofing is required, such requirements shall be clearly called out, and the details must be shown on the architectural drawings, coordinated, and schematically shown on the structural drawings.
   b. All structural materials shall be specified such that they are protected from the corrosive marine environment.
   c. For exposed and/or below grade reinforced concrete members, consultants shall investigate and recommend integral waterproofing materials such as Hycrete, Xypex or other equivalent to prevent the possibility of water entering and causing deterioration of the reinforcement.
   d. The design shall minimize or avoid excavation below high ground water table. The structural engineer is to make reference to the waterproofing details on the structural drawings.

2. Unsuitable Soils
   Where the existing soils are not suitable for supporting a slab on grade, such floor systems shall be structurally framed and supported on foundations, or on properly compacted, controlled backfill.

A1020 SPECIAL FOUNDATIONS

A1020.10 DRIVEN PILES

The effect of pile driving operations on adjacent properties must be taken into consideration during design and should be reviewed with DDC. Only pile types mentioned in the NYC Building Code, and approved by the DOB shall be specified.

A1020.50 UNDERPINNING

Where the project is located adjacent to existing structures, the Consultant must make every effort to avoid or minimize the need for underpinning. If underpinning is found necessary, the following recommendations must be adhered to:

1. The Consultant must notify the Project Manager at the Schematic Design phase to contact the adjacent property Owner and coordinate all issues associated with underpinning.
2. The consultant shall clearly identify the extent of any adjacent foundations that require underpinning on the drawings. The drawings shall also contain generic underpinning details and instructions.
3. The design of underpinning must be performed and signed and sealed by a Professional Engineer licensed In the State of New York and retained by the contractor. The underpinning design shall be reviewed by the structural consultant (EOR) for the impact on the final, permanent structure and conformance to his recommendations.
4. The contractor is responsible for monitoring during construction the conditions of the adjacent buildings and other structures affected by the underpinning.
5. Underpinning shall be identified as a special inspection and shall be listed as such in the contract documents.

A40 SLABS-ON-GRADE

A4000 SLABS-ON-GRADE GENERAL

1. The Consultant must design, detail, and adequately specify all new slabs on grade to minimize or eliminate cracking and curling.
2. Structural Synthetic Macro-Fibers should be used as a substitute for welded wire fabric reinforcement to minimize cracking in concrete from both plastic shrinkage and temperature shrinkage. The design must meet the requirements of ACI 360 R, Design of Slabs on Grade, and other applicable guidelines.

B SHELL
B10 SUPERSTRUCTURE

B1000 SUPERSTRUCTURE GENERAL

1. The Consultant must evaluate and design structural systems that are economical, efficient, durable, sustainable, and flexible for future modifications and reconfigurations of spaces meeting the loading, serviceability, durability and vibration requirements of the Building Code, ASCE 7 and other applicable guidelines.
2. All super-structure elements shall be designed by the structural engineer in accordance with the latest NYC Building Code and all approved and applicable local laws. At the direction of DDC, the requirements of the NYC Building Code may be supplemented by more stringent provisions as found in other building, design and material codes relevant to the project.
3. Structural systems shall be designed to meet or exceed all structural integrity, strength, serviceability, and appearance criteria as defined by code. Serviceability criteria include deflections, drift, vibrations and progressive collapse as applicable. The design shall insure durability by means of crack control, resistance to corrosion, water tightness, fire-resistance etc.
4. The Structural Engineer shall coordinate work with all other trades.
5. No openings through any structural member may be made in the field without the written authorization of the EOR.
6. While meeting all criteria for strength and serviceability, the design is expected to optimize the use of material and be economical.
7. The Consultant shall request probes, and other exploratory studies as needed for a safe design with minimal uncertainties. The Consultant is responsible for monitoring the execution of the probes.
8. The Structural Engineer shall collaborate with the Architect on the design and specification of proper fire protection of all materials specified in the structural and indicatively show them on the drawings.
9. In order to facilitate flashing and waterproofing at the roof use HSS (Hollow Structural Sections) posts to support the rooftop mechanical equipment dunnage where possible.
10. All masonry elements requiring structural reinforcement shall be designed and detailed by the structural engineer in accordance with the Seismic provisions of the Code. The analysis and design of slender masonry walls subjected to out-of-plane loads should be based on the Strength Design Method, accounting for the increased moments due to P-delta effects. The structural drawings shall clearly indicate the basic properties of the Concrete Masonry such as Specified Compressive Strength (f'm), types of Mortar, Grade of rebar, Indicate the density of the unit along with the grout spacing, specifying whether it is fully grouted, ungrouted, or partially grouted (including the spacing).
11. Structural Materials:
    a. All building materials and construction types acceptable under the Building Code are allowed, however special consideration should be given to materials that have inherent ductility and are better able to respond to load reversals (i.e. cast-in-place reinforced concrete and steel construction).
    b. Careful detailing is required for materials such pre-stressed concrete, precast concrete and masonry to adequately respond to design loads while preventing structural cracking.
    c. The new structure shall be able to resist the loads imposed by flooding as determined from the most recent FEMA flood maps without suffering permanent damage and/or loss of operation.

d. All structural materials shall be specified such that they are protected from the corrosive marine environment.

12. Seismic design:
    a. Special consideration shall be given to structures for police, fire, and emergency medical services and emergency management.
    b. Enlargements and new building additions shall be subject to seismic provisions as outlined in TPPN #4/99.
    c. Seismic evaluation of existing buildings shall be in accordance with the provisions of ASCE/SEI 31-03.
13. Concrete:
    a. Structural concrete shall have a minimum compressive strength of 4000 psi at 28 days. All concrete exposed to the weather or soil shall be air entrained.
    b. The latest ACI durability guidelines for concrete shall be specified and followed.
    c. The concrete specification shall indicate the optimal quantities of water, cement, aggregates and admixtures, along with acceptable levels for slump and air content.
    d. For exposed and/or below grade reinforced concrete members, Consultants shall investigate and incorporate integral waterproofing materials such as Hycrete, Xypex or other equivalent to prevent the possibility of water entering and causing deterioration of the reinforcement.
    e. Epoxy coated or galvanized reinforcing bars shall be specified for all concrete foundations and other structural elements subject to water and chloride penetration, such as in garages and firehouse apparatus floors.
    f. Structural synthetic macro fibers shall be used in lieu of welded wire meshes where reinforcement is required to be provided for temperature and shrinkage control.
    g. Use pozzolans in concrete in accordance with ACI 318. Any of the following are acceptable: Fly-ash, microsilica, blast-furnace slag, recycled ground glass, etc
14. Steel:
    a. The contract documents shall show sufficient information for the preparation of shop drawings.
    b. Non-standard connections are to be fully detailed by the structural consultant.
    c. Connections shall satisfy all requirements of the Code of Standard Practice for Steel Buildings and Bridges.
    d. The Consultant shall require weldability tests for all existing steel that might have been manufactured prior to 1920.
15. Anchoring System:
    a. All designs requiring anchoring systems shall specify manufacturer, type, size, depth of embedment, and load to be attained. If it is required, the Consultant shall request field testing and shall provide instructions for the inspection of this testing. Anchors exposed to weather shall be of galvanized or stainless steel.
    b. DDC prefers all railing posts and similar structures to be bolted to the supporting element instead of being embedded into it.
16. Demolition:
    a. For all additions, extensions and renovations requiring partial demolition of an existing structure, the consultant shall review the contractor's demolition drawings for their impact on the long-term stability of the structure.

b. In special cases where the demolition work can affect the overall structural integrity of the existing building the structural engineer shall prepare demolition drawings outlining temporary stability measures, phasing, etc.

B20 EXTERIOR VERTICAL ENCLOSURES

B2010 EXTERIOR WALLS

B2010.00 EXTERIOR WALL GENERAL

1. Provide for continuity of the thermal and moisture protection layers of the exterior vertical enclosure and its connection to the horizontal enclosure.
2. Design envelope sections to prevent condensation on interior surfaces of or within wall/roof sections that would support mold growth.
3. Cavity Wall Air Space and Insulation
   a. Cavities exceeding the code maximum will require analysis / calculations to be performed for the tie anchors.
   b. Cavity walls are designed not only to guide any moisture occurring in the cavity to move downward to the flashing and weep vents, but also to allow a certain flow of air throughout the cavity. Recommend providing a 2-inch minimum clear drainage cavity (not including the insulation) to be effective, to allow for proper construction of the wall, and to minimize mortar fins, droppings and bridging.
   c. Clearly indicate insulation attachment method either mechanically or adhered to masonry backup. Friction fitting rigid insulation between horizontal reinforcement is not an acceptable solution.
   d. If constructing cavity walls, provide continuous flashing at the bottom of the cavity and wherever the cavity is interrupted by elements such as shelf angles, lintels and penetrations.
4. Structural loads
   a. The structural engineer shall provide cladding design loads necessary for the design of the exterior building envelope to the architect.
   b. The structural engineer shall also provide the architect with all relevant building deflections that are necessary to design and detail cladding joints, reveals and connections.
   c. The Consultant is responsible for the strength and code compliance of all masonry elements, including brick, block, stone, and mortar.
   d. The Structural Engineer shall advise the Architect on the ASCE-7 Wind load requirements for glazing and roofing design and specifications.
   e. Attachment and reinforcement of all masonry areas, especially parapets, shall be clearly detailed on the drawings.
   f. Significant structural investigation shall be conducted on landmarks and landmark quality structures.

B2010.10 EXTERIOR WALL VENEER

1. Materials
   The Consultant must use materials that are cost effective, durable, easily maintained, and appropriate to the context of the project site. For renovations and additions, the qualities of the new exterior materials must compliment or match the existing materials when appropriate.
2. Anti-Graffiti Coatings
   Sponsor Agencies may require sealants to protect against graffiti. When specifying sealants, the Consultant must evaluate the risks of long-term damage to materials, particularly masonry historic structures and landmarks. Knowledge of prior coatings on the building is required, as are material samples with and without proposed sealants. Only non-toxic sealants must be specified. Detailed programmatic requirements will be addressed for such projects in the specific project requirements.

B2010.30 EXTERIOR WALL INTERIOR SKIN

Where used, build with glass mat or moisture/mold resistant, Type X gypsum wall board for the interior face of exterior walls. On exterior walls, use only interior wall finishes that allow water vapor within the wall to escape into the conditioned space. Do not use vinyl wall coverings, oil-based paint, and other vapor-resistant materials as interior finishes for exterior walls.

B2010.90 EXTERIOR WALL SUPPLEMENTARY COMPONENTS

1. Flashing
   a. The Consultant must show flashing details for installation for lapping / sealing, terminations and end dams, inside corners and outside corners (either field formed or prefabricated), wall to roof line, base flashing and copings. Isometric or 3D drawings must be used to convey proper detailing.
   b. Where the flashing is not continuous, such as over and under openings in the wall and on each side of vertical expansion joints, the ends of the flashing should be extended beyond the jamb lines on both sides and turned up into the head joint at least 1 in. at each end to form a dam. It is recommended to turn up flashing into the sill joints 4".
   c. Provide weep vents and mortar net at all wall flashings.
   d. Flashing materials to be chosen based on durability and compatibility with adjacent materials. Service life of flashing should meet or exceed that of the wall or roof assembly it is part of. Factors such as durability during construction, corrosion, deterioration due to UV exposure, and movement must also be part of the selection criteria. Dissimilar metals should be avoided.

B2020 EXTERIOR WINDOWS

B2020.00 EXTERIOR WINDOWS GENERAL

1. Sponsor Agencies may require the use of security measures on windows to guard against window vandalism and break-ins. The Consultant is encouraged to explore an improved aesthetic for these applications using new materials, technologies, and strategies to meet the Sponsor Agency's need for security.
2. Select framing that includes advanced thermal breaks of polyester-reinforced nylon.
3. Wherever possible, select systems that incorporate pressure-equalized technology.
4. Consider building energy efficiency, occupant comfort, daylighting, acoustic performance, and security when selecting exterior window and glazing systems.

B2080 EXTERIOR WALL APPURTENCES

Provide bird control devices per the Bird-Safe Building Guidelines, NYC Audubon, or as required by code.

B30 EXTERIOR HORIZONTAL ENCLOSURES

B3010 ROOFING

B3010.00 ROOFING GENERAL

1. Construct in accordance with the recommendations of the National Roofing Contractor Association (NRCA) Manual – Current Edition.
2. Roof-mounted equipment should be elevated as recommended in the NRCA Roofing and Waterproofing Manual and set back from the roof edge to minimize visibility.
3. Do not use pitch pockets as part of the roof design.
4. No building element may be supported by the roofing system except protective walkways manufactured specifically for use with that roofing system.
5. Provide protective walkways on the roof along routes to and around equipment for maintenance.

B3010.50 LOW SLOPE ROOFING

For edge flashings and copings on low-slope roofing, follow ANSI/SPRI ES-1.

B3010.90 ROOFING SUPPLEMENTARY COMPONENTS

1. Install vapor retarder in accordance with guidance in the NRCA Roofing and Waterproofing Manual.
2. For Roof System Related Sheet Metal Flashing use The NRCA Manual: Architectural Metal Flashing, Condensation Control & Reroofing – 2010 and SMACNA Architectural Sheet Metal Manual.

B3060 HORIZONTAL OPENINGS

B3060.10 ROOF WINDOWS AND SKYLIGHTS

1. Assemblies must comply with wind load testing in accordance with ASTM E 1233.
2. Skylight design must follow the guidelines of AAMA Standard 1600.
3. For the design of sloped glazing, reference the following two AAMA publications as resources: Glass Design for Sloped Glazing and Structural Design Guidelines for Aluminum Framed Skylights.
4. When designing for essential facilities as identified in the Specific Project Requirements, roof window and skylight assemblies to pass ASTM E1886 missile-impact and cyclic-pressure tests in accordance with ASTM E1996 for project's Wind Zone for enhanced protection.

C INTERIORS

C10 INTERIOR CONSTRUCTION

C1010 INTERIOR PARTITIONS

1. Use cementitious wall board as a tile base.
2. Use types IR and MR and type X gypsum wallboard where applicable for high-impact and moisture resistance per ASTM C645 and C1396.
3. Masonry partitions to be per ASTM C129, C645, C1596.

C1020 INTERIOR WINDOWS

Use insulated glazing where separating conditioned spaces.

C1030 INTERIOR DOORS

Per ANSI/SDI A250.8 (2017) for hollow-metal doors and frames, provide at a minimum Heavy-Duty Doors and Frames, Level 2 or Extra-Heavy-Duty Doors and Frames, Level 3 and Physical Performance Level A, Model 1 (full flush), with full profile welded frame construction, or as required in the Specific Project Requirements.

C20 INTERIOR FINISHES

Finish materials must not adversely affect the health of workers or occupants. Health considerations must extend to the material's production, off-gassing during installation, and environmental pollution engendered by the disposal process.

C2010 WALL FINISHES

Provide moisture and mildew resistant interior wall finishes which are easily maintained, and suitable in accordance with industry standards for the architectural surface being finished.

C2030 FLOOR FINISHES

1. When budget and maintenance conditions allow, flooring from renewable resources such as linoleum, rubber, clay, or cork, and materials with high recycled content are encouraged. Vinyl composition tile (VCT) is discouraged.
2. For health and maintenance reasons carpeting is discouraged. Alternative flooring should be considered wherever suitable, and in those situations where carpet must be used, carpet tile is preferred.

D SERVICES

D10 CONVEYING

Not used

D20 PLUMBING

D2000 PLUMBING GENERAL

1. Plumbing Seismic Design

   Plumbing Systems and Equipment Requiring Restraint- Plumbing natural gas piping, motor vehicle fuel storage tankage, piping and dispensing equipment, domestic water storage tankage, supply/return piping and heating equipment, sanitary drainage piping and pumping equipment, vent piping, stormwater drainage piping and pumping equipment associated with building life safety systems or other critical plumbed equipment that must be maintained functional and operational in the aftermath of a seismic event, must be designed for seismic forces and adequately restrained.

2. Special Purpose Equipment Areas Served by Plumbing Systems
   a. In Mechanical Equipment Rooms, potable water piping and sanitary/storm drain piping must not be located above motor control centers, variable frequency drives (VFD), motor disconnect switches and other mechanical equipment controls. Where required, suitable means of protection (guards, drain pans, pipe leak containment jacketing and leak detection) will be provided to shield mechanical equipment from exposure to leaking and spraying water.

   b. Mechanical Equipment Rooms must be provided with floor drains and/or other suitable means of collecting, containing, and disposing of water. Overhead and floor mounted drain piping will be located and arranged to maintain safe headroom and adequate walkway clearance for normal maintenance access and service clearance.

   c. In Electrical Equipment Rooms – no potable water piping and sanitary/storm drain piping are permitted. Where required, suitable means of protection (guards, drain pans, pipe leak containment jacketing and leak detection) will be provided to shield electrical equipment from exposure to leaking and spraying water.

   d. In Information Technology Equipment Rooms - no potable water piping and sanitary/storm drain piping are permitted. Where required, suitable means of protection (guards, drain pans, pipe leak containment jacketing and leak detection) will be provided to shield information technology equipment from exposure to leaking and spraying water

   e. In Chemical Storage Rooms, UPS Battery Rooms and other areas with hazardous chemical exposure environments, – an OSHA compliant emergency eyewash station and shower will be provided. Floor drains provided for emergency eyewash stations and shower locations will incorporate suitable means of collecting, containing, treating, and safely disposing of chemically contaminated water before discharge to building drainage system and the City sanitary sewer.

   f. Vertical Chases and Shafts- all potable water piping and sanitary/storm drain piping pipes located within building vertical chases and shafts will have accessible service drain valves with hose bibs located at intermediate floors and the bottom of pipe risers for ease of maintenance. Where required, provide a means of air venting and vacuum relief to allow water to drain freely from riser piping. A floor drain will

be provided at the lowest level in each chase or shaft. Adequate access to the service drain valves and floor drains will be provided.

D2010 DOMESTIC WATER DISTRIBUTION

D2010.00 DOMESTIC WATER DISTRIBUTION GENERAL

1. Domestic Cold Water Service
   a. Domestic cold water service will consist of a complete piping distribution system originating from a potable water source including the provision for utility service water meter and backflow preventer equipment approved for protecting the City water supply.
   b. In the design and arrangement of cold water service piping distribution
   c. Systems, there must be no pipe dead legs or capped spurs.
   d. The Domestic cold water service will supply potable cold water to all plumbing fixtures, hose bibs, plumbed equipment, domestic hot water heaters and make up water provided for mechanical equipment equipped with an approved air-gap fitting or backflow protector device.
2. Domestic Hot Water Supply
   a. Domestic hot water service will consist of a complete piping distribution system originating from a potable water source and if separately derived, include the provision for utility service water meter and backflow preventer approved for protecting the City water supply.
   b. In the design and arrangement of hot water service piping distribution systems, there must be no pipe dead legs or capped spurs.
   c. Domestic potable hot water should be generated utilizing a reliable, efficient and sustainable source of energy. Energy recovery can be used to reduce the reliance on electricity and fossil fuels for water Heating. For specific requirements, refer to the Owner's Project Requirements (OPR) and the specific project requirements.
   d. For emergency disinfection, domestic water heating equipment will have the capability of heating the entire distribution system to a temperature of 160°F (minimum).
   e. Storage of heated potable water must minimize stagnation, facilitate re-circulation and point of use consumption. A heated potable water storage and delivery temperature of 140°F (minimum) is acceptable providing that the point of use water temperature is regulated to prevent scalding.
   f. Where provided, potable hot water return systems will be designed with balancing valves and test plugs at each return circuit.
   g. Point-of-use instantaneous hot water heaters are acceptable for use at emergency eyewash, shower and other plumbing fixtures to ensure the reliable supply of tepid water.
3. Domestic Water Service Pressure
   The Domestic water service supply pressure must be sufficient to provide the design water demand volume and pressures required by plumbing fixtures and plumbed equipment.
4. Domestic Water Booster Pumping System
   Where City water supply pressure is inadequate to provide the design water demand volume and pressures required by plumbing fixtures or and plumbed equipment, provide a factory assembled and tested pressure booster pumping system including equipment base, booster water pumps sized for design volume demand, maximum delivery pressure requirement and full operating redundancy, variable speed pump control, ASME hydro-pneumatic tank, pressure operating control, pump inlet/outlet manifold piping, fittings, valves, air venting devices, pressure relief devices and other appurtenances.

5. Domestic Water Equipment Pressure Control
   At all quick-closing automatic valves (mechanical makeup, drinking fountains, flush valves, single lever control faucets, temperature regulating valves, dishwashers, return pumps, and similar equipment) water hammer arrestors will be provided. Water hammer arrestors should be selected and applied in accordance with NYC Code, Plumbing Drainage Institute (PDI) Standards and as recommended/required by the plumbed fixture and equipment manufacturer.

D2010.60 PLUMBING FIXTURES

Plumbing fixture type, use, and materials of construction will be selected based on the OPR and the specific project requirements. Coordinate fixture selection and design application with NYC Code, ADA requirements, City water supply pressure level, method of potable cold/hot water distribution system pressure/volume regulation and fixture manufacturer's performance requirements/recommendations.

D2010.90 DOMESTIC WATER DISTRIBUTION SUPPLEMENTARY COMPONENTS

1. Water Meters
   a. The installation of water meters must comply with RCNY Title 15, Chapter 20, "Rules and Regulations Governing and Restricting the Use and Supply of Water" available from the New York City Department of Environmental Protection (DEP). A list of "Approved Water Meters and Related Equipment" is available from NYC DEP.
   b. All water meter bodies, service valves and piping will be composed of non-lead metal alloys that comply with NSF 61G/372 Standards and NYC DEP Rules.
   c. NYC DEP uses a Radio Frequency (RF) fixed network Automatic Meter Reading (AMR) System for meter reading. To register the meter head installed under permit, the installation of power receptacle is required. The Licensed Plumber must connect all three wires from the meter register head to the receptacle. The wire from the meter register must be 22-gauge, three conductor wire, red-black-green. DEP will modify the power receptacle with a Meter Transmitter Unit (MTU) during inspection of the installation.
   d. Sub-metering equipment with remote monitoring capability will be used to collect water use data for building equipment such as: cooling tower/evaporative cooler makeup water, steam and hot-water boilers, controlled irrigated landscape areas and other high demand water use equipment, system or process.
   e. All sub-metering equipment must be configured to communicate water consumption data to a meter data management system which is capable of electronically storing data and creating user reports showing calculated hourly, daily, monthly and annual water consumption.
   f. NYC DEP has approved for use several devices that transmit meter information to a point other than, and in addition to the AMR System. NYC DEP does not provide maintenance support for these devices. The output of meter attachments is not recognized for billing purposes. Meter attachments must not be configured to interrogate the meter more than once every 60 minutes. Refer to the "Water Meter Data Output to Building Management Systems Guide" available in the "Property Managers and Trade Professionals" publication available from NYC DEP.

D2020 SANITARY DRAINAGE

D2020.00 SANITARY DRAINAGE GENERAL

1. The sanitary drainage system will consist of a complete piping and collection/volume detention network serving all required plumbing fixtures, floor drains and other equipment connecting to the City sewer system.

2. The sanitary flow will be by gravity. Where required, provide suitable means of sanitary collection/detention (tank, pit, manhole, catch basin) and transfer pumping capability to allow gravity flow to the City sewer system.
3. Any time a project requires connecting to a City sewer, NYC DEP must approve that the sewer can accept the sanitary and/or storm discharge. A sewer certification is required for any new connection to a City sewer.
4. Where a City combined sanitary and stormwater sewer presents a risk of surging backflow into the building, evaluate the application of a sewer back water valve with manual gate to prevent sustained damage and contamination of property and building interior.

D2020.30 SANITARY SEWERAGE PIPING

1. Grease Interceptors
   a. Drains, fixtures, and equipment discharging fat, oil, or grease-laden waste; within 10 feet of the cooking battery; and as required by the Department of Health, must discharge to a grease interceptor before connecting to the sanitary sewer.
   b. Grease interceptor(s) must meet criteria mandated by the Industrial & Acid Waste Unit at DEP. Sizing of grease interceptors must be based on the so- called volume sizing guideline, not the drainage fixture-unit technique.
2. Sand/Oil Separator
   Floor drains and/or trench drains in vehicle repair garages must discharge to a sand/ oil separator before discharging to the sanitary sewer.
3. Sanitary Drainage System
   Steam condensate as well as chemically treated mechanical discharge from cooling towers, boilers, chillers, and other mechanical equipment must not discharge to the sanitary drainage system without proper treatment for protection of the environment and waterways.
4. Sanitary Floor Drains
   Trap primers must be provided for all sanitary drains (floor drains, receptors, open site drains, hub drains, and similar) where drainage is not routinely expected or is seasonal.
5. Piping
   a. Hub-Less (no hub) Cast Iron piping is permitted for the sanitary system inside the building except for underground applications. Service weight Cast Iron is allowed in either above or underground applications, but underground connections must be Cast Iron bell and spigot pipe with a lead and oakum joint.
   b. Hub-less (no hub) pipe and fittings must not be used for the storm piping inside or outside the building. Only Service Weight with caulked joint (bell and spigot, lead and oakum) for underground application must be used for storm drainage piping. The use of the so-called “push-on-joint” or a hub pipe with neoprene gasket is allowed for interior and above the ground storm piping.

D2020.90 SANITARY DRAINAGE SUPPLEMENTARY COMPONENTS

1. All sanitary sewer vents terminating through the roof must be insulated for a minimum of 6 ft. below the roof line to prevent condensation from forming and must include vapor barrier jacket on this insulation.
2. All piping exposed in plenums, or above the ceiling, must be insulated to prevent condensation. The thermal pipe insulation for plumbing systems must comply with fire and smoke-developed index in accordance with the Code requirements.

D2030 BUILDING SUPPORT PLUMBING SYSTEMS

D2030.00 BUILDING SUPPORT PLUMBING SYSTEMS GENERAL

1. The stormwater drainage system will consist of a complete piping and collection/volume detention network serving all required building stormwater scuppers, gutters, leaders and storm drains connecting directly and indirectly to the City sewer system.
2. Stormwater flow will be by gravity. Where required, provide suitable means of stormwater collection/detention (tank, pit, manhole, catch basin) and transfer pumping capability to allow gravity flow into the City sewer system.
3. NYC DEP allows for different types of stormwater management systems to comply with the stormwater performance standard, including subsurface, rooftop and stormwater recycling systems. These systems store and slowly release stormwater to the sewer system (detention) or dispose of stormwater onsite (retention) through infiltration to soils, evapotranspiration, and recycling onsite.
4. Potable water can be conserved where stormwater is collected, stored and treated for use in building water closets, urinals, cooling tower makeup supply and "grey water" systems for vehicle and other non-potable washing functions. Untreated water can be used for site irrigation of landscape features.
5. Maximum stormwater collection/detention volume will be designed in accordance with NYC DEP "Guidelines for the Design and Construction of Stormwater Management Systems" and "Criteria for Detention Facility Design" available from NYC DEP.
6. Any time a project requires connecting to a City sewer, NYC DEP must approve that the sewer can accept the sanitary and/or storm discharge. A sewer certification is required for any new connection to a City sewer.
7. Where a City combined sanitary and stormwater sewer presents a risk of surging backflow into the building, evaluate the application of a sewer back water valve with manual gate to prevent sustained damage and contamination of property and building interior.
8. Clearwater drainage including cooling coil condensate drainage, evaporation pan drainage, ice makers and similar clear, non-chemically treated drainage will be recovered and reused for cooling tower make-up, landscape feature irrigation, greywater use or similar purposes. Clearwater drainage without chemical, vegetable, human, animal, protein, fecal, oil, grease, or similar pollutants may be discharged to the stormwater drainage system where permitted by NYC DEP, NYS DEC and the U.S. Environmental Protection Agency.
9. Foundation and Subsoil Drainage
    a. The requirements of the foundation and subsoil drainage system must be identified, capacity calculated, and materials identified by the geotechnical soils engineer and identified in the geotechnical report. The layout and installation details and materials (identified by the geotechnical report) must be specified and identified in the structural foundation drawings and indicated on the architectural drawing sections and details. See Structures and Soils section in this Chapter.
    b. The foundation and subsoil drainage system must be provided with an emergency power source, backwater prevention, and perforated drain tile piping in washed gravel bed with filter fabric, which must extend to the duplex sump pumping system as required.

D30 HEATING, VENTILATION, AND AIR CONDITIONING

D3000 HVAC GENERAL

1. Thermal Comfort and Humidity Requirements

   The thermal comfort and humidity performance requirements of HVAC Mechanical Systems must be designed in accordance with the NYC Building Code, NYC Energy Conservation Construction (ECC) Code and Ref. Std. ASHRAE 55. Indoor habitable and occupied spaces must be designed to provide a healthy and comfortable environment year-round.

2. Ventilation
   Provide for and maximize the benefit of natural and or mechanical ventilation for occupied and habitable spaces. Make reasonable provisions in equipment selection and system design to permit the increase of outdoor air ventilation supply rate and exhaust air rate to allow for the dilution and purge of indoor air contaminants that may be determined to contribute to unhealthy environmental conditions.

3. Indoor Air Quality
   To provide health and comfort of the building occupants, design and install the mechanical systems to meet the requirements of the Code. Exposure limits to contaminants (particulate, gaseous, bacterial, viral) to be established by governing City, State and Federal Public Health Authorities.

4. Interior Noise Control
   Limit occupant exposure to excessive mechanical noise and vibration. Any equipment generating indoor noise must meet the STC, OITC, NC, RC, sound power level, vibration displacement, velocity and acceleration limitation requirements of the NYC Codes, latest edition of the ASHRAE Applications Handbook and other applicable Reference Standards. Where required, perform, an in depth acoustical and vibration analysis to identify potential noise and vibration source transmission pathways and to develop effective isolation and control strategies for minimizing excessive noise and vibration propagation indoors.

5. Exterior Noise Control
   a. When outdoor noise generation is a controlling design consideration, select outdoor mechanical equipment to reduce assembly and/or component vibration and aerodynamically generated noise in accordance with the project acoustician's recommendations.

   b. Limit the propagation of excessive outdoor mechanical noise. Any equipment generating noise must meet the sound power level, vibration displacement, velocity and acceleration limitation requirements of the NYC Codes, latest edition of the ASHRAE Applications Handbook and other applicable Reference Standards. Where required, perform, an in depth acoustical and vibration analysis to identify potential noise and vibration source transmission pathways and to develop effective isolation and control strategies for minimizing excessive noise and vibration propagation outdoors.

6. Energy Efficiency
   The HVAC system design must meet or exceed the requirements of the NYC ECC and Local Laws. An integrated design approach must be implemented to incorporate all elements that will affect the performance of the HVAC System.

7. Operation And Maintenance
   a. Accessibility
      Design the location and installation of all HVAC System equipment, control devices, balancing devices, means of isolation and means of access so that it all can be safely and easily inspected and maintained. Comply with the manufacturer's recommended clearances around installed equipment,

   b. Operability
      The sequence of operation for the control systems must be clearly described and properly documented. The HVAC system design should simplify control and minimize the need for overly complex control systems.

   c. Reliability
      Design the HVAC system so that equipment failures and normal maintenance have minimal impact on the users. Failure of one piece of equipment should not negatively impact large portions of the building. Install piping and valves so that different combinations of equipment can be used during replacement and overhaul. Equipment components, spare parts, and materials should be readily available, and the equipment should be serviceable, repairable by service providers and resources available locally.

   d. Recapitalization
      The City if New York upgrades building Mechanical systems in phases over many years while parts of the building are occupied. The system's design should consider how equipment elements will be replaced in the future. Vertical and horizontal distribution should allow parts of the system to remain in operation and zones of the building to be occupied during equipment replacement.

   e. Longevity
      Public buildings have a longer life expectancy than most commercial office buildings; many buildings are over 50 years old and are expected to continue in service for decades to come. HVAC systems are expected to have extended service lives. They will be used by many different tenants, operated by many different maintenance providers, and modified many times over the life of the building. Selection of robust, reliable, energy efficient equipment that can be reliably operated over the long term is required.

   f. Visibility
      Exterior mechanical equipment should be located where it is not visible to the public or, when this is not feasible, should be provided with visual screening.

D3020 HEATING SYSTEMS

D3020.10 HEAT GENERATION

1. Boilers
   a. Choose the type of boiler (cast iron, dry-base, scotch marine, water tube, etc.) based on the application (working pressure and temperature, fuel used, construction material, draft type, low emissions, condensing or not, etc.), efficiency requirements, and the dimensional constraints of the boiler room.

   b. Boiler heat exchangers and auxiliary equipment must be constructed of materials of construction to resist wear, fatigue and corrosion and to operate reliably, safely and efficiently for the design pressure and temperature requirements.

   c. Boiler and auxiliary equipment must have remote control and supervisory capability for integration with BAS or other supervisory control and monitoring systems as identified in the Owner's Project Requirements.

D3030 COOLING SYSTEMS

D3030.10 CENTRAL COOLING

1. Chillers
    a. For chilled water systems of 500 tons and larger, centrifugal chillers should be used. Below 500 tons, reciprocating compressor, scroll, and rotary screw chillers are permitted.
    b. Select chiller and auxiliary equipment to minimize operating noise and vibration levels
    c. Chiller heat exchangers, refrigerant compressor and auxiliary equipment must be constructed of materials of construction to resist wear, fatigue and corrosion and to operate reliably, safely and efficiently for the design pressure and temperature requirements.
    d. Chiller and auxiliary equipment must have remote control and supervisory capability for integration with BAS or other supervisory control and monitoring systems as identified in the Owner's Project Requirements.
2. Cooling Towers
    a. Design for either Induced or Forced Draft cooling towers, whichever best fits the application
    b. Select cooling tower fan operating speed to minimize operating noise and vibration levels. Fans that are designed for variable speed operation must be selected to operate safely without excessive vibration levels, excessive deflection of rotating assembly elements and damage to drive bearings throughout their range of operating speed adjustment A fan vibration switch with a manual reset must protect tower fan assemblies.
    c. Multiple cell towers must have equalization piping between cell basins. Equalization piping must include automatic isolation and shutoff valves between each cell to control water flow only over those towers that are in use.
    d. Cooling tower basins, housing, splash fill and mist eliminator elements must be constructed of materials of construction to resist wear, fatigue and corrosion and to operate reliably, safely and efficiently for the design pressure and temperature requirements. Special consideration must be given to de-icing cooling tower basins and splash fills if they are to operate in subfreezing weather
    e. Wind and seismic design must be incorporated. If the cooling tower is located on the building structure, vibration and sound isolation must be provided.
    f. Cooling tower and auxiliary equipment must have remote control and supervisory capability for integration with BAS or other supervisory control and monitoring systems as identified in the Owner's Project Requirements.
    g. Condenser water heat exchangers and auxiliary equipment must be constructed of materials of construction to resist wear, fatigue and corrosion and to operate reliably, safely and efficiently for the design pressure and temperature requirements.

D3050 FACILITY HVAC DISTRIBUTION SYSTEMS

D3050.10 FACILITY HYDRONIC DISTRIBUTION

1. Piping System
    a. Steam, Steam Condensate, Hot, Chilled & Condenser water piping must be designed in accordance with the latest edition of the ASHRAE Fundamentals Handbook and ASHRAE HVAC Systems & Equipment Handbook.
    b. Evaluate the piping system's potential for expansion and contraction and show all provisions for anchoring, guiding, and compensation on the drawings. As required, coordinate with Structural

work for the design of all attachments of pipe supports, guides and fixed anchoring locations to the building structural systems.

2. Pumps
   a. Determine the type of pump (centrifugal, positive displacement, base mounted, in-line, etc.) that best fits the application.
   b. Select pump materials of construction to resist wear, fatigue, and corrosion and to operate reliably, safely and efficiently for the design pressure and temperature requirements.
   c. Select the pump size and operating point of rating to maximize hydrodynamic efficiency and to reduce energy consumption.
   d. Select pump operating speed to minimize operating noise and vibration levels. Pumps that are designed for variable speed operation must be selected to operate safely without excessive vibration levels, excessive deflection of rotating assembly elements and damage to pump casing seals and drive bearings throughout their range of operating speed adjustment
   e. Pump equipment must have remote control and supervisory capability for integration with BAS or other supervisory control and monitoring systems as identified in the Owner's Project Requirements

3. Cathodic Protection
   The requirement for providing cathodic corrosion protection for underground metallic piping must be evaluated by means of a geotechnical report including soils analysis and electric resistivity test. Where required, cathodic protection or other accepted means of preventing pipe corrosion must be provided.

4. Water Treatment
   Provide complete systems for water treatment. The methods used to treat makeup water must have demonstrated prior success in existing facilities using the same municipal water supply and must follow the guidelines outlined in the ASHRAE Applications Handbook. The design of the water treatment for closed and open hydronic systems must take into consideration the operational and maintenance needs of all system equipment including such components as boilers, chillers, cooling towers, other heat exchangers, pumps, and piping. The design must address all aspects of water treatment: biological growth, dissolved solids and scaling, corrosion protection, and environmental discharge regulations. The chemical feed system equipment must have remote control and supervisory capability for integration with BAS or other supervisory control and monitoring systems as identified in the Owner's Project Requirements.

5. Air Control
   Pressurized diaphragm expansion tanks must be appropriately sized for closed piping systems. Air separators and vents must be provided on closed hydronic systems to remove accumulated air within the system. Automatic bleed valves must only be used in accessible spaces in mechanical rooms, where maintenance personnel can observe them, and they must be piped directly to open drains. Manual bleed valves must be used for terminal units and other less accessible high points in the system. Air vents must be provided at all localized high points of the piping systems and at each heating coil, and system drains must be provided at all localized low points of the piping systems and at each heating coil.

6. Piping System and Equipment Identification
   All pipes, valves, and equipment in mechanical rooms, shafts, ceilings, and other spaces accessible to maintenance personnel must be identified with color-coated piping or color-coded bands, and permanent tags indicating the piping system type and direction of flow, or the equipment type and number, in accordance with ASHRAE handbooks. The identification system must also tag all valves and other operable fittings in accordance with ASTM Standard A13.1.

D3050.50 HVAC AIR DISTRIBUTION

1. General Design Requirements
   a. Temperature and Airflow Control
      Psychometric process charts must be prepared for each AHU application, characterizing full-load and part-load operating conditions for all processes in the system, in accordance with this Guide. AHU/coil designs must ensure that conditioned space temperatures and humidity levels are within acceptable range, per program requirements and the indoor design conditions noted above.
   b. Limitation of Supply Air Temperature
      Comfort HVAC systems with supply air dry bulb temperatures below 50F are not permitted. Supply air must be no lower than 50F dew point temperature to prevent condensation on the duct surfaces.
   c. Unless limited by the Owners Project Requirements and the specific project requirements, both overhead and underfloor air distribution systems can be considered for the design of HVAC Systems. Additional consideration for housekeeping and maintenance may be required for the application of underfloor air distribution systems.
   d. Energy consumption, security, and sound attenuation must be major considerations in the routing, sizing, and material selection for air distribution ductwork. All supply, return and exhaust ductwork must be sized in accordance with the latest editions of the ASHRAE Fundamentals Handbook and ASHRAE HVAC Systems & Equipment Handbook.
   e. When indoor noise generation is a controlling design consideration, select duct, plenum and air terminal device velocities to reduce air turbulence and aerodynamically generated noise in accordance with project acoustician's recommendations. The use of plenum and duct sound lining materials must be limited and evaluated for the potential risk of occupant health and safety exposure to airborne particulate, filament fiber and VOC contaminants.
   f. Choose the size, shape, fitting/accessories, material composition, and layout of the ductwork that best fits the application and minimizes the friction loss, as well as the overall system noise level. Generally, design the ductwork per the latest SMACNA standards. Select ducts with aspect ratios 4:1 or less. Incorporate volume dampers in duct branches for system balancing.
   g. The locations of the air delivery devices and the ranges of their outlet airflow rates must be selected to ensure that the Air Diffusion Performance Index (ADPI) values remain above 80% during all full-load and part-load conditions, and below the specified noise level to achieve the background noise criteria, in accordance with the test procedures specified in Appendix A of ASHRAE Standard 113
   h. The use of Mechanical Equipment Rooms (MER) as HVAC System return air or relief air plenums is permitted.
   i. For dedicated zones of control, Constant Volume (CV) systems are acceptable. For multiple zones of control, separate Variable Volume (VV) systems are required
   j. Roof Mounted Ductwork: Roof mounted Supply and Return ductwork located horizontally above the roof outdoors is NOT Acceptable.
   k. Unless identified otherwise in the Owner's Project Requirements, use ductwork, instead of plenum, for air distribution (supply and return) in a space/facility.
   l. Review security requirements with Sponsor Agency. For security applications, use framed security bars for HVAC openings or ducts 6" or larger in any dimension.

2. Air Handling Units
   a. Select packaged equipment construction (single or double wall, insulation) and fan type (FC, BI, Airfoil, etc.) that results in acceptable performance and noise levels. Units must be ARI certified and UL listed.

b. Select design air velocities through air handling component sections and heating and cooling coils to limit air pressure drop, aerodynamic noise and potential cooling condensate transfer as recommended by the equipment manufacturer.

c. Make sure there is available space and service clearance for piping coils, drains, and traps.

d. Where possible, air handling units must be sized such that a Refrigeration System Operating Engineer is not required to be on site to facilitate flexible zone control, particularly for spaces that involve off-hour or high-load operating conditions.

3. Air Distribution Components
   a. Fans:
      i. Determine the type of fan (power roof ventilator utility fan, centrifugal in-line, propeller fan, etc.) that best fits the application.
      ii. Select fan materials of construction to resist wear, fatigue and corrosion and to operate reliably, safely and efficiently for the design pressure and temperature requirements.
      iii. Select fan operating speed to minimize operating noise and vibration levels. Fans that are designed for variable speed operation must be selected to operate safely without excessive vibration levels, excessive deflection of rotating assembly elements and damage to drive bearings throughout their range of operating speed adjustment Choose the fan to operate in its safe region and safety below its maximum speed and static pressure point.
      iv. Fan equipment must have remote control and supervisory capability for integration with BAS or other supervisory control and monitoring systems as identified in the Owner's Project Requirements.

   b. Ducts and Casings:
      i. Use sheet metal ductwork only; do not use fiberglass ductwork.
      ii. Use external thermal duct insulation in lieu of internal insulation.
      iii. Turning vanes must comply with SMACNA's HVAC Systems duct design standard.
      iv. Use quadrant opposed blade dampers for balancing in lieu of splitter dampers. All supply and return branch ductwork must be provided with opposed blade dampers.

   c. Air Terminal Units
      Variable air volume (VAV) terminal units or constant air volume (CAV) terminal units, including series-type-fan-powered VAV terminal units, may be used. Ceiling diffusers or booted-plenum slots must be specifically designed for VAV air distribution if used.

   d. Air Outlets and Inlets
      i. Air is to be supplied through diffusers or registers mounted in ceilings, sidewalls, sills, or floors. Air is to be returned or exhausted through grilles, slots, and other openings located in sidewalls and ceilings.
      ii. Use diffusers and registers in lieu of grilles for supply air.
      iii. Adequate space ventilation requires that the selected diffusers effectively mix the total air in the room with the supplied conditioned air.
      iv. Booted plenum slots must not exceed 4 ft. in length unless more than one source of supply air is provided.

4. Filters and Filter Sections
   a. The air filtration system may be integral with the equipment. The level of filtration must satisfy the requirements of the application including the enhanced control of indoor air contaminants that may be determined as contributing to unhealthy environmental conditions.

   b. Incorporate the proper filtration and monitoring system for the application. Air filtration must be provided in every air handling system. AHUs must have a pre-filter and a final filter, each located upstream of the cooling and heating coils.

c. Install a pre-filter / final filter rack assembly with filters having a MERV (Minimum Efficiency Reporting Value) of 8 /13.

d. Differential pressure gauges and sensors must be placed across each filter bank to allow quick and accurate assessment of filter loading as reflected by air-pressure loss through the filter, and the sensors must be connected to the BAS (where applicable).

e. Where occupancy requirements or building functions are likely to generate airborne particles, vapors, gases and other contaminants that result in concentrations exceeding safe and healthy levels special air filters or air cleaning components must be provided for the supply and return air or dedicated and localized exhaust systems must be used to contain these contaminants.

5. Humidification
   a. Unless otherwise identified in the Owner's Project Requirements, space humidification systems are not necessarily required for normal comfort HVAC design applications. For the purpose of controlling indoor air contaminants that may be determined as contributing to unhealthy environmental conditions or for the control of special use spaces like asset storage or computer room spaces, make reasonable provisions in HVAC System equipment selection and system design to permit the increase or decrease of indoor humidity levels.

   b. Where humidification is necessary, electronic or steam-to-steam generators must be used to produce atomized hot water, clean steam, or ultrasound vapor.

   c. All equipment and steam dispersion piping associated with humidification equipment must be stainless steel.

   d. Humidifiers must be centered on the air stream to prevent stratification of the moist air.

   e. When steam is required during summer seasons for humidification or sterilization, a separate clean steam generator must be provided and sized for the seasonal load.

   f. Makeup water for direct evaporation humidifiers must originate directly from a potable source. Chemically treated water must not be used for humidification. Humidifiers must be designed so that microbiocidal chemicals and water treatment additives are not emitted in ventilation air.

   g. Each humidifier must have remote control and supervisory capability for integration with BMS or other supervisory control and monitoring systems as identified in the Owner's Project Requirements.

6. Cooling and Heating Coils
   Select finned-tube cooling coils to ensure that the coils can be cleaned. Dehumidifying coils must be selected to prevent water droplet carryover beyond the drain pan at design conditions. All hot water heating and chilled water-cooling coils must be copper tube and copper finned materials. Equipment and other obstructions in the air stream must be located sufficiently downstream of the coil so that it will not come in contact with the water droplet carryover. Cooling coils must be selected at or below 500 fpm face velocity to minimize moisture carryover. Heating coils must be selected at or below 750 fpm face velocity.

D3050.90 FACILITY DISTRIBUTION SYSTEMS SUPPLEMENTARY COMPONENTS

1. Drains and Drain Pans
   Drain pans must be made of stainless steel, adequately sloped and trapped to ensure drainage. Overflow connections must be provided and connected to the sanitary or storm line in accordance with Code.

2. Testing Of Air Distribution Systems
   Air distribution systems must be tested twice for leakage; during the construction process, before the installation of insulation and after all connections to terminal units, air delivery and return devices, and return air and exhaust air fans have been made.

3. Controls For HVAC Components
    a. Each piece of mechanical equipment must have remote control and supervisory capability for integration with BAS or other supervisory control and monitoring systems as identified in the Owner's Project Requirements. Each piece of equipment must have a metering device for transmitting energy and water consumption data and, if applicable, a current-sensing device for transmitting fan and/or pump motor energy consumption data.
    b. Integrate the control hardware and software to protect against component freeze-up and allow for optimum operating cycles, including "free cooling" (whenever justifiable) and fire/smoke control.

4. Meters, Gauges, And Flow Measuring Devices
    a. Each piece of mechanical equipment must be provided with instrumentation or test ports to verify operating performance parameters such as delivered capacity, pressure, temperatures, flow rates, water, gas, electric and energy consumption.
    b. Each meter, gauge, and flow measuring device must be calibrated before start-up and must have provisions for periodic calibration at its location. Permanent or temporary testing stations must be provided for startup and testing of building systems. Connections must be designed so that temporary testing equipment can be installed and removed without shutting down the system.
    c. System test and monitoring equipment must have remote control and supervisory capability for integration with BAS or other supervisory control and monitoring systems as identified in the Owner's Project Requirements. For further information on advanced metering see Electrical Engineering section in this Section.

D3060 VENTILATION

D3060.30 EXHAUST AIR

1. Emergency Generator Venting
    a. A positive pressure rated, U.L listed double wall insulated metal breeching and chimney system may be used downstream of an emergency generator engine exhaust silencer. All engine exhaust venting upstream of emergency generator silencer must be insulated schedule 40 black steel pipe with welded joints. Piping system to be sized, designed and installed for generator back pressure. Provide a controlled means of engine deflagration (overpressure) relief in accordance with engine manufacturer's recommendations and safety requirements.
    b. Evaluate engine exhaust pipe and vent system's potential for expansion and contraction and show all provisions for anchoring, guiding, and compensation on the drawings. As required, coordinate with Structural work for the design of all attachments of pipe and vent supports, guides and fixed anchoring locations to the building structural systems.

2. Post Fire Smoke Purge Venting
    a. A means of providing post fire smoke purge must be provided where required by NYC Code. The means of smoke purge should be by dedicated exhaust equipment whenever possible to avoid potential smoke contamination of HVAC System supply, return and outdoor air ventilation ducts, fans, filtration and heating cooling equipment. Design and plan suitable means of access to smoke contaminated duct interior surfaces and equipment components for the purpose of cleaning and restoration after a smoke purge event.
    b. Smoke purge control isolation dampers.

i. Select the appropriate temperature rating and leakage class for combination fire-smoke dampers utilized for the control of the post fire smoke purge system. Isolation dampers must be provided with an override feature, which must be activated by the NYC Fire Department at the smoke purge control pane.

ii. HVAC System design temperature rating. HVAC System ducts, fans and accessory equipment utilized for the purpose of providing post fire smoke purge should be designed for a "cold smoke condition" that could produce temperatures above the standard HVAC equipment design upper operating temperature limit of 140 F.

D3060.40 OUTSIDE AIR

1. The fresh air intakes and exhaust must be located so as not to introduce pollutants to the inhabited space. Furthermore, size the louver/grille for reduced air velocity to minimize noise, pressure loss, and rain/snow carryover through the intake. Incorporated drains at the building and AHU intakes.
2. Roof mounted intakes, fans, and AHU, must be preferably set on minimum of 18" high curbs, support rails and other means of equipment support.
3. All exterior louver designations must clearly indicate size, gross and net free area. Exterior louvers, including outdoor air intake louvers and fan discharge louvers, should be located and positioned to deter potential vandalism.

D40 FIRE PROTECTION

D4010 FIRE SUPPRESSION

D4010.00 FIRE SUPPRESSION GENERAL

1. All fire suppression and extinguishment systems and equipment will be designed and engineered.
2. Fire Suppression Seismic Design
   Fire Suppression Systems and Equipment Items Requiring Restraint- Fire suppression sprinkler and standpipe piping, hose manifolds/racks, fire supply water storage tankage, fire department apparatus water supply connections (siamese), and water pumping equipment associated with building life safety systems or other critical fire extinguishing equipment that must be maintained functional and operational during and in the aftermath of a seismic event, will be designed for seismic forces and adequately restrained.

D4010.10 WATER BASED FIRE SUPPRESSION

1. A water-mist fire extinguishing system will be installed in accordance with the NYC Codes and NFPA 750 Standard on Water Mist Fire Protection Systems in accordance with their listing and as amended by the Codes.
2. An automatic sprinkler system will be installed in accordance with the NYC Codes and NFPA 13 Standard for the Installation of Sprinkler Systems and as amended by the Codes.
3. Standpipe systems will be installed in accordance with the NYC Codes and NFPA 14 Standard for the Installation of Standpipes and Hose Systems and as amended by the Codes.

4. For buildings one hundred fifty feet or less in height, the minimum standpipe riser pipe size will be 4 inch. For buildings greater than one hundred fifty feet in height, the minimum standpipe riser size will be 6 inch. The height of a building determined for the purpose of standpipe riser design, will be that of the individual riser to the highest hose outlet (not including manifold outlets) from the level of the entrance floor at street level at which the riser begins.
5. Unless otherwise permitted by the NYC Codes, Class III standpipe hose connections will be provided in every required egress stairway, and a hose connection will be provided for each floor level above or below grade. Hose connections will be readily accessible and located at the riser on each floor-level landing and on the entrance floor above the standpipe riser control valve.
6. Unless otherwise permitted by the NYC Codes, a Class III Standpipe System will provide a 1-½ inch hose station to supply water for use by building occupants and a 2-½ inch hose connection to supply a larger volume of water for use by the NYC Fire Department (FDNY) and those trained in handling heavy fire hose streams.
7. The number of standpipe risers provided will be designed and arranged so that all locations of every floor can be reached by the flow of a single twenty foot hose stream supplied from a hose nozzle attached to not more than one hundred twenty-five feet of hose connected to a standpipe riser outlet valve.
8. Standpipe systems that include more than one (1) pipe riser will have all risers horizontally cross-connected at, or below, the street entrance floor level. Where there is no cellar, standpipe riser cross-connection may be located at the ceiling of the lowest story
9. Cross-connections will be sized at least as large as the largest standpipe riser cross connected. When supplying only two (2) 4 inch standpipe risers, the cross connection will not be sized less than 5 in. For all other standpipe riser cross-connection configurations. the cross-connecting pipe will not be sized less than 6 in.
10. Each Fire Department apparatus water supply (siamese) provided to the building must be connected to the standpipe system. The water supply pipe from the apparatus water supply connection to the individual riser pipe or cross connecting pipe will be 5 in., except that a 4 inch water supply pipe is permitted when supplying a single 4 inch standpipe riser. The pipe from the apparatus water supply connection must be run as directly as practicable to the individual riser pipe or cross connecting pipe.
11. The fire suppression system will be an integrated system of underground and overhead piping, fittings, valves, auxiliary equipment and appurtenances designed in accordance with accepted fire protection engineering standards. The system will include a suitable and approved water supply. The portion of the system above the ground will be a network of hydraulically designed piping installed in a structure or area, generally overhead, and to which automatic sprinkler devices are connected in a systematic pattern. The system will be activated by heat from a fire and discharge water over the fire area.
12. Fire Pumps
    a. A sprinkler booster pump or fire pump system will be provided if the fire suppression system hydraulic calculations indicate that City water pressure is inadequate to properly pressurize the highest floor sprinkler heads or supply the required standpipe hose stream demand. A five (5) psi safety factor must be used in the system hydraulic calculations prepared
    b. Every automatic fire pump will be designed to draw from two (2) independent street water mains in different streets,
    c. Where two services are installed, one service from the street water main must be run directly to the pump, and the other service may be used for domestic water supply. The connection from water to the mains to the pumps must be at least six inch - 6 inch pipe size
    d. An automatic fire pump may draw from a single water main if augmented by a suction tank or tanks, and if the valves at the meter and pump are provided with tamper switches that are wired to an approved central station of an operating fire alarm company

e. In the event that two separate and distinct water mains are not available as a supply or the City water mains cannot produce the required supply flow and pressure, there must be provided a suction tank, or tanks, suitably located and of sufficient capacity to furnish the fire pump with at least a one-half hour supply at the rated capacity of such pump. Suction tanks must be filled by a six inch - 6 inch connection to the water main, controlled by an automatic ball float valve in the suction tank. A six inch - 6 inch bypass must be provided so that pumps may be fed directly from the street water main.

13. Wall Hydrant Requirements
A freeze proof wall hydrant must be provided every 150 feet length of the building façade so that hoses, with maximum length of 75 feet, can service the entire facility. Provide a minimum of one freeze-proof wall hydrant on each wall façade.

D4010.50 FIRE EXTINGUISHING

1. Where the discharge of water would be deleterious or hazardous, the installation of alternative automatic fire-extinguishing systems complying with the NYC Codes can be permitted in place of automatic sprinkler protection where recognized by the applicable NFPA Standard and approved. Such a system can be accepted where the nature of the fire hazard is such that water would be ineffective or hazardous as an extinguishing agent, or the need to preserve the historic, irreplaceable or special nature of the contents of the occupancy prevents against the installation of a sprinkler system.
2. Where approved, automatic sprinklers may not be required in the following rooms or areas where such rooms or areas are protected with an approved automatic fire detection system in accordance with NYC Codes that will respond to visible or invisible particles of combustion, and where an approved automatic fire-extinguishing system is provided:
    a. Any room or space where the application of water, or flame and water, constitutes a serious life or fire hazard.
    b. Any room or space where sprinklers are considered undesirable because of the nature of the contents.
    c. Generator or transformer rooms. This exemption must not apply to a generator or transformer rooms unless such room or space is separated from the remainder of the building by walls, floor, ceiling or roof assemblies having a fire-resistance rating of not less than 2 hours where the generator in such room is not using high pressure flammable gas in excess of 15 psi. As its fuel source.
3. Clean agent fire extinguishing systems will be installed in accordance with the NYC Codes and NFPA 2001 Standard on Clean Agent Fire Suppression Systems in accordance with their listing and as amended by the Codes. If a clean agent fire extinguishment system using a fixed amount of extinguishing agent is approved to be installed in place of a required sprinkler system, a connected reserve of charged agent cylinders equal to the primary supply must be provided.
4. Where a room or space protected by an approved clean agent fire extinguishing system, a fixed emergency forced ventilation is required. When the protected area is normally occupied, a fixed emergency forced ventilation system enough to accomplish at least six (6) air changes per hour of the flooded protected area must be provided unless all of the following apply:
    a. The clean agent fire extinguishing system is used to extinguish a Class A Fire for ordinary solid combustibles such as paper, wood, cloth and some plastics.
    b. The design concentration does not exceed the “no observable adverse effect level” for halocarbon agents, or “no effect level” for inert gas agents as defined in NFPA 2001 and amended by the NYC Codes.
    c. If other than inert gas agents are used, the quantity of the thermal decomposition products formed from such agents is below the dangerous toxic load (DTL) for humans as described in Meldrum's

"Toxicology of Substances in Relation to Major Hazards: Hydrogen Fluoride" (HMSO, London, 1993). Upon request by the City, documentation of a hazard assessment of thermal decomposition products formed from such fire extinguishment agents must be filed with the City.

D50 ELECTRICAL

D5010 FACILITY POWER GENERATION

D5010.00 FACILITY POWER GENERATION GENERALS

1. Emergency And Standby Power Systems
2. Emergency power systems legally required standby power systems and optional standby power systems will be designed to comply with the requirements of the NYC Building Codes, Electrical Code, Fire Code, NYC Zoning Resolutions, NFPA 110, and NFPA 111. Compliance with NYC Electrical Code, Article 700 for the electrical safety of the installation, operation, and maintenance of emergency and standby systems is required. The electrical engineer will coordinate with the mechanical engineer, structural engineer and architect on the design of the emergency / standby power generator system.
    a. Applicability of Zoning:
        i. The location of emergency power system equipment and standby power system equipment on the building exterior and building Lot will comply with applicable zoning resolution restrictions including : obstructions in open space, public plaza; obstructions in required yards or rear yard equivalent; obstructions for height and setback; special purpose districts requirements; special flood hazard zone, tidal wetlands zone, fresh water wetlands, and coastal erosion hazard areas.
        ii. For Electric Plan Review, the following will be provided and shown:
            1. When an emergency or standby generator is part of a 1000 KVA or smaller system and the generator is rated below 1000 KVA, a one-line diagram showing how the generator is connected to the system can be submitted for the Electrical Plan Review. Include grounding of the generator frame and neutral bonding. If the generator is part of a system larger than 1000 KVA and rated 1000 KVA or larger, a room layout will be submitted in addition to the one-line diagram. Grounding for the emergency generator will be provided. Determine if a separately derived grounding system will be used.
            2. See Section D5020.00 Design Parameters for additional guidance on electric service design, arrangement and equipment protection requirements. Observe applicable requirements for emergency and standby power system distribution design arrangement and equipment protection.

    b. Classification of Emergency Power Systems:
    The class and type of Emergency Power System will be Class 6, providing a minimum of 6 hours of operating time at rated system load without being refueled and Type 10 limiting load transfer time to a maximum of 10 seconds with the load terminals of the automatic transfer switch set at 90 percent of both the rated voltage and frequency (Ref. NFPA 110). For modification of emergency power system equipment general performance requirements, refer to the Owner's Project Requirements (OPR) and the specific project requirements.

    c. Emergency Power System
    The emergency power system will supply power to designated electric loads through the operation of an automatic transfer switch upon failure of the normal supply. Automatic transfer switches will be provided with a maintenance bypass switch to allow the automatic transfer switch to be maintained while still providing power to the building. Emergency power loads will include life safety and critical building equipment:

i. Emergency lighting (must include all required egress lighting, illuminated exit signs,)
ii. Fire alarm system and Automatic fire detection systems
iii. Carbon Monoxide and natural gas leak detection and alarm system.
iv. Emergency voice/alarm communication systems including FDNY auxiliary radio communication (ARC) systems
v. Smoke control and exit stairway pressurization systems.
vi. Fire pump, Sprinkler Booster pump and Pressure maintenance (jockey) pump.
vii. Select lighting for security office, electrical and mechanical rooms.
viii. Air compressors serving dry-pipe or pre-action sprinkler systems.
ix. Power and lighting for fire command center and security control center.

d. Legally Required Standby System:
   i. Classification of Legally Required Standby Power Systems:
   The class and type of Legally Required Standby Power Systems will be Class 6, providing a minimum of 6 hours of operating time at rated system load without being refueled (see Ref. Chapter 4, NFPA 110) and Type 60 limiting load transfer time to a maximum of 60 seconds with the load terminals of the automatic transfer switch set at 90 percent of the both the rated voltage and frequency. For modification of required standby power system equipment general performance requirements, refer to the Owner's Project Requirements (OPR) and the specific project requirements.
   ii. This required standby power system will automatically supply power to selected electric loads (other than those classified as the emergency system loads) through the operation of an automatic transfer switch upon failure of the normal power source. Required standby power loads will include:
      1. Smoke control and exit stairway pressurization systems.
      2. Fire service access elevators and associated controllers and the cooling and ventilation equipment serving their machinery rooms and machinery spaces (simultaneously all designated elevators). Visitor screening equipment.
      3. Occupant evacuation elevators and associated controllers and the cooling and ventilation equipment serving their machinery rooms and machinery spaces (simultaneously all designated elevators).
      4. Power and lighting for fire command center and security control center.
      5. Telephone switches and fiber cable battery systems.
      6. Mechanical control systems.
      7. BASs.
      8. Uninterruptible power systems serving technology/server rooms.
      9. HVAC systems for technology/server rooms, UPS rooms, and communications rooms.
      10. Exhaust fan in UPS battery rooms.
      11. FAA aircraft flight path obstruction warning lights.
      12. Domestic water booster pumps (high rise buildings).

e. Optional Standby System:
   This system will supply power to the facilities or property where life safety does not depend on the performance of the system. The optional standby system will supply power to selected building loads, either automatically or by manual transfer switch. Optional standby system loads may include:
   i. General equipment areas of the buildings.
   ii. HVAC and refrigeration system. equipment
   iii. Data processing and communications system. equipment
   iv. Receptacles and emergency lighting in large conference rooms to facilitate command and control operations during an emergency situation.
   v. Additional building loads as required.

D5010.10 PACKAGED GENERATOR ASSEMBLIES

a. Generator System
The emergency and standby generator system will consist of one or more central engine generators and a separate distribution system with automatic transfer switches, distribution panels, lighting panels, and, where required, dry-type transformers feeding 208Y/120V panels. The generators and the generator control panel will be located in separate rooms or enclosures.

b. Capacity
The engine generators will be sized to serve approximately 150 percent of the design load and to run at a maximum of 60 percent to 80 percent of their rated capacities after the effect of the inrush current declines. When sizing generators, the initial voltage drop on generator output due to starting currents of loads will not exceed 15 percent.

Emergency and legally required standby power systems must have adequate capacity to safely carry all loads expected to operate simultaneously. A temporary alternate source of power must be available whenever the emergency or standby generator is temporarily out of service. If the alternate power source lacks adequate capacity to temporarily carry the entire connected load, it must have automatic and selective load pickup and load shedding capability to ensure adequate power supply to loads in the following order of selected priority:

i. Emergency circuits
ii. Legally required standby circuits
iii. Optional standby circuits.

c. Load Bank
i. A permanently installed electric load bank, sized at a minimum of 50 percent of generator rating, will be provided. The load bank will be factory mounted to the engine radiator assembly. Select materials of construction that will tolerate the high temperatures associated with radiator-mounted load banks
ii. For diesel generators, the load bank will provide a load add/ shed feature that will maintain load levels at the generator manufacturer's recommended minimum load. The load bank will have a minimum of four automatic load taps controlled by a load add/shed relay incorporated into the run circuit on the generator.

d. Remote Annunciators
Provide remote annunciators for the emergency generator; quantity and locations, as required.

e. Exterior Noise Control
The design and installation of new or replacement emergency and standby generator equipment on City owned facilities or properties, and the modification of existing fixed equipment, when located outside of the building – in a yard, court, on a roof, or where the equipment opens to the exterior of the building – will be subject to the requirements of the New York City Noise Code and NYC DEP noise control regulations.

i. Objectives
Provide a proactive design approach, to assure full compliance with the Code. Evaluate, specify and install manufactured equipment with the least available sound output and/or with sound mitigating accessories.
ii. Outdoor Noise Propagation
In the development of emergency and standby generator equipment selection, take into consideration the effects of outdoor noise propagation from the site property to nearby "sensitive receiver" properties and make recommendations for the further evaluation of existing noise conditions at the site and/or the selection of Noise Control Measures (NCM) designed to adequately address Code requirements.
iii. Exterior Acoustical Assessment

Acoustical design compliance strategies will include but not be limited to the following:

1. Retain (as required) the services of an acoustical sub- consultant with minimum qualifications and experience in accordance with the rules of the NYC Department of Environmental Protection (DEP).
2. Perform an initial inspection and evaluation to identify location and distance from the project site of any potential line of sight sound receptor locations that may be affected by the proposed work, particularly "sensitive receiver" properties.
3. Establish and document existing baseline ambient noise level conditions, identify any observed sound produced by existing exterior equipment that exceeds Code threshold, and request from NYC DEP a history of violations and/or complaints.
4. Prepare and submit an acoustical analysis of the maximum resultant sound pressure levels resulting from the proposed work, including noise level testing data and manufacturer's equipment operating performance documentation.
5. Confirm that the proposed emergency and standby generator system design and installation will comply with the New York City Noise Code, identify an alternative design approach, or recommend supplementary noise control measures (such as engine exhaust silencer(s), acoustical equipment enclosure, ultra-quiet cooling fans, unit lagging, external intake/exhaust silencers) that will limit acoustical energy propagation beyond the site property limits to Code compliant levels.
6. Specify the required Noise Controlled Inspections to be performed by the testing agency of the operating noise level (ambient, directional) after new or replacement of exterior mechanical equipment is installed.
7. Define the maximum permissible emergency and standby generator sound power levels for each unit and reflect these dB values in the performance specifications for the project. The maximum sound power levels will comply with NYC Noise Code limitations and be based on specific project conditions such as the nature of unit mounting (dunnage), roof deck construction, noise reduction coefficient of suspended ceiling, sound trap attenuation characteristics, etc.

D5020 ELECTRICAL SERVICE AND DISTRIBUTION

D5020.00 DISTRIBUTION GENERAL

1. Electric power must be designed to serve all interior and exterior lighting including parking lot lighting, all mechanical and plumbing equipment motor loads and controls, fire suppression system equipment motor loads and controls, specialty equipment and general receptacles, elevators, dumb waiters, fire alarm, mechanical alarms and security systems, communication equipment and other miscellaneous equipment as required for the project.
2. The location of the electric service room with must be provided with a compliant means of egress. The legal exit(s) to which egress door(s) lead will also be shown.
3. Means of adequate ventilation of the electric service room when the service equipment totals 2000 KVA or larger must be provided.

D5020.10 ELECTRICAL SERVICE

1. Electricity Metering
   a. Flexibility
      Service equipment will be designed to have adequate capacity to serve the load of the facility plus 25% future expansion.
   b. Electric Service Request
      Submit to the utility company a site plan showing the building property line, electric service entrance, equipment room, and a breakdown of the electric load (load letter).

The request will inquire about the available service voltage, utility short circuit current and impedance, metering requirements, charges and any other requirements.

The request will also indicate the desired voltage and Point of Entry (POE) into the building or to property line manhole or hand hole, to provide a reasonable route to the electrical room.

c. Metering
Provisions for utility company's metering will be made at the service entrance.

d. Monitoring
Provisions will be made to monitor voltage, amps, kilowatt hour, power demand, and power factor.

2. Transformers
   a. All transformers will, as a minimum, have K-13 rating and have 200% rated neutral.
   b. Transformers for lighting and receptacle service will be two-winding per phase, dry type of capacity to serve the lighting and receptacle loads specified.
   c. Transformers will have 2 ½% taps, two above and two below rated voltage.
   d. Transformer windings will be copper. Transformers will have primary and secondary winding protection.
   e. Dry type transformers up to 45 KVA will have dB ratings not to exceed 45 dB, and above 45 KVA will not exceed 55 dB.
   f. Transformer grounding must be included.

3. Protection Devices
   a. All fuses and/or circuit breakers must be coordinated for selective short circuit overcurrent protection.
   b. The available short circuit current protection at the point of service entrance and at the point of change in the interrupting rating of the overcurrent protection must be included in the design. Where used, series ratings will be provided.
   c. Design and provide a one-line diagram indicating the service equipment and the distribution equipment up to the 2nd level overcurrent protection, showing all overcurrent devices with their ampere rating, make and type, interrupting current ratings and bus and wire sizes. Frame and trip sizes for circuit breakers will be indicated.

D5020.30 POWER DISTRIBUTION

1. Panelboards
Main power and distribution panel bords, and lighting and receptacle power panelboards, will be located in electrical rooms and closets. Secondary lighting and receptacle panelboards will be located adjacent to the loads they serve. Centrally located electrical closets, which should be stacked in multi-story buildings
   a. Power and distribution panels I will be of the circuit breaker type.
   b. Lighting and receptacle panels will be of the circuit breaker type with bolt on branch circuit breakers and must have door-in-door trim.
   c. In panelboard selection provide twenty-five percent spare circuit breakers
   d. Panelboards serving non-linear loads will have a 200% rated neutral.
   e. All power distribution, lighting and receptacle panelboards must be provided with circuit number, circuit breaker trip rating, load in volt-amperes for each circuit, load description and location, summary of connected load and demand load.

f. For fused switch panels, show switch and fuse rating. Show service voltage, phase, bus rating, short circuit current ratings, main circuit breaker or switch and fuse if required. Indicate panel location and type of mounting.

2. Motors And Motor Control Centers
   Design and specify power for motors and controls. Motor Control Centers (MCC) will have combination magnetic motor starter and fused disconnect. Each starter will have hand-off auto switch, control transformer, pilot light, two auxiliary contacts, and an external manual reset button.
3. Conduit And Wiring
   All conduits will be ¾" minimum size and run concealed where possible. Heavy wall, rigid, galvanized steel conduit will be installed where exposed or where required by Code. Electrical Metallic Tubing (EMT) will be installed concealed in hung ceilings or walls. Compression fittings I will be used for EMT. Armored cable will not be used. Aluminum conduit and wire will not be used. Flexible conduit will only be used for short lengths.
   a. Provide a drag wire in all empty conduits.
   b. Cable connectors will be of the copper pressure plate type. Connections to bus bars for cable sizes number 1/0 and larger, will be made with two zinc-plated bolts.
   c. Power wiring will be sized to limit the voltage drop in branch circuits to 2% to the farthest outlet, and to 5% total for feeders and branch circuits.

D5020.70 FACILITY GROUNDING

1. Grounding System
2. Grounding systems will be designed to be coordinated with the specific type and size of the electrical distribution system, including the following applicable generic types of grounding systems or grounding components:
   a. Separate Equipment Ground Conductor
      i. The types, sizes, and quantities of equipment grounding conductors will comply with NYCEC, Article 250, unless specific types, larger sizes, or more conductors than required by code are indicated.
      ii. Insulated equipment grounding conductors will be installed with circuit conductors for the following items, in addition to those required by the code:
         1. Feeders and branch circuits.
         2. Lighting circuits.
         3. Receptacle circuits.
         4. Single-phase motor and appliance branch circuits.
         5. Three-phase motor and appliance branch circuits.
         6. Flexible raceway runs.
         7. Metal clad cable runs.
         8. Cable trays (bond each individual section).
   b. Busway Supply Circuits
      Insulated equipment grounding conductors will be installed from the grounding bus in the switchgear, switchboard, or distribution panel to the equipment grounding bar terminal on the busway.
   c. Separately Derived Grounds
      To minimize extraneous "noise" on certain systems, particularly those in which harmonics are generated; the specific system grounds will be separated before grounding at the service grounding electrode or counterpoise.

d. Isolated Grounds
Isolated grounds will be applied where the equipment served may be particularly sensitive to external interference from sources generating third harmonics and higher. In these instances, the grounds beginning from the panelboard ground and the grounding conductor from the raceway to the grounding terminal at the receptacle or outlet box, will be electrically isolated from the main grounding system. The isolated grounds will terminate at a common ground or counterpoise.

e. Raised Floor
All access floors will be grounded. A grounding conductor will be bonded to every other floor pedestal and extended to the technology/server room common ground bus.

f. Counterpoise
Where feasible, a grounding conductor (counterpoise) will be provided in an isosceles triangle configuration with sides greater than or equal to 10 ft. The conductor will be tinned copper not less than No. 4/0 AWG and be electrically connected to the incoming domestic water services (provided the piping for the water service is a conducting material) on either side of the building as well as the various clusters of three ground rods spaced at intervals. Ground rods will be 5/8 in. diameter by 96 in. long and be zinc coated copper. The counterpoise loop will involve direct burial in earth 24 in. below grade. The following items will be connected to the counterpoise loop. All ground rod and grounding connections will be exothermically welded:
   i. Lightning protection system “down conductors”.
   ii. Transformers in substations.
   iii. Emergency generator ground.
   iv. Telecom and data room grounds.
   v. Separately derived grounds.
   vi. Isolated ground panels.
   vii. Main switchgears.
   viii. Normal and emergency distribution systems.
   ix. Flagpoles.

g. Common Ground System
Provide a common ground bus throughout the building. A common ground bus will originate from the main service entrance and run up through stacked electrical rooms, where an insulated wall-mounted copper ground plate will be installed for connecting any equipment needing a common ground.
   i. All transformers, switchboards and panelboards will be designed with ground bus and be properly grounded.
   ii. The neutral of the emergency generator will be grounded to the ground electrode.

D5020.90 ELECTRICAL SERVICE AND DISTRIBUTION SUPPLEMENTARY COMPONENTS

1. Arc Flash
Perform an Arc Flash analysis for the entire building electrical distribution system. The data from the arc flash calculations for individual pieces of electrical equipment will be transposed to NFPA 70E-approved labels and all panelboards, motor control centers, switchgear, and major electrical equipment will be appropriately labeled and protection boundaries delineated per OSHA 1910 Subpart and NFPA 70E requirements.

2. Short Circuit and Coordination Study
   Perform a preliminary short circuit analysis for building electrical power distribution systems. A final short circuit and coordination analysis will be completed by the electrical contractor's testing agency or by an independent testing agency, and a report will be submitted for Record.

D5030 GENERAL PURPOSE ELECTRICAL POWER

D5030.50 WIRING DEVICES

1. Receptacle Outlets
   a. Provide conduit grounding for general convenience receptacles. Ground conductors will be provided for individual circuits to receptacles for computers and all other dedicated equipment.
   b. Provide Ground Fault Interrupter (GFI) type receptacles in mechanical equipment rooms, wet locations, and near sinks in labs and lavatories.
   c. Provide duplex receptacles for servicing HVAC equipment (125 volts, 20 amps, specification grade, GFCI protected) within 25 ft. of the equipment.
   d. Provide duplex receptacles for maintenance (125 volts, 20 amps, specification grade) so that all areas are accessible by a 50 ft. extension cord.
   e. In storage rooms, provide a minimum of one (1) duplex convenience receptacle.
   f. Provide duplex convenience electrical outlets in offices (125 volts, 20 amps) spaced approximately twelve (12) ft. maximum on center around the perimeter of the room.
   g. In offices a maximum of four (4) computer duplex receptacles will be connected to a 20 amp circuit, and a maximum of eight (8) general convenience duplex receptacles will be connected to a 20 amp circuit.
   h. Separate circuits must be designed for copiers, water coolers, fax machines, printers and other office equipment.
   i. Provide TVSS duplex receptacles with LED indicator, where required, for protection of plug-in microprocessor-based equipment.
   j. Refer to the Owner's Project Requirements (OPR) and the specific project requirements for additional guidance.

D5040 LIGHTING

D5040.00 LIGHTING GENERAL

1. Lighting Calculations
   a. Computer generated lighting calculations are required.
   b. Calculations will show horizontal illuminance at ground level. Light loss factor of 0.7 must be used for calculations. In general, Illuminating Engineering Society (IESNA) standards will apply (up to 15% deviation is permitted).

2. Indoor Lighting Design Criteria
   a. Museum standards for lighting works of art will follow the IES Handbook; Installation Standards, in Fine Arts Collection Policies and Procedures
   b. Exit enclosures where Photoluminescent materials are installed will comply with the requirements in NFPA 101.
   c. Emergency electric lighting systems will consist of separate luminaries and wiring with an independent power source, e.g., an emergency or standby power generator, or separate luminaries

or unit devices supplied by the normal power supply and a secondary source that comes on automatically when the normal power supply fails.

d. Emergency lighting for means of egress will be provided in accordance with the requirements in NFPA 101. Emergency lighting outside the building will also provide illumination to either a public way or a safe distance away from the building, whichever is closest to the building being evacuated.

3. Exterior/Site/Security Criteria (Refer To G4050)
4. Energy Efficiency
   a. Lighting efficacy (lumens per watt) and lamp life will be primary considerations in interior lighting design.
   b. Utilize the latest technology LED lights for indoor and outdoor applications where brightness, tight focus, and long lamp life are priorities.
   c. Incandescent lamps will be specified only where necessary, in limited applications and areas, such as theatrical lighting, track lighting for exhibits, historic interiors, and hazardous areas. Where feasible, low-voltage halogen will be used in place of standard incandescent.
   d. Do not exceed recommended spacing criteria for overhead ambient lighting fixtures.

D5040.10 LIGHTING CONTROLS

All interior lighting will be automatically controlled by a programmable Lighting Control Panel (LCP) with integral clock except for the emergency lighting.

1. Each area enclosed by walls or floor to ceiling partitions will have at least one switch to control the lighting within.
2. For spaces 2,000 sf. or less in area, lighting will be controlled by ceiling mounted occupancy sensors and override switch.
3. Enclosed office lighting l will be controlled by ceiling mounted occupancy sensors with override switch.
4. Libraries and Places of Assembly will generally be provided with key operated switches.
5. Corridor, Lobby and Toilet Lighting will be controlled automatically from the Lighting Control Panel.
6. Corridor and Stair Emergency Lighting will be unswitched.
7. Special light controls will be provided for certain applications, as required.
8. Control systems will be compatible with lamps, light sources, ballasts and lamps.
9. Lighting controls will use individual luminaire control,
10. Ambient lighting will be adjusted per daylight availability, occupant/vacancy, and other BAS signals, such as demand response.
11. Task and personalized ambient lighting will be adjusted per occupancy/vacancy and personal dimming.
12. Lighting controls will be commissioned to operate as intended without false triggering.
13. All lighting controls will be compatible with luminaires.
14. Lighting control devices provided for illumination within exit enclosures will comply with the requirements in NFPA 101.
15. Occupancy sensors and Time Clocks - Use infrared, ultrasonic, and microphonic occupancy sensors. Dual technology infrared and ultrasonic combination-type sensors are recommended. Sensors should be manual- on, automatic-off, particularly when used in naturally lit spaces. Where occupancy sensors are not practical, time controls will be used.

16. In new construction and substantial reconstruction, all exterior/site/security lighting will be master controlled by the lighting management system.

D5040.50 LIGHTING FIXTURES

1. Interior Lighting
   a. Lamps
      i. Effort will be made to minimize the number of lamp types within a facility to simplify lamp maintenance.
      ii. In retrofit scenarios, all fluorescent lamps will be recycled by firms that recover the mercury that is contained within the lamps. All PCB containing ballasts t will be disposed of through specialized disposal firms that destroy the PCBs. All applicable lamps must be Energy Star certified as applicable.

   b. Retrofitting LED lamps
      i. LED lamps will not be retrofitted into existing luminaires unless the retrofitted product meets all of the following requirements:
      ii. UL rating is maintained for ENTIRE fixture to include UL 1598C and UL 1993.
      iii. If LED product category is certified by the Design Lighting Consortium (DLC), it is published on their Qualified Products website: https://www.designlights.org/
      iv. Retrofitted lamps will be tested by a recognized Testing Laboratory in accordance with IES standards LM-79, LM-80, and TM-21.
      v. Minimum total fixture efficacy of 100 lumens per watt (total efficacy is a combination of lamp plus driver plus ballast).
      vi. Product will be dimmable and compatible with existing lighting control systems and future daylighting technologies.
      vii. LED products will have a “low risk” level of flicker (light modulation) of less than 5%, especially below 90Hz operation to prevent photosensitivity epileptic seizures as defined by IEEE standard 1789-2015LED.
      viii. For common office areas, LED product will be dimmable and compatible with existing lighting control systems and provide a path to compatibility with future daylighting technologies, or reduced power consumption by at least 50% for non-controlled fixtures.
      ix. For back office areas, electrical, mechanical, and corridors, LED products do not have to be dimmable but compatible with existing lighting control systems and reduce power consumption by at least 50%.
      x. Space photometrics and glare control will meet IES guidelines for tasks performed in the retrofitted spaces.
      xi. A mock up retrofit of typical areas of the building is required to confirm the above performance requirements of lighting output suitability, controllability and flicker measurements.
      xii. Minimize lamps, light sources ballasts and driver types.

   c. Ballasts and Drivers
      i. Ballasts for fluorescent lamps will be “NEMA Premium” when applicable. Ballasts will be compatible with lighting control system.
      ii. Electronic ballasts and drivers will be used wherever possible and have a sound rating of “A.”
      iii. When EM ballasts are be used in special applications, EM ballasts will have a sound rating of “A” for 430MA (Standard Output) lamps, or “B” for 800 MA lamps, and “C” for 1,500 MA lamps.
      iv. Special consideration will be given to the ballast types where an electronic clock system is also specified to confirm compatibility of application.
      v. Instant-start ballasts are preferred, except where lamp replacement is difficult.
      vi. Dimming ballasts are preferred, particularly in naturally lit spaces. Dimming ballasts with minimum settings less than 5% of full output should be limited to spaces with audio/visual equipment or similar program.

vii. In spaces without full-time stationary occupants, utilize stepped ballasts, or multiple level switching, in lieu of continuous dimming ballasts.

2. Emergency Lighting
   a. Emergency lighting for means of egress will illuminate designated stairs, aisles, corridors, ramps, escalators, walkways, and passageways leading to an exit. Emergency lighting will be provided at exit discharges extending to the public way and for safety and security Refer to the Owner's Project Requirements (OPR) and the specific project requirements for additional guidance.
   b. Emergency lighting will be provided in accordance with the requirements of NFPA 101. At a minimum, un-switched emergency lighting (to serve as night lights)t will be provided in the following areas:
      i. Zones covered by closed-circuit TV cameras.
      ii. Security zones.
      iii. Fire command center.
      iv. Security control center.
      v. Where required in NFPA 101.
      vi. UPS and battery rooms.
   c. Emergency lighting will be manually switched from within for the following areas:
      i. Communication equipment rooms.
      ii. Electrical rooms.
      iii. Technology/server rooms.
      iv. Engineers' offices.
   d. Supplemental battery-powered emergency lighting will be provided in the following spaces to bridge the generator startup time:
      i. Generator rooms.
      ii. Main mechanical and electrical rooms.
      iii. Any locations where lighting cannot be interrupted for any length of time.
   e. Circuits for emergency lighting in an area required to be provided with emergency lighting will be arranged so that loss of normal or emergency power supply does not reduce the available lighting levels below the level required.
   f. Illumination levels required for emergency lighting will be at a minimum:
      i. Place of Assembly
      ii. General: 1 foot-candle measured 18" above floor
      iii. Aisle: 2 foot-candles measured 18" above floor
      iv. Exit Doors: 5 foot-candles measured at the floor level
      v. Corridors and Stairs:
      vi. 2 foot-candles measured 18" above floor.
   g. Buildings with Generator - In new buildings, major modernizations, or major additions, where an emergency or required standby generator is provided provide power for emergency lighting through an Automatic Transfer Switch (ATS) and emergency lighting panel.
   h. Buildings without an Emergency or Required Standby Generator - In buildings not provided with an emergency or required standby generator, emergency lighting fixtures will be connected to a power source recognized by the Code. The emergency lighting fixtures in a Place of Assembly and paths of egress to the outside will be controlled by a relay with sensing circuit off the local lighting panel.

3. Exit Signs
   a. Exit signs will meet the requirements in NFPA 101 and be energy efficient and environmentally friendly products (e.g., light emitting diodes (LED type), Photoluminescent type.
   b. Locations - Means of egress will be clearly marked by illuminated exit signs placed as required so that exits and path of egress are easily recognized from any point in a corridor or Place of Assembly.
   c. Design Parameters - Exit signs will have 8" letters illuminated by light emitting diodes (LED) only. Wall mounted exit signs are preferred over pendant mounted exit signs. The use of pendant mounted exit signs is limited to meet visibility requirements, and only when wall mounted units may not suit the need.
   d. Connection to Emergency Lighting Panel - For buildings with generator, exit signs will be connected to the emergency lighting panel through transfer switch. For buildings without a generator, exit signs will be connected to an emergency lighting panel which is connected to an emergency service switch tapped ahead of the main service switch.
   e. Battery Backup - Exit signs will be provided with integral rechargeable battery packs. Batteries must be of the nickel cadmium type.

4. Security Lighting
   Security lighting in daylit spaces will be controlled by photosensors. When security lighting also functions as emergency lighting, separate circuits and emergency ballasts are required.

5. Special Purpose Lighting
   Certain areas, where the lighting design is an integral part of the building architecture integrate the design with the interior finishes and furniture arrangement to enhance the functionality of the spaces.

   Further consideration to adhere to the energy criteria and maintenance criteria, as well as minimizing the number of special lamp types and fixtures is required.

   Areas generally requiring special lighting treatment are as follows:

   a. Main entrance lobbies.
   b. Atriums.
   c. Elevator lobbies.
   d. Public corridors.
   e. Public areas.
   f. Auditoriums.
   g. Conference rooms.
   h. Training rooms.
   i. Dining areas and serveries.
   j. Libraries.

6. Lighting – Historic Buildings
   a. Historic chandeliers, pendant lights, sconces, and other period lighting may be upgraded with energy efficient light sources and optical enhancements that preserve the historic appearance of the luminaire and space.
   b. Replica lighting for restoration zones will be fabricated or modified to accept energy efficient lamps.

c. Supplemental lighting, when required, will be designed and located to minimize penetration of ornamental wall and ceiling surfaces and to avoid competing visually with historic lighting.

d. Recommended alternatives for increasing light levels in ceremonial spaces, when re-lamping is not sufficient, will include compatibly designed floor lamps, task lights, and discretely placed indirect lighting.

D5080 MISCELLANEOUS ELECTRICAL SYSTEMS

D5080.10 LIGHTNING PROTECTION

1. Lightning Risk Assessment
   Perform lightning risk assessment calculations based on NFPA 780 to determine if a Lightning Protection System (LPS) is required for the building. I Design a lightning protection system with UL Master Label Certificate in accordance with NFPA 780, UL 96A.
2. Equipment And Location
   The lightning protection system will be of the Franklin Rod type with air terminals along the rooftop, rooftop perimeter, and selected rooftop mechanical equipment; ground conductors, and dedicated ground rods. The lightning protection grounding system will be bonded to the electrical grounding system.

D5080.90 MISCELLANEOUS ELECTRICAL SYSTEMS SUPPLEMENTARY COMPONENTS

1. Seismic Design For Electrical Systems
   a. New and Existing Buildings
      New buildings and additions will be designed for seismic forces. If an existing building is required to meet the requirements of the NYC Seismic Code and a waiver cannot be obtained, the electrical retrofit work will meet such requirements.

   b. Building Additions
      For new additions, any items in the existing building that are integrated with the life safety systems in the new addition will meet the seismic requirements.

   c. Items Requiring Restraint
      Seismic restraints will be designed for all equipment and machinery necessary for life safety operations. Equipment and machinery will be anchored to the building structure. Coordinate with Structural work for attachments to building structural system. Electrical equipment and system components including the following will be restrained as required:
      i. Motors and switchgear serving fire pumps.
      ii. Transformers.
      iii. Control panels.
      iv. Major electrical conduit runs
      v. All life safety equipment power, lighting and control wiring conduits.
      vi. All conduits 2½" diameter and larger (1¼" and larger in boiler rooms and mechanical rooms).
      vii. All cable trays regardless of diameter, weight and distance from the bottom of slab or structural member.

D60 COMMUNICATIONS

D6000 COMMUNICATIONS GENERAL

1. The Telecommunications Systems will be integrated into the building design in a non-intrusive way,
2. The Telecommunications Systems will be provided with a redundant power supply and connected to the building standby generator where provided.
3. The Owner will request telecom/data service or any required update of an existing service, from the service provider company. Coordinate the telecom/data system design with the telecom/data service provider's specifications and requirements.
4. Review and comply with all NYC Department of Information Technology and Telecommunications (DOITT) requirements and standards. DoITT service delivery processes and procedures follow the industry standards of Information Technology Infrastructure Library (ITIL) v3 and ISO20000. All projects and applications hosted by DoITT must adhere to these standards for service delivery procedures, including Incident/Problem Management, Change Management, Asset/Configuration Management, Service Request Management, Service Level Management, Automated Monitoring /Alerting, and Automated Provisioning.
5. New Service
   Submit to the telecom/data service provider a site plan with the property line indicated together with telephone/telecommunications requirements. Request a location for the service point of entry into the building. Coordinate the location and source of any additional planned or potential service, such as high-capacity internet lines. This also applies to cable television service when required.
6. Main Telecommunication Room
   a. The Building Main Telecommunication Room is utilized to terminate and interconnect outside cable/fiber with the backbone (data and/or voice) cable and/or fiber used throughout the building. It provides facilities for large splice containers, cable termination mounting, and possibly electrical protectors. This space is in addition to any space required for network switching equipment or active system components.
   b. Rooms will be sufficiently sized for cabinets, racks and other equipment using largest dimensions and heaviest weights so that working clearance requirements, space for future installations, and structural requirements are satisfied.
   c. The room will be provided with a low impedance isolated ground. The ground should be directly attached to the building electrical service ground. The telecom/data main grounding busbar will provide a dedicated extension of the building grounding electrode system for the telecommunications infrastructure. Bond each equipment rack, cable raceway, cable runway, cable tray, and line protector to the Telecommunication Grounding System.
   d. The sensitivity of the telecom/data equipment requires that the telecommunications cabling and power be effectively equalized to prevent loops or transients that can damage the equipment. The telecom bonding backbone (TBB) will provide a reduction and equalization of potential (voltage) differences between the telecommunications system equipment
   e. The room will be located above the Base Flood Elevation (BFE) and will not be located beneath/adjacent toilets, showers, laboratories, kitchens, water tanks, cooling towers, or other locations where water supply, water re-circulation and liquid drainage are present.
   f. The room will not contain building services water pipes, air conditioning ducts, drainage pipes or other utilities crossing through the space.

g. The room will be located away from any potential sources of electromagnetic interference such as electrical power switchgear, transformers, motors, generators, elevator equipment or other devices producing inductive electric loads with the potential for creating electromagnetic fields.

h. Provide dedicated air-conditioning and fire protection to serve the room.

i. A main telecommunication room will be designed to locate and centralize the main control equipment of the following systems:
   i. Local Area Network.
   ii. Telephone System.
   iii. Cable TV System.
   iv. Sound, Intercom and Security Systems.
   v. Closed Circuit Surveillance System.
   vi. Building Automation System (BAS).

7. Communication Closets
   Design adequate communications closets to conform to the requirements of the utility company, and telecom providers. The communication closets will be centrally located and, in multi-story buildings, stacked strategically to increase vertical communication pathway arrangements.

8. Empty Conduit System
   Empty conduit system will be provided for telecom, data and cable TV systems. Drag wires will be provided in all empty conduits. Conduit size will be a minimum of 2".

9. Other Special Purpose Systems
   a. The following special systems will be designed as indicated in the Task Order and/or Project Objectives:
   b. Audio/Visual (A/V) presentation system in conference rooms and designated areas
   c. Video teleconferencing facilities in designated areas. Empty conduit for roof mounted satellite antenna
   d. Entry doorbell system
   e. Entry door intercom system
   f. Electric snow melting system
   g. Electric heat tracing

D70 ELECTRONIC SAFETY AND SECURITY

D7000 ELECTRONIC SAFETY AND SECURITY GENERAL

1. The Electronic Safety and Security systems will be integrated into the building design in a non-intrusive way.

2. The Electronic Safety and Security system will be provided with a redundant power supply and connected to the building emergency or standby generator where provided.

D7050 DETECTION AND ALARM

D7050.10 FIRE DETECTION AND ALARM

1. Fire Detection and Alarm Systems will be designed and installed in accordance with NYC Building, Electrical and Fire Codes and NFPA 72 as amended.
2. Fire alarm systems will be monitored by a central supervising station in accordance with NFPA 72 and approved.
3. The primary and secondary power supply for the fire alarm system will be provided in accordance with the New York City Electrical Code.
4. Fire Detection and Alarm System wiring will comply with the requirements of the with NYC Electrical Code and NFPA 72 as amended. Wireless protection systems utilizing radio-frequency transmitting devices will comply with the special requirements for supervision of low-power wireless systems in NFPA 72 as amended.
5. The Fire Detection and Alarm System control panel will be a type which a certificate of approval has been issued and will be installed in accordance with the NYC Building, Electrical and Fire Codes and NFPA 72 as amended.
6. All required fire alarm notification appliances and devices will be provided and will be listed for their purpose. Audible alarm notification appliances will be provided and emit a distinctive sound that is not to be used for any purpose other than that of a fire alarm notification. Visible alarm notification appliances must be provided in public areas, common areas and other locations as required.
7. Fire alarm riser diagrams will show all fire alarm devices indicated on the floor plans. Quantities of devices on the floor plans will match the quantities indicated on the riser diagram. Riser diagram will include class and style of circuits and levels of survivability. The riser diagram will show the interface of fire safety control functions.
8. The fire alarm system I will be a U.L. listed fully supervised, addressable microprocessor – based multiprocessing type. The Fire Alarm System will be integrated with the control and monitoring of building Fire Protection and Extinguishment Systems and Building Automation System (BAS) to override the normal control of HVAC equipment. In the event of fire The fire alarm system will annunciate at the main and remote annunciator panels and initiate occupant notification. The fire alarm system will be activated by:
    a. Automatic fire detectors.
    b. Sprinkler waterflow devices.
    c. Manual fire alarm boxes.
    d. Automatic fire-extinguishing systems
9. Remote Annunciator
   A remote annunciator panel will be provided in a supervised location to annunciate the status of the fire, smoke, and sprinkler alarm systems.
10. Equipment and Locations
    a. Fire Alarm Control Panel (including smoke purge, where required) – at main building entrance lobby.
    b. Printer – In supervised location or other location, as permitted
    c. Remote Annunciator – At supervised location or other location, as permitted
    d. Manual Pull Station – At each door leading to a building exit, in corridors, lobbies, places of assembly and as otherwise required to meet Code egress travel limitations.
    e. Visual Annunciators (Strobes) – Wall mounted in corridors, conference rooms, places of assembly, libraries, maintenance shops, toilets and other locations where required by Code. Visual

annunciators must be unobstructed by other objects, visible from any position in the area, and a maximum of 15 ft. from the ends of corridors.

f. Audible annunciators (Speakers/horns) – At corridors and other locations where required by Code. Where locations coincide with visual annunciators, use combination Horn-Strobe device type.

g. Area Smoke Detectors – In mechanical rooms (including fuel storage tank rooms), electrical switchgear rooms, electric closets, main telecommunication rooms and closets, Audio/Video closets, elevator lobbies, elevator shaft, elevator machine rooms, non- sprinkled rooms storing combustible materials, and over compartmentalization or fire separation doors where magnetic door holders are provided.

h. Heat Detectors – In boiler room, kitchen, laundry room

i. Water flow and tamper switches for the Fire sprinkler system control valves.

j. Elevator recall. (interlock with smoke detector in elevator lobbies, elevator shaft and elevator machine room)

k. Kitchen hood suppression system (Ansul System) – Activation must be indicated as an alarm on the Fire Alarm System.

l. Central Station Monitoring and, where required, Owner's designated remote monitoring station.

11. Existing Fire Alarm Systems
    a. The fire alarm systems' installations in certain public buildings fall under the following 5 categories:
        i. *No fire alarm system installed* - no alarm in a particular facility.
        ii. *Functional Fire Alarm system is installed* – filed and approved by FDNY.
        iii. *Functional Fire Alarm system installed* – Not filed with or approved by FDNY.
        iv. *Currently dysfunctional Fire Alarm System* – Originally filed and approved by FDNY.
        v. *Currently dysfunctional Fire Alarm System* – Never filed nor approved by FDNY.

    b. Where projects require HVAC replacement/modifications, the design alteration scope of work will comply with the latest Building and Mechanical Codes and require installation of all required smoke/duct detectors, fan shut down relays and fire smoke dampers. These devices will be integrated into the existing fire alarm system or provide local fan shut down control as approved by FDNY

    c. To allow successful inspection, sign-off, approvals and close-out phases involving HVAC replacement scopes of work with each of the categories listed above, the following guidelines can be followed:
        i. Facilities with no fire alarm system installed:
        Provide fire alarm devices (smoke detectors, shut-down devices, etc.) that will, in event of a fire or smoke condition, perform a local shut-down of the affected HVAC equipment.
        ii. Facilities with existing functional Fire Alarm system – filed with DOB and approved by FDNY:
        Provide additional HVAC related fire alarm devices. The additional HVAC related fire alarm devices will be tied into the existing fire alarm panel. The modifications to the existing fire alarm system will be filed and submitted to FDNY for approval.
        iii. Facilities with existing Functional Fire Alarm system – not filed with DOB or approved by FDNY:
        Prepare all documents necessary for filing and approval of a new Fire Alarm System with FDNY. The documents will include all the additional HVAC related fire alarm devices, as well as all other (not HVAC related) fire alarm devices, and all modifications/replacement of existing devices, as required for filing of the entire system as being new. The design and installation will comply with all applicable codes and all authorities having jurisdiction.

iv. Facilities with existing dysfunctional Fire Alarm System – Originally filed with DOB and approved by FDNY:
Provide new HVAC related fire alarm devices, as well as all necessary corrective measures to bring the existing system into a fully functional and operational mode, The Fire Alarm system with its additional devices and the corrective measures provided, will be filed and submitted to FDNY for approval.

v. Facilities with existing dysfunctional Fire Alarm System – Never filed with DOB nor approved by FDNY:
Prepare all documents necessary for filing and approval of a new Fire Alarm System by FDNY. The documents will include all the additional HVAC related fire alarm devices, as well as all other (not HVAC related) fire alarm devices, and all modifications/replacement of existing devices, as required for filing of the entire system as being new. The design and installation will comply with all applicable codes and be approved.

d. DOB no longer reviews filed applications for Fire Alarm and all filings and approvals must now go directly through the FDNY.

12. Sprinklers
Upon activation, sprinkler system water flow indicators and tamper switches for the fire alarm or sprinkler system will transmit a signal to the fire alarm system.

13. Ducts
Smoke detectors installed in ducts will be listed for the air velocity, temperature and humidity present in the duct. Duct smoke detectors will be connected to the building's Fire Detection and Alarm System. Activation of a duct smoke detector will initiate a visible and audible supervisory signal at a constantly attended location and perform the intended fire safety function in accordance with the NYC Building, Mechanical and Fire Codes and NFPA 72 as amended.

D7050.30 FUEL-GAS DETECTION AND ALARM

1. New Buildings, Additions and Major Renovations

a. Multiple-Station Systems
Provide multiple-station natural gas and carbon monoxide detector/alarm system with detectors adjacent to all gas-fired equipment located within the building (water heater, unit heaters, duct furnaces, etc.); between boilers; and (natural gas detector only) in the gas meter room and gas booster room, if applicable. Multiple-station system operations will be as follows:

i. Upon detection of combustible gas and/or carbon monoxide, the individual leak detector will signal the alarm control panel.

ii. The alarm control panel will then institute the following:

iii. Close the main gas valve on the gas service (isolation valve with fusible link).

iv. Electrically shut down all equipment.

v. Start the explosion proof exhaust fan in the gas meter room, where applicable.

vi. Digitally signal the BAS (if provided); and

vii. Activate the audio/visual alarms in the boiler room (or mechanical room, for projects without boiler) and supervised location

b. Standalone Single Stations
Provide standalone single station carbon monoxide detectors/alarms (in addition to multiple-station detectors as specified above) for all remaining spaces containing fossil fuel burning equipment (spaces with gas stoves or dryers, labs, auto shops, generator room, indoor loading dock, etc.). Single station carbon monoxide detectors/alarms will annunciate locally by both visual and audible means.

c. Power
Primary power for single station detectors/alarms and for the multiple-station alarm control panel will be hard wired, supplied from a dedicated branch circuit, and connected to emergency power (where applicable). The multiple station alarm control panel will be in the boiler room (or mechanical room, for projects without boiler) and contain power supplies to feed the gas and carbon monoxide leak detectors, control valves, and the audio/visual alarms.

2. Existing Buildings
   a. Standalone Single Stations
   Provide standalone single station carbon monoxide detectors/alarms adjacent to all gas-fired equipment located within the building (water heater, unit heaters, duct furnaces, etc.); between boilers; and for all remaining spaces containing fossil fuel burning equipment (spaces with gas stoves or dryers, labs, auto shops, generator room, indoor loading dock, etc.).

   b. Power
   Primary power for single station detectors/alarms will be hard wired, supplied from a dedicated branch circuit, and connected to emergency power (where applicable).

D7050.40 FUEL OIL DETECTION AND ALARM

Provide leak detectors and level sensors for fuel-oil, level and capacity, high and low levels, adjacent to fuel-oil tanks and in rooms containing fuel-oil burning equipment, connected to a local audible alarm and to a remote alarm panel located in the supervising station.

D7050.50 REFRIGERATION DETECTION AND ALARM

Mechanical rooms for cooling system equipment (refrigeration, chiller machine rooms) will be designed in accordance with the requirements of ASHRAE Standard 15: Safety Code for Mechanical Refrigeration and contain a refrigerant leak detector with audible and visual alarm. The detector, or a sampling tube that draws air to the detector, will be located in an area where refrigerant from a leak will concentrate. The alarm will be sent to the BAS system, if provided.

D7050.60 WATER INTRUSION DETECTION AND ALARM

Provide leak detectors for pumps, connected to a local audible alarm in the pump room and to a remote alarm panel located in the supervising station.

D80 INTEGRATED AUTOMATION

D8010 INTEGRATED AUTOMATION FACILITY CONTROLS

D8010.00 INTEGRATED AUTOMATION GENERAL

1. The Building Automated System (BAS) architecture provided will allow for the full integration of data gathering devices, data storage devices, communication devices, building services equipment control, building services equipment monitoring and building environment status monitoring. The communication protocol of the BAS will be “open protocol“ allowing maximum data acquisition and transmission capability between central control and end use devices. Proprietary software, hardware and system architecture that does not allow for full integration and open protocol functionality is not acceptable.
2. The BAS architecture will incorporate analog and direct digital control (Ddc) network devices consisting of primary and secondary communication pathways (bus) connecting high-level controllers with lower-level controllers, input/output devices and a end user interface devices.

3. Industry standard communication protocols including ASHRAE Building Automation and Control network (BACnet) and Echelon-Motorola Corporation local operating network (LonTalk) are acceptable.
4. BACnet capable devices will communicate over a dedicated optical fiber, ethernet, ARCNET, RS-232, RS-485 or a low-bandwidth special purpose wireless network. including Internet Protocol (BACnet/IP) and Master-Slave Token-Passing (BACnet MS/TP).
5. The BAS will be capable of supporting internet Web services including Representational State Transfer (REST). Application Programming Interface (API) and Message Queuing Telemetry Transport (MQTT) integration that will enable integration with cloud-based Internet Protocol (IP) networks and universal gateways for Internet of Things (IoT) applications.
6. The BAS will be capable of scheduling building lighting and HVAC equipment operations and maintenance and adjusting building systems to optimize their performance to minimize overall power and fuel consumption of the facility.
7. The BAS will have a graphical user interface, and provide trending, scheduling, downloading memory to field devices, real-time "live" graphic programs, parameter changes of properties, setpoint adjustments, alarm/event information, confirmation of operators, and execution of global commands. The BAS will Record and archive all collected energy consumption data as described in this Section.
8. BAS designs that integrate with other Information Technology (IT) systems are preferred to minimize costs and improve operations. Digital building control systems such as utility metering, HVAC building automation systems, lighting controllers, and renewable energy systems can share common communication protocols, compatible equipment, and uniform standards with other building IT services.
9. Required level of integration
   Central operator station monitoring, and control will be provided in the building.
   a. Central equipment (AHUs, rooftop units, boilers, chillers, etc.) will be provided with Human Machine Interface (HMI) Liquid Crystal Display that can display diagnostic error codes and system information. Provide Portable Operator's Terminal (POT) units to permit operator interface to facilitate controller management (and central unit controller management in addition to the central unit controller HMI interface), commissioning, diagnostics and general operator interface with the installed control system. The POT will be able to connect to all controllers.
   b. Lighting systems controlled by a BAS will have independent power and control panels and networks. The BAS will monitor the status and energy consumption of the lighting systems.
10. Energy Management and Conservation
    The BAS will have the capability to allow building staff to monitor system performance and determine energy consumption.
    a. HVAC control algorithms will include optimized start/stop for chillers, boilers, pumps, air handling units, exhaust fans, fan powered VAV and fan coil units, and all associated equipment. Control algorithms based on predicted weather patterns will be utilized if they are adaptive and self-correcting. A condenser water optimization control is required to optimize the chiller, tower, and pump energy consumption.
    b. Electrical power parameters, such as V, A, KW, KVAR, KVA, PF, KWH, KVARH, frequency, and percent THD, will be measurable for monitoring. See D50 Electrical Section for separate metering of power consumption monitoring requirements.
    c. Energy management measurements will be totalized and trended in both instances and time-based numbers. Energy monitoring data will be automatically converted to standard database and spreadsheet format and transmitted to a designated workstation. The measured energy data will be capable of being analyzed and compared with calculated energy con sumption estimated during design.

11. BAS Control and Monitoring Capabilities
    a. The systems and components that will be controlled or monitored by the central BAS include chillers, boilers, air handling units, cooling towers, exhaust fans, heat ex- changers, pumps, VAV terminal units, fan coils, finned tube radiation, air conditioners for computer rooms and other special spaces, building pressurization, lighting, electrical power, and emergency generators.
    b. The BAS will be capable of scheduling the operations of the systems and equipment for occupied hours, unoccupied hours, and weekends and holidays. Scheduling of equipment will be determined by standalone Ddc controllers with scheduling function or using time clocks as digital input into the Ddc controller when the controller is an application specific controller without scheduling function.
    c. All automatic valves and dampers will have positioners installed to indicate operational status.
    d. The BAS will be capable of receiving current sensor based digital signals from all field-installed controllers and calculating the electric energy, fuel, and water consumption by using appropriate voltages and phases.
    e. The BAS will provide for standalone operation of subordinate components. The primary operator workstation will have graphical user interface. Stand-alone control panels and terminal unit controllers will have text-based user interface panels, which are handheld or fixed.
    f. The BAS monitoring capability will include logs of data created by user-selectable features.
    g. The BAS will have approximately 30% spare capacity for future expansion.
12. Maintenance Schedules
    The central BAS will include application programs for scheduling maintenance of the mechanical and electrical equipment, including information on what parts and tools are needed to perform each task.

D8010.50 INTEGRATED AUTOMATION CONTROL OF HVAC SYSTEMS

1. Automatic Temperature Controls
    a. Standalone, programmable single or multiple loop microprocessor PID controllers will be provided to control all HVAC subsystems.
    b. PID control loops will be used. All chillers, boilers, terminal units, and air handling units will have self-contained BACnet or Lon Talk controllers, which can communicate with the BAS.
    c. The control heating and cooling equipment in each zone will be provided by a thermostat or temperature sensor located in that zone. Perimeter systems will have at least one thermostat or temperature sensor for each perimeter zone.
    d. Night setback and setup controls will be provided for all comfort conditioned spaces, even if initial building occupancy plans are for 24-hour operation. Air side economizer, morning warm-up or cool-down options will be part of the control system. Controls for the various operating conditions will maintain pressurization requirements during occupied and unoccupied periods.
2. Automatic Humidity Controls
    Indoor and outdoor enthalpy and/or humidity sensors will be provided. Sensors will be calibrated in-place during system startup and at least annually thereafter. Where precision humidity control is required, provide dew point control, for comfort control applications, RH sensors are permitted, provided they have been calibrated in-place and interfaced with dry bulb sensors so that the BAS can convert these two signals to a dew point value for control purposes.
3. IAQ Controls
    Measurement and control instrumentation will be provided to ensure outdoor air intake rates are maintained during occupied and unoccupied hours.

4. Setpoint Reset Controls
   a. Air Systems
      Systems supplying heated or cooled air to multiple zones will include controls that automatically reset supply air temperature required by building loads or by outdoor air temperature.
   b. Hydronic Systems
      Systems supplying heated and/or chilled water to comfort conditioning systems will include controls that automatically reset supply and return water temperatures as required by changes in building loads or by outdoor air temperature.

5. AM Startup
   Morning startup cycles will minimize the outside air intake dampers during the summer/winter morning pick up period. If outside conditions are favorable, morning startup will purge the building with cool dry outside ambient air before the initiation of the air-conditioning cycle.

6. BAS Retrofit/Repair with Existing Terminal Units to Remain
   For retrofit/repair work on conventional or BAS/Ddc control systems where the terminal units in the spaces are to remain and are controlled by electric or pneumatic controls, the new BAS I will be a hybrid of standalone central unit digital controls (boilers, chillers, rooftop units, air handling units, etc.) and the terminal units must be electrically or pneumatically controlled.
   a. If the terminal units in the spaces are controlled by pneumatic zone control valves (i.e., pneumatic thermostats are not located in each space) the climate control Scope of Work will include removing the pneumatic zone control valves and providing digital thermostats (or sensors/controllers) and control valves in each space.
   b. Those portions of the pneumatic system that are not salvageable will be replaced in kind with new pneumatic lines/equipment. Defective terminal systems' sensors, thermostats, actuators (i.e., those associated with terminal radiation control valves, any pneumatic VAV boxes, etc.) will be replaced with new pneumatic components. Any defective pneumatic compressors, dryers, PRV stations, pneumatic main lines and branch lines will be replaced as required.
   c. After the pneumatic devices (thermostats, control valves, etc.) have been replaced the existing pneumatic system will be tested to demonstrate acceptable functional operation and control.

7. No existing BAS with New Terminal Units and Major System Equipment
   In the case of installation of new terminal units (i.e. a new air conditioning unit for an existing building), the control system will be a digital stand-alone system without an interconnecting network.
   a. Salvaged air handling units will have pneumatic controls replaced with standalone electric direct digital control (Ddc).
   b. New air handling units must be provided with new standalone electric direct digital controls (Ddc).
   c. Major System Equipment including boilers, chillers and commercial rooftop units will be provided with stand-alone direct digital controls (Ddc).

E EQUIPMENT AND FURNISHINGS

E10 EQUIPMENT

Not used

E20 FURNISHINGS

Not used

F SPECIAL CONSTRUCTION AND DEMOLITION

F10 SPECIAL CONSTRUCTION

Not used

F20 FACILITY REMEDIATION

F2010 HAZARODOUS MATERIALS REMEDIATION

F2010.00 HAZARDOUS MATERIALS REMEDIATION GENERAL

The design process must respond to environmental concerns and the project design must incorporate measures to mitigate adverse environmental impacts whenever feasible. The environmental review process for any project will address rules and regulations established by the NYC Department of Environmental Protection (DEP), NYS Departments of Health and Labor, and applicable United States Environmental Protection Agency (EPA), and Occupational Safety and Health Administration (OSHA) standards. While most environmental issues within buildings undergoing renovation are associated with the presence of asbestos-containing materials (e.g.; spray-on fireproofing, pipe insulation, and vinyl asbestos tiles) other hazards may be present. Examples of these include: lead based paint, polychlorinated biphenyls (PCBs), and biological contaminants (such as mold and pigeon droppings). Excavated soils may contain volatile organic compounds (VOCs), toxic metals, or other contaminants from past hazardous materials disposal practices.

DDC's Office of Environmental and HazMat Services (OEHS) and the Office of Geotechnical Investigations (OGI) has developed a strict set of special experience qualifications for Environmental Consultants and sub-contractors. In the case where DDC does not provide environmental services, the Consultant may be responsible for obtaining the services of a qualified firm or individuals licensed or certified to perform hazardous materials investigations in NYC. Any firm selected to provide such environmental services requires approval by DDC OEHS/OGI before they can participate in the project. When DDC provides environmental services, the Consultant is expected to support and cooperate with the Agency's efforts.

On projects for which the Consultant is responsible for obtaining these environmental services, they shall meet the standards described below.

F2010.20 ASBESTOS REMEDIATION

1. Investigator Survey
   All buildings scheduled for construction/renovation, including recently constructed buildings or newly renovated areas, must be surveyed by a NYC Investigator to identify the presence or absence of ACM which could be impacted during construction/renovation.
2. Abatement in Contract Drawings
   With limited exceptions, contract documents shall include abatement of all ACM that can reasonably be expected to be disturbed by construction activities.
3. Outside Construction Area
   When inspecting for asbestos or preparing abatement contract documents, consider areas that may be impacted outside of the immediate construction area, nearby restricted access areas, and abatement phasing requirements.
4. Historical Reports
   Historical asbestos survey reports have been compiled on a building-by-building basis. DDC OEHS maintains files of prior asbestos survey reports and must be contacted by the Consultant prior to any survey work.

F2010.30 LEAD REMEDIATION

1. Protect Workers
   The Consultant is advised that lead-containing materials have the potential to adversely impact the health of construction workers and others located adjacent to the work area. As such, appropriate precautions shall be specified, including OSHA Safe Work Practices.
2. Identify Waste in Bid Documents
   Lead-containing materials to be disposed of may be designated as a hazardous waste. The Consultant will be responsible for identifying any lead waste disposal requirements and noting them in the bid documents.
3. Note Potential Lead Release in Bid Documents
   The Consultant shall be responsible for identifying any construction tasks that could result in releases of lead for which the Contractor may become responsible and for noting them in the bid documents.
4. Regulations on Child Occupancy
   In buildings that would be considered “child-occupied”, the Consultant will be responsible for developing lead control procedures in conformance with the appropriate federal and state requirements. The sub-consultants responsible to perform such work shall be EPA Lead-Safe Certified in accordance to the Lead Paint Renovation, Repair and Painting (RRP) Rule. Any work of that nature being performed in child-occupied facilities must be done by an EPA Certified Renovator or by workers trained by and supervised by a Certified Renovator.

F30 DEMOLITION

F3000 DEMOLITION GENERAL

In addition to demolition procedures, the following must be considered when preparing the Design Documents:

1. Salvageable Materials

a. Determination of what items, if any, the Facility wants to be salvaged.

b. Identification of items which will be removed by the Facility prior to demolition.

c. Identification of items to be removed by the Consultant and turned over to the Facility.

2. Utilities

   a. Determination must be made relative to utilities serving the structure to be demolished or affected by its removal. The work required for each individual utility must be specified (cut and plug, remove, abandon, etc.).

   b. In general, utilities serving a structure to be demolished should be terminated at the nearest manhole, valve, pole, etc. and totally removed for five feet outside the structure. Termination must include removal of wiring from abandoned conduits, and capping or plugging of piping and conduits at both ends.

   c. Buried heating and fuel storage petroleum tanks should be removed.

3. Site Access
   All issues or restrictions related to accessing the demolition site and measures to be taken for protection of facility population or general public must be identified.

4. Scope of Work
   The demolition method should not be specified unless necessary. Identification of specific restrictions (such as no burning, no explosives) should be included. The intention is to get the building removed at the lowest cost.

5. Foundations
   Determining the procedure for removal of foundations and backfilling basements frequently presents the largest challenge in preparing demolition contracts. The intended re-use of the site is often a major determining factor and should be reviewed with the Sponsor Agency early on. In general, exterior foundation walls should only be removed two feet below proposed Finish Grade. Interior building walls are to be removed to the level of the lowest basement floor, and basement floors need only be broken up for drainage purposes.

6. Backfilling
   If the demolition site will be returned to a landscaped area, the basement can typically be backfilled with masonry and concrete demolition debris. If a new building will be constructed on the site, such backfill should probably be avoided. However, the ultimate responsibility for critical backfilling should be placed on the new Building Contractor, NOT the Demolition Contractor.

7. Recycling
   In general, the market will determine which materials in the debris stream will be recycled. However, to comply with the spirit of good sustainable design, it is a best practice to recycle. Demolition debris should be identified, and its disposition specified whenever practicable.

F3030 – SELECTIVE DEMOLITION

1. For all additions, extensions and renovations requiring partial demolition of an existing structure, the Consultant must review the Consultant's demolition drawings for their impact on the long-term stability of the structure. In special cases where the demolition work may affect the overall structural integrity of the existing building the structural engineer must prepare demolition drawings outlining temporary stability measures, sequencing, etc.
2. An evaluation and Structural Monitoring Plan will be developed for adjacent historic structures affected by the work.

G SITEWORK
G10 SITE PREPARATION

G1050 SITE REMEDIATION

DDC's Office of Environmental and HazMat Services (OEHS) and the Office of Geotechnical Investigations (OGI) has developed a strict set of special experience qualifications for Environmental Consultants and sub-contractors. In the case where DDC does not provide environmental services, the Consultant may be responsible for obtaining the services of a qualified firm or individuals licensed or certified to perform hazardous materials investigations in NYC. Any firm selected to provide such environmental services requires approval by DDC OEHS/OGI before they can participate in the project. When DDC provides environmental services, the Consultant is expected to support and cooperate with the Agency's efforts.

On projects for which the Consultant is responsible for obtaining these environmental services, they shall meet the standards described below.

1. Site Contamination
   Performing construction in areas of known site contamination is likely to increase project costs significantly by adding follow-up environmental investigation and reporting. In the design phase, the Consultant must review existing environmental due diligence reports and other historical Records to ascertain whether other contaminants may be present and to review and coordinate the hazardous material construction documents provided by DDC to assure they adequately address handling, removal, and disposal of those materials. DDC OEHS has had experience with such issues and may be consulted for assistance in developing specifications and coordinating with regulatory agencies.

2. Waste Management
   Failure to adequately identify hazardous waste streams, use approved waste transporters, or use approved waste disposal facilities may expose the City to long-term liability and/or result in costly change orders. The Consultant shall ensure that all applicable hazardous waste rules and regulations are fully understood and addressed in specifications and contract documents.

3. PCB-Containing Materials
   Oil-filled electrical equipment (transformers, bushings, capacitors, cooling and insulating fluids, contaminated soils, etc.) may pose a long-term liability to the City and are subject to existing EPA and state regulations. The presence of such materials must be identified before or during the Design Development phase and the Consultant shall provide appropriate guidance for handling and disposal.

4. Underground Storage Tanks
   Underground storage tank systems (USTs) can threaten the environment and pose a long-term liability for the City. State and federal regulations concerning USTs must be followed. The
   Consultant shall identify the presence of all USTs that may be impacted by the construction work and include appropriate specifications in the contract documents.

5. Other Environmental Issues
   The Consultant is responsible in the design phase for identifying any other additional environmental issues that may be created by the construction.

G20 SITE IMPROVEMENTS

G2000 SITE IMPROVEMENTS GENERAL

1. Projects may require either new or repaired street sidewalks, curbs, parking areas, driveway aprons, curb cuts or roadway pavements. The Consultant is advised to confirm with the DOB at an early stage whether a Builder's Pavement Plan (BPP) application will be required. Non-standard sidewalks require PDC and DOT approval.
    a. The extent of impervious surfaces must be minimized, and tree cover over paved surfaces must be maximized. Porous pavement and pavements with a high solar reflectivity index (SRI) are desirable when budget and site conditions allow.
    b. Tree plantings and vegetated areas are encouraged in all parking areas to provide both "green" infrastructure and shade for the pavement.
    c. Sidewalks, parking areas and roadways must comply with Accessibility Standards.
    d. In certain zones, parking lots must also comply with NYC Zoning Resolution 37-90 requiring perimeter landscaping in lots exceeding 18 stalls.
2. The use of recycled materials is encouraged where practical. Where feasible, recycle discarded material, salvage existing topsoil, and transplant existing plant material.
3. Maintenance considerations must be integrated into the design process, such that landscaped areas can be maintained in a cost-effective and efficient manner. Anticipated maintenance must not exceed the ability of the Sponsor Agency to adequately maintain the landscape.

G2050 ATHLETIC, RECREATIONAL AND PLAYGROUND AREAS

Playground and resilient play surfacing design must meet the requirements and guidelines of the Sponsor Agency, the United States Consumer Products Safety Commission (CPSC), ASTM F1487, F1292-17a, and the NYC Building Code. Safe fall-zones must be provided. Playground design must comply with Accessibility Standards.

G2060 SITE DEVELOPMENT

G2060.10 EXTERIOR FOUNTAINS

The use of water features, unless of very low water usage or using recycled water, should be reserved for places of high civic importance only. Water features where there may be public contact with the water may only utilize potable water supply and must be filtered and treated. When proposing decorative fountains and pools, the Consultant must identify the required maintenance, safety, water consumption, shut down, cost of operation, and winter season issues.

G2060.20 FENCES AND GATES

The design of site fencing should be appropriate to the building and the surrounding context. For historic buildings, restoration or replication of original fencing and gates must be considered, subject to current code requirements.

G2060.25 SITE FURNISHINGS

Site furnishing may include benches, tree guards, railings, bicycle racks, fences, gates, waste bins, light fixtures, signage, kiosks, art installations, trellis work, and play equipment. Lighting in street rights-of-way to conform to DOT Street Design Manual.

Secure bicycle parking must be provided in compliance with applicable zoning and building code requirements. This parking must be in view of building security personnel.

G2080 LANDSCAPING

G2080.10 PLANTING IRRIGATION

1. When required by the Agreement, irrigation must be provided sparingly for initial establishment, maintenance, cleaning, and watering of plantings.
2. Hose bibs are preferable and must be provided at spacing that allows a one-hundred-foot-long hose to reach all parts of the site without crossing entrance approaches.
3. Use non-potable water wherever feasible.
4. Irrigation using groundwater or stormwater, treated, stored, and distributed per DEP regulations is encouraged.
5. The irrigation system must be designed to provide water to plants only when needed. Use rain sensors or soil moisture sensors to prevent unnecessary watering. Avoid overspray onto paved surfaces. Drip irrigation systems are preferred.
6. Install all major components in protected, accessible locations. Provide freeze sensors as required. Irrigation controllers and remote sensing stations must be placed in vandal-proof unobtrusive locations and protected from freezing.
7. Install quick coupling valves throughout the system so that hoses can be connected to the system. Locate drain valves to permit periodic draining of the system.
8. Provide irrigation water meter separately from domestic water meter. Blackflow prevention must be installed.
9. Provide automatic controls so watering can be scheduled at night or in the early morning to reduce water losses from evaporation. Use zoned irrigation systems so that different areas can be watered at different times.
10. Irrigation systems must be provided with a Smart Controller that incorporates an on-site rain or moisture sensor that automatically shuts the system off after a predetermined amount of rainfall or sensed moisture in the soil.
11. Specify training on proper operation and maintenance of the irrigation system for the appropriate f acilities staff.

G2080.30 PLANTS

1. Plants must be selected based on the conditions of the site such as soil characteristics, moisture, temperature extremes, acidity, wind, and light, as well as their resistance to invasive pests or pathogens. The use of native and drought tolerant plant material is encouraged.
2. Plants may include lawns, trees, shrubs, ground covers, climbing plants, and seasonal plantings. Plants must have well-established roots at time of planting. All plantings must conform to the Grade A ANSI standards of nursery stock, be free of pests and diseases, contain no broken branches, weeds or deleterious material and must not arrive on project site dried out.
3. Street Trees
   Projects must provide for new or replacement street trees. Street trees must be selected from the current NYC Parks street tree species list. Approval for street trees is required from NYC Parks and from DDC. Tree pits must comply with all current NYC Parks requirements. For any tree removal located

within NYC Parkland, the Consultant must conform to the Rules and Regulations of the NYC DPR, Section 5 - Rules Governing Tree Replacement.

4. Maintenance Manual
   For substantial planting designs, a written manual and schedule must be prepared by the Consultant for the Sponsor Agency users and submitted at the completion of construction.

5. Invasive Plant Species, Pathogens, and Pests
   Site design and site construction must conform to all regulations regarding control of invasive plant species, pathogens, and pests. For the current list of permitted, prohibited, and restricted plants, contact NYC Parks Central Forestry and Horticulture Division at http:// nyc.gov/parks.

G2080.80 LANDSCAPING ACTIVITIES

1. Plant Tagging and Field Services
   Plant tagging by the Consultant is an additional service that includes the following:

   a. Tagging of Plant Materials
      The Consultant must engage the services of a licensed Landscape Architect to select, tag with DDC seals, and supervise the planting of all plant materials. All individual plants must be balled and burlapped or container-grown stock. Representative samples of ground cover grown in flats must be inspected and tagged at the nursery before such plants are prepared for shipment. All plant materials must be inspected for signs of invasive pest infestation prior to shipment. Any infestation must be immediately reported to the New York State Department of Agriculture and Markets (NYSDAM).

   b. Inspections of All Plantings
      In addition to supervising the planting operations, the Landscape Architect hired by the Consultant must inspect the final planting and notify DDC when it is appropriate to accept the planting and initiate the guarantee. Inspections of all plantings must be made by the Landscape Architect engaged by the Consultant throughout the maintenance and guarantee period, and sufficiently early so that replacement plants may be planted in the appropriate planting season. The Landscape Architect is to identify for replacement all plants found to be unhealthy or infested by invasive pests. At the expiration of the guarantee period the Landscape Architect must notify DDC as to whether or not the Consultant should be released from further obligation.

   c. Preparing a Maintenance Report
      The Landscape Architect must prepare a report for DDC indicating whether the Consultant is complying with the maintenance portion of the Contract and recommending actions required. Note that the planting acceptance and release are independent from acceptance of the general construction work. The report must be prepared at a time appropriate to the planting installation, as determined by the DDC Construction Project Manager.

   d. Preparing a Maintenance Schedule
      The Landscape Architect must prepare a written and graphic maintenance schedule and manual for all final project planting materials. Upon the approval of the manual, the Consultant must submit the original to the DDC Construction Project Manager. For each type of plant, the schedules and manual must identify the requirements for irrigation, fertilization, pruning, weeding, cultivating mulching, lawn care, seasonal plantings, plant replacement, pest control and disease control.

G30 LIQUID AND GAS UTILITIES

G3000 LIQUID AND GAS SITE UTILITIES GENERAL

1. Coordination with Service Providers:
   a. The Consultant is responsible for coordinating the utility design with local utility companies and/or other service providers.
   b. The Consultant is to verify the utility systems have sufficient capacity and reliability to meet the building design requirements.
   c. DDC will negotiate rates and connection charges with utility companies, where applicable.
2. Utility Location
   a. The Consultant must ensure that utility elements, such as electrical transformers, emergency generators, backflow preventers, and meters, are easily accessible by the utility companies.
   b. Design utility lines to avoid street trees, large trees, and significant planting areas. Locate utility lines so that future maintenance and repair will not damage trees and plantings.
   c. Manholes must not be located in the main pedestrian walkways, plazas, or entry courts.

G3010 WATER UTILITIES

Water lines should be located in the unpaved area behind curb lines or under sidewalks. Minimize locating water lines under streets, drives, or other areas where access is severely limited. Do not place main water lines under foundations or within the building footprint.

G3020 SANITARY SEWERAGE UTILITIES

1. Consultant to follow the regulations of NYC DEP.
2. Separate storm drains from sanitary sewers within the property limits.
3. Provide cleanouts 5 feet from the building on all service lines. Service lines should enter the main at a manhole. Provide drop manholes if the service line does not enter at the invert.
4. In areas where no public sewers exist, use of septic tanks and leach fields is acceptable. Install the septic systems in accordance with code. Locate septic systems where they can be expanded to meet future needs of the discharge system; unless otherwise required by the Sponsor Agency, plan for a 50% larger system.

G3030 STORM DRAINAGE UTILITIES

1. Storm drainage pipes should be located in unpaved areas where possible.
2. Locate sanitary sewer lines in unpaved areas where possible. Follow code requirements on separation of water and sanitary sewer lines.
3. Design the storm water system as required by DEP. Use gravity flow for all storm drain systems.

4. Where possible, locate storm drainage pipes in unpaved areas; offset inlets from main trunk lines to prevent clogging.
5. Rainwater not collected for reuse from the building roof drainage system must be discharged into the storm drain.
6. Storm Water Runoff Requirements:
    a. The site design must manage storm water runoff.
    b. The Consultant must conform to DEP requirements for storm water management. The Consultant must obtain any required DEP approvals for the storm water management plan.
    c. Reduce runoff by minimizing impervious surfaces; consider "green infrastructure" such as green roofs, enlarged tree pits, and bioswales; consider "gray infrastructure" such as blue roofs, porous pavement, rain gardens and below-grade stormwater storage and infiltration. See Plumbing Engineering section in this Chapter for additional drainage requirements.

G3090 LIQUID AND GAS UTILITIES SUPPLEMENTARY COMPONENTS

Manholes must be secured from unauthorized access using tamper-proof bolts.

G40 ELECTRICAL SITE IMPROVEMENTS

G4010 SITE ELECTRIC DISTRIBUTION SYSTEMS

G4010.10 ELECTRICAL UTILITY SERVICE

1. The routing of site utilities and location of manholes must be determined early in the design process in coordination with the site civil engineer. The designer must coordinate with the utility company to determine the capabilities, rate structure options, and associated initial costs to the project and must evaluate the available utility service options.
2. The Consultant must perform an economic analysis to justify the service voltage and design option selected.
3. For buildings less than 100,000 gross square-feet (gsf), utility power must be requested at the main utilization voltage, i.e., 460Y/265V or 208Y/120V.
4. For buildings greater than 100,000 gsf and less than 250,000 gsf, at least one electrical secondary service at a minimum of 460Y/265V must be provided. For buildings 250,000 gsf and larger, or for campus sites, electrical service must be provided to the site, at medium-voltage distribution, for primary power distribution to substations.

G4010.20 ELECTRIC TRANSMISSION AND DISTRIBUTION

1. Primary Cable Selection
   Medium-voltage cable selection must be based on all aspects of cable operation and on the installation environment, including corrosion, ambient heat, rodent attack, pulling tensions, potential mechanical abuse, and seismic activity. Conductors for new construction buildings rated above 150 amperes may be copper or aluminum, insulated with cross-linked polyethylene (XLP) or ethylene propylene rubber

(EPR). Conductors rated 150 amperes and below must be copper. New cabling to be connected to equipment built or installed before 1980 must be investigated to determine compatibility of aluminum-to-copper terminations prior to specifying aluminum cabling. Insulation must be rated at 133 percent. Individual conductor size must not exceed 500 mcm.

2. Direct Buried Conduit
   Direct buried Schedule 80 PVC, coated intermediate metallic conduit (IMC), or rigid galvanized steel must be used for the distribution of exterior branch circuits. The minimum direct buried conduit size must be 1.5 inches. Backfill around the conduits must be selected based on the thermal conductivity and be free of materials detrimental to the conduit surface.
3. Concrete Encased Duct Banks
   a. Concrete-encased PVC Schedule 40 duct banks must be used where runs are under permanent pavements and where service reliability is paramount.
   b. Concrete-encased ducts must be provided with a cover that is at least 30 in. thick. Duct banks under railroads must be reinforced.
   c. Ducts must slope toward manholes and all entries into buildings must have watertight seals. Changes in direction must be by sweeps with a radius of 4 ft. or more. Stub-ups into electrical equipment may be installed with manufactured elbows. Duct line routes must be selected to avoid the foundations of other buildings and structures. Electrical power and communication ducts must be kept clear of all other underground utilities, especially high-temperature water, steam, or gas. Direct buried duct banks must be continuously indicated by installation of tracer tape 12" above the exterior of the duct bank.
   d. Where it is necessary to run communication cables parallel to power cables, two separate duct banks must be provided with separate manhole compartments. The same holds true for normal and emergency power cables. Duct banks must be spaced at least 1 ft. apart.
   e. Where redundant service is required (power, communications, and/or life safety), alternate and diverse paths with 1-hour fire separations must be provided.
   f. Ducts must be sized as required for the number and size of cables. All ducts for medium-voltage services must be a minimum of 4 in. inner ducts must be provided inside communication ducts wherever fiber optic cables will be used. Spare ducts must be included for planned future expansion; in addition, a minimum of 25 percent spare ducts must be provided for unknown future expansion and/or cabling replacement.
4. Manholes
   Manholes must be spaced no farther than 500 ft. apart for straight runs. The distance between the service entrance and the first manhole must not exceed 100 ft. Double manholes must be used where electric power and communications lines follow the same route. Separate manholes must be provided for low and medium-voltage systems. Manholes must have clear interior dimensions of no less than 6 ft. in depth, 6 ft. in length, and 6 ft. in width, with an access opening at the top of not less than 30 in. in diameter. Medium-voltage manholes must be sized in accordance with utility company requirements. Manholes must have a minimum wall space of 6 ft. on all sides where splices may be racked. Manholes must be provided with pulling eyes, sumps, and grounding provisions as necessary.
5. Stubs
   A minimum of two spare stubs must be provided (to maintain a square or rectangular duct bank), so that the manhole wall will not need to be disturbed when a future extension is made. Stubs for communications manholes must be coordinated with DOITT.
6. Handholes
   Handholes may be used for low-voltage feeders (600V and below), branch circuits, or communications circuits. If used, they must be not less than 4 ft. in depth, 4 ft. in length, and 4 ft. in width, and must be provided with standard manhole covers and sumps of the same type provided for manholes. Generally,

at least four racks must be installed. Where more than two splices occur (600V feeders only), a 6 ft. by 6 ft. by 6 ft. manhole must be required.

7. Penetrations
   Lighting and communication circuits that penetrate fire walls, fire barriers, fire partitions, smoke barriers, smoke partitions, and between floors must be properly sealed in accordance with the requirements of the NYC Building Code with approved firestopping materials.
8. Exterior Concrete Pads
   Concrete pads constructed to support exterior mechanical and electrical equipment must be provided with sufficient conduit penetrations to provide the necessary power and control connections plus an additional 50 percent for future equipment additions and modifications. Spare conduits need not extend more than 4 ft. past the end of the concrete slab. All spare conduits must be capped at both ends.

G4010.40 ELECTRIC TRANSFORMERS

When a transformer vault is required by the utility company, the Consultant must coordinate location of vaults and must establish a reference number with the NYC Department of Transportation (DOT) Office of Permit Management and meet with DOT to secure vault grating location approvals. The Consultant must contact other City Agencies, as required, for coordination and securing approvals for new utility transformer vaults.

G4050 SITE LIGHTING

1. The Consultant must provide for outdoor lighting and electrical power systems and building illumination where required. Generally, unobtrusive lighting designs and luminaire placement is preferred. Site luminaires should complement and be integrated with other site elements. Place luminaires to reduce glare and light pollution. Provide fixture lamping, color and durability information, and catalog cuts for selection when specifying site lighting. Neutral white illumination is preferred. Luminaires must be resistant to vandalism and easily replaceable.
2. Exterior/site/security lighting must be provided where required by Sponsor Agency and Code around the perimeter of the building and at parking areas for safe passage and to deter theft and vandalism. Due to the aesthetics of exterior lighting, its impact on the building façade and the difficulty in describing multiple elevations on a plan, it is essential that the Consultant provide complete exterior building elevations to clearly depict the location and mounting height of each fixture.
3. Exterior lighting must meet the IES 10th Edition Handbook recommendations and comply with the IDA/IES Model Lighting Ordinance (MLO) for lumen density limits and backlight, up-light, and glare (BUG) ratings or light pollution and light trespass performance method.
   a. Lighting design must minimize light trespass from the building and site, reduce sky glow, improve nighttime visibility through glare reduction and reduce development impact on nocturnal environment.
   b. All luminaires must minimize uplight and glare. Backlight must also be controlled when a luminaire is installed adjacent to property not owned by the Sponsor Agency.
   c. Full cut-off sources should be used for building entries and perimeter lighting.
   d. Fixtures at doorways should not exceed 10W. Building perimeter lighting should not exceed 20W. Wattage requirements may depend on actual application and illuminance requirements.
4. The IES Lighting Handbook along with other IES documents (RP-33, RP-20, RP-8, and DG-5) provide an industry accepted set of recommended practice for common exterior applications. Site conditions requiring enhanced lighting beyond these basic recommendations have also been evaluated by the IES and found to be specific to unusual surroundings or special property function. Guidance on when and how to provide appropriate enhanced lighting in these cases is outlined in “Guideline for Security Lighting for People,

Property, and Public Spaces" (IES G-1). Guideline G-1 explains that effective lighting for safety and security should consider:

a. Horizontal Illuminance, Vertical Illuminance, Uniformity/Shadows and Glare.

b. Exterior luminaries and control systems must comply with all local zoning laws, and lighting levels for exterior spaces must not exceed the IES 10th Edition Lighting Handbook recommendations.

c. Luminaires with instant strike light sources at all entrances and exits must be connected to the emergency lighting system.

5. Site Lighting
Illumination of exterior exit discharges must be in accordance with the requirements in NFPA 101. Flagpoles, if required, must be illuminated and controlled.

6. Open Parking Lots and Roadway Lighting
Parking lots and roadway lighting must be designed per IES Recommended Practice RP-8 and RP-20 current version in addition to the IES and IDA/IES MLO requirements.

7. Parking Structures
Parking structure lighting must be designed per RP-20 current version in addition to the IES and dimmed to at least 50% during periods of low activity and turned off when daylight is plentiful.
Luminaires must meet the following standards:

a. Efficacy of a minimum of 63 lumen per watt (LPW).

b. Wet-location rated.

c. Withstand mechanical vibration.

d. Life of minimum 25,000 operating hours for LED fixtures before reaching the L70 Lumen output degradation with no catastrophic failures per IES standard LM-21.

e. Lumen depreciation per IES standard LM-79.

f. Luminaire classification per IES TM-15.

G50 SITE COMMUNICATIONS

Not used

Z GENERAL DELIVERABLES

The Z section of the guide provides the Consultant with a complete list of expected project deliverables and their required content, formatting, level of development and other necessary guidelines for communicating the advancement of the project at critical project milestones. Most, but not all, of the below deliverables work in conjunction with the Submission Checklists in Section 3000 according to the requirements of the project delivery type and phase of project development or specific checklists provided in individual Criteria Section1000 that apply for all delivery types.

01 CAPITAL PLANNING SCOPE DEVELOPMENT DELIVERABLES

01/A REPORT

I. Executive Summary

/a CPSD Introduction
The CPSD Introduction must include an overview of the Sponsor Agency, the CPSD objectives, the CPSD Team, and site and building considerations. The introduction should also include a Table of Contents, a list of all included documents within the report and Appendix as well as a list of all sources material used to obtain project information.

/b CPSD Schedule Summary
Include a CPSD schedule which includes workshops and activities completed up to the current submission, key decisions and anticipated activities during the next stage of development or following the CPSD study.

/c Project Considerations and Objectives
Include a high-level outline of the major site and building considerations, risks and constraints leading to the development of project goals and criteria. Refine these considerations over the course of each Stage as the project evolves.

II. Existing Conditions

/a Site Analysis
Provide a full and comprehensive site analysis including neighborhood context, transit networks, site access, site adjacencies, surrounding circulation and accessibility, utility access, geotechnical conditions, environmental impacts and other site development considerations.

Provide an analysis which outlines feasibility of utilizing existing site, if applicable to project objectives.

/b Site History
The Site History analysis should include a clear timeline which describes the location and information such as a use and ownership, the historic natural landscape, building and development history, HAZMAT records and history of zoning and regulatory conditions as applicable.

/c Existing Facility Assessment
Document, in detail, the conditions of existing facilities and/or building(s) based on site surveys, site visits, inventory and review of available information. Provide complete documentation, including visual and photographic assessment, of general conditions and findings.

If appropriate for the scope of the project provide MEP/FP, Structural, Building Envelope, Civil / Landscape/ topographic surveys, environmental reports and Geotechnical reports in the appendix and summarize and highlight the critical considerations for development.

/d Existing Programming Analysis
Provide an overview of the existing facility (or facilities) programming including use, square footage, staffing composition, equipment, vehicular specifications, and quantities, MEP/PFP requirements, as applicable. Include a Staff Shift and scheduling matrix and furniture inventory if applicable.

/e Existing Conditions Summary

For the Stage 2&3 submission, summarize items from a, b, c, and d above, including material from the stage 1 report as relevant to arriving at the Program Requirements. Ensure that the analysis information is refined and further developed, as necessary and include in the appendix.

III. Project Description

The Project Description should include a comprehensive analysis of the opportunities and constraints of the project including but not limited to:

/a Project Goals

Working with all stakeholders, DDC and subconsultants, develop a set of project goals for the intended project.

/i. Sustainability and Resiliency Goals

Based on applicable regulatory requirements, section 1000 of this guide, conclusions reached during the Integrated Project Workshop and Environmental workshops or other relevant Sustainability and Resiliency discussions, provide sustainability goals for the project.

/b Project Criteria

/i. Regulatory Criteria

Provide a comprehensive zoning, code and regulatory analysis, including applicable local laws, accessibility requirements, percent for Art and sustainability and resiliency requirements. See Section 1000 for Public Building criteria.

For the Stage 2 submission, include a regulatory compliance pathway.
Refine, edit and update as required for stage 3 report.

/ii. Design Standards

Provide Agency reference documents, design guidelines, end user guidelines, Owner Project Requirements (OPR) for commissioning, furniture, workspace, equipment and vehicular specifications and quantities, operations, and maintenance requirements and any other certifications or specific requirements applicable to the project.

For the Stage 3 report, include standards list and information in the appendix.

/c Program Requirements

Provide a proposed and projected growth facility programming analysis and matrix which includes, but is not limited to square footage, use and staffing composition, equipment, vehicular specifications and quantities, MEP/FP requirements and required adjacencies, as applicable.

Include circulation studies and programming diagrams.

/d Space Allocation and Benchmarking

Include a matrix or chart which compares square footage of similar facilities with the proposed program.

IV. Options

For each option provide the following:

/a Option Analysis

/i. Siting

1. Provide and area plan, site plan and include criteria for site selection (if applicable.)
2. Provide traffic, transit, and parking analysis and site security
3. Provide massing, visibility and context studies
4. Civil strategies (including stormwater)
5. Landscape strategies and resiliency

/ii. Facility

1. Test fit floor plans, elevations and sections
2. Provide Building performance and/or prescriptive strategies related to technical design elements and services such as MEP/FP, Structural Engineering, Lighting Design, Security, Communications, Vertical Transportation, Construction Types, etc. For requirements for Public Building Elements see section A through G of this guide.

/b Option Description

/i. Project Goals

Describe how each option meets the project goals.

/ii. Project Criteria

Utilizing the Project Criteria from Stage I, describe how each option meets the project criteria of zoning, accessibility, regulatory compliance, resiliency, and sustainability. Include diagrams, checklists, and tables to demonstrate compliance.

/iii. Programming

Provide programming adjacency and stacking diagrams

/iv. Logistics

Describe the phasing and/or swing space strategy for each option

/c Options Comparison Matrix

Prepare a matrix which compares major elements for each of the proposed options including but not limited to:

1. Operations and Efficiency – circulation, facility use advantages and disadvantages, access, etc.
2. Sustainability and Resiliency – safety and access, green space, energy consumption advantages and disadvantages, site drainage and protection, etc.
3. Site and Environmental Impacts – urban context, traffic, hazmat, natural or infrastructure challenges, etc.

4. Project logistics and cost – construction phasing, costs, scheduling impacts, permitting process, etc.

V. Preferred Option

For the preferred option provide all information included under item IV above with information updated to incorporate feedback on the stage II report. Outline the option selected and/or aspect of each option carried forward into the final scheme.

VI. Project Logistics

Include an analysis with supporting diagrams or graphics which outline proposed phasing and/or swing space requirements for the preferred option.

02 PROJECT TRACKING REPORT

Organized using the Uniformat Classification System, the Project Tracking Report consists of a series of Project Tracking Forms intended to outline the complete scope of work for the project. A thorough set of Project Tracking Forms developed early in the project can aid in mitigating risks and establish a solid foundation through which the Contract Documents are developed for regulatory approval and bid and construction.

For Project Tracking Form templates please go to the DDC website and download the latest documents prior to the first milestone submission. Specific instructions will be provided on the templates and general guidance is outlined below.

02/A PROJECT DESCRIPTION FORM

Utilizing the provided Project Description Form (found in the appendix), document the full extents of the project's opportunities and constraints, as determined through analysis of the existing conditions, available project information and the requirements set forth in Section 1000 of the guide. If applicable, organized diagrams, tables and figures may be included as additional pages at the end of the form to support analysis. Include this completed and updated form with each Design Review submission as indicated on the Submission Checklist.

02/B PROGRAM MATRIX FORM

Utilizing the provided Program Matrix Form, identify all program elements included in the design. Include such factors as square footage, adjacencies, and critical performance requirements. Highlight any deviations from the Project Requirements/Front-End Planning Report and, if applicable, organized diagrams, tables and figures may be included as additional pages at the end of the form to support program analysis. Include this completed form with each Design Review submission and update when the criteria or design approach has changed.

For the purposes of square footage calculations utilize the following standards:

Gross Area: square footage measured to the exterior face of the exterior walls and which exclude 'open-to-below' areas

Net Area: ANSI-BOMA defined Usable SF which excludes building and nonassignable space such as: horizontal and vertical circulation, mechanical, custodial, public restrooms, structured parking and construction elements (shafts and partitions)

Grossing factor = Gross Area/Net Area

02/C PROJECT PERFORMANCE MATRIX

Utilizing the provided Project Performance Matrix Form, list the Project Goals as identified in the Major Design Considerations and provide a narrative describing how the proposed design specifically addresses these goals and relates to the agency priorities outlined in the General Design Approach, Section 1000.01. It may be appropriate to include additional project goals that add value to the project.

02/D ELEMENTS APPROACH FORM

Utilizing the Elements Approach Form, provide a comprehensive description of the systems and assemblies proposed in the project design. This list must include the full scope of the project and must demonstrate compliance with the A to G Elements Section, applicable codes and industry standards, as applicable. Include Performance and/or Prescriptive Requirements, including but not limited to those identified in the Front End Planning Report. This form is intended to outline and provide the basis for the project specifications. As indicated on the form, the level of detail provided will develop with each design phase milestone submission.

At the DD submission The Elements Approach Form must represent the project elements to the level of a complete outline specification.

02/E EXCEPTIONS REPORT

Document and summarize any approved Scope Change Requests and/or design and budget changes since the Front-End Planning Report.

02/F REGULATORY APPROVALS MATRIX

Utilizing the provided Regulatory Approval Matrix Form, identify all Regulatory Approvals required for the project. Document the anticipated path including dates of anticipated submission, actual submission, and approval. Include this completed form with each Design Review submission and update when the Approval path or requirements have changed. Approvals, objections, predeterminations, and other regulatory communications to date should be included as additional pages at the end of the form.

03 COMMUNICATION DOCUMENTS

03/A MEETING MINUTES

I. Formatting and Content

When recording meeting minutes, the Consultant must issue them on a letter size document in PDF format with following:

- A Heading which includes:
  - Meeting Title - for regular bi-weekly design meetings, the title must include consecutive numbering and indicate during which design phase the meeting is taking place.
  - The date and place of the meeting
  - The meeting Agenda
  - The names of attendees and agency/company represented.
- An organized table documenting a comprehensive list of issues discussed including the following information:
  - For bi-weekly design and construction meetings, organize information by topic. Topics may include, but are not limited to:
    - 1000 – 01 General Design, 02 ADA (Inspections), 03 Sustainability and Resiliency (LEED), 04 Historic Preservation, 05 Percent for Art, 06 Regulatory Bodies (PDC, LPC, DOB, NYCCB, FDNY, CEQR, etc.) 07 Commissioning (OPR, BOD, testing)
    - 2000 – 02/D DDC Project Support (Site Safety, OEGS, OLS, etc.) 02/E DDC Consultants (Special Inspections, CxA)
    - 3000 - 02/A Design Phase Management (Cost Estimate, Design Schedule, Workshops and Meetings, Submissions.) 02/C – Construction Administration (Submittals, Meetings, Field Reports, Schedule of Values, Close out.)
    - 4000 – Contracts and Registration
  - Each item must be numbered by topic followed by sequence numbering (for example: 1000.01_01, 1000.01_02, etc.)
  - Date issue identified, Due date for open items, Date the issue closes.
  - Whether the issue remains open or closed
  - Responsible party/parties for open items
  - Mention of the attendees involved in the discussion (if initials are used, identify those initials in the attendees list).
  - Conclusions of the discussion including any next steps.

II. General Requirements

- Unresolved issues must continue to appear in the minutes until they are resolved. The unresolved issues must appear at the top of the list.
- When updates or resolution occurs and issues move from open to closed, provide a brief update in bold text to document a resolution, if applicable.

- A draft version must be circulated for review and approval and be noted as a 'draft.'
- Corrections and approvals of the minutes following attendee review must be updated and circulated as final minutes, even if no comments are made to the draft version.
- Disputes in the content of the minutes must be resolved in a separate meeting or put on the agenda for the next bi-weekly meeting and noted as open.

III. Design Submissions

For Design Phase Submissions, include all Bi-weekly, Workshop and Presentation and Progress meeting minutes from the previous submission through to the current milestone submission.

03/B DDC MEMOS

If applicable to the project, the following DDC memos must be obtained and included in submissions as indicated on the relevant submission checklist.

I. SD Interim II Record Documents

A record of the SD interim II process includes, but is not limited to, the following:

1. All SD interim II presentations inclusive of all options
2. A written consensus on the preferred scheme from the Sponsor Agency and DDC
3. A record of all feedback (markup of presentations, emails, meeting minutes, etc.) from stakeholders as provided to the Consultant during the SD Interim II process.

II. Sponsor Initiated Scope Change Documents

DDC issued determinations/denials in response to Scope Change Impact Assessments conducted by the Consultant as applicable. If no determination has been issued, include the Impact Assessment analysis.

III. Access Agreement and Encroachment Approval Letter

Where underpinning or any access to neighboring sites for protection or to perform the construction work is required, a written letter of approval from DDC must be obtained before commencing design development. The letter should be requested through the DDC Project Manager and obtained, in coordination with the Project Team and discussions with DDC Law to ensure the proper licensing agreements are attainable for the proposed work.

IV. Other Documentation as Required

Include any other relevant memos such as MOU's, CEQR, Lease Agreements, etc.

03/C FIELD INSPECTION REPORTS

Field Inspection Reports shall utilize the DDC template and be issued on the Consultant's letterhead. Field Inspection Reports must be signed by the appropriate Registered Architect, Professional Engineer or Registered Landscape Architect.

For Field Inspection Report templates please go to the DDC website and download the latest document prior to the start of Construction. Specific instructions will be provided on the templates.

03/D PDC SUBMISSION DOCUMENTS

I. General Document Requirements

All documents must be:

1. Labeled with the project name, date, firm name/logo, DDC logo, sponsor logo.
2. Labeled "PDC [insert level of review] Review" and marked with the PDC Monthly Meeting date, not the submission date. Please refer to the PDC Calendar.
3. Submitted as individual 8 ½"x11" PDF files to the DDC PM/PDC Liaison.
4. Submitted to PDC as a printed hard copies in double-sided B&W format and secured with a binder clip unless otherwise noted below.

II. PDC Checklist

For any capital projects or artworks requiring PDC review, the DDC PM/PDC Liaison will provide the relevant checklist and confirm the submission package items and requirements. The checklist must be completed by the Consultant/Artist and included in the submission. For submissions that do not have a designated checklist, the DDC PM/PDC Liaison identifies the submission package items and requirements.

III. Application Information

The Application is to be completed by the DDC PDC Liaison. The Consultant to provide the following information when submitting the pre-submission package to DDC:

1. Estimated construction cost
2. Total number of new trees, if applicable
3. Total number of tree removals, if applicable
4. Name, firm name, street address, telephone, and email address of the Architect, Artist, Designer, or Design Builder representing the project.

IV. Statement of Project Scope

Please refer to PDC checklist for specific Statement of Project Scope requirements. Statement of Project Scope must describe all exterior work. The description may briefly note interior scope to provide context for the project but should focus on exterior work since PDC does not review interior work. For mechanical equipment, note any visual screening that has been provided.

V. List of Changes or Deviations

A list of changes is only required if the project was previously submitted and approved by PDC and must be coordinated with annotations in the presentation. Please refer to PDC checklist for specific List of Changes requirements.

Final or Final Sign off submissions during the Construction Phase, a list of all deviations from the approved PDC Final submission must be included along with justifications for the deviations. The memo must also include all DOB job numbers associated with the project that require PDC sign-off.

VI. Response to PDC Comments

If open PDC Comments remain from a previous review, the Consultant/Artist must provide an itemized response which details how the comments have been addressed in the current submission. The DDC PDC Liaison will provide the PDC Certificate with "Conditions of Approval" or PDC Interagency Communication (Status Report) with PDC comments with which the Consultant must provide a point-by-point written response to the PDC "Conditions of Approval" or PDC Interagency Communication (Status Report).

VII. Interagency Advisories/Approvals

The NYCCB, DOT and LPC will issue official advisories which will document the extents of their review and findings. The NYCCB advisory will be issued to the DDC Office of Community Outreach directly to the DDC PDC Liaison. All other prerequisite agency approvals must be provided by the Consultant/Artist.

04 PRESENTATIONS

04/A DESIGN PRESENTATIONS

I. Formatting Requirements

All design presentations must be delivered to DDC in a PDF digital file no larger than 10MB per file, with all layers flattened, as an 8.5" x 11" or 11" x 17" color copy (note: PDC requires 11"x17"). Hard copies, when requested, must be printed single-sided and collated with a binder clip. All presentation slides must have a white background.

For PDC Presentations the Consultant should reach out to DDC PM/PDC Liaison for the current PDC Presentation Template and for a sample presentation to guide formatting requirements. The presentation must be labeled with the project name, date, firm name/logo, DDC logo, sponsor logo, include "PDC [insert level of review] Review" and be marked with the PDC Monthly Meeting date, not the submission date. Please refer to the PDC Calendar.

II. Schematic Design Interim II Workshop Presentations

The Schematic Design Interim II presentation is intended to include deliverables required for the submission to the Public Design Commission (See Section III below). It is recommended that the PDC checklist for the specific project type is obtained from the DDC PDC Liaison to assist in development of the presentation. For some projects additional content may be required to adequately describe the extent of the project.

/a Diagrams
blocking, stacking, massing, zoning and site planning diagrams identifying concepts, key relationships, efficiencies, design opportunities and constraints for each option.

/b Key Plans
Borough and neighborhood level plans or aerials (400' radius from site), site photographs with key plans (8 minimum), two site photographs per page, maximum.

/c Presentation Drawings

1. Existing and Proposed Site Plans: The site plan must include a schematic building footprint with sufficient detail to identify the project location within the project boundaries, lot coverage, and rough estimated roof area. Major access points for utilities, vehicles, and users (both staff and public as applicable) should also be identified.
2. Existing and Proposed Building Plans: The building plan must include a roof plan and, if applicable, landscape plans – no more than one plan per page, indicate overall dimensions, scale, and north arrow. These diagrammatic floor plans must show Systems zoning, major utility connections and access points, and the rough location of major pieces of equipment such as generators, condensing units, cooling towers, or any other machines of significant size and requirements.
3. Existing and Proposed Building Sections: No more than two sections per page, indicate elevation or overall dimensions and scale. At least one section must indicate number of stories both above and below grade, conceptual roofing geometry, conceptual façade materiality as noted in the prior investigations, and any other relevant information identified during the decision-making process. Include floor to floor dimensions rounded to a whole number, and elevations relative to an established benchmark such as NAVD.

4. Existing and Proposed Exterior Elevations: No more than two elevations per page, indicate elevation or overall dimensions and scale. These diagrammatic exterior elevations must include all major facades, including at a minimum one that contains the main entry and that locate areas of conceptual materiality. Preliminary percentages or dispositions of fenestration should also be included in these drawings.
5. Wall Sections: For projects which include exterior envelopes or systems upgrades, diagrammatic sections of assemblies may be required.
6. Landscape Drawings: For projects which are primarily exterior or include a significant exterior landscape component, preliminary strategies must be presented in plan and section as applicable, and include concepts for significant materials, furnishing and lighting strategies.
7. Material Palettes: Preliminary material selection, including color concepts, textures and scale

/d Renderings and Models

1. Exterior Renderings: exterior renderings must be provided in context, from a pedestrian viewpoint. Conceptual façade materiality must be represented in the renderings.
2. Interior Renderings: for new buildings and projects with major interior renovations, conceptual renderings must be provided which highlight major spatial features, materiality, and adjacencies.
3. Model photographs (if applicable), minimum of (8) views with labels.

/e Cost Estimates

For each option a cost estimate must be provided and included in the presentation. See Section Z.07/C/II for cost estimate deliverable requirements.

/f Options Comparison Matrix

For the Investigations of Options workshop, a matrix must be provided which compares the major elements for each of the proposed options including but not limited to:

1. Operations and Efficiency – circulation, facility use advantages and disadvantages, program accommodation, access, etc.
2. Sustainability and Resiliency – safety and access, green space, energy consumption advantages and disadvantages, site drainage and protection, etc.
3. Site and Environmental Impacts – urban context, traffic, hazmat, natural or infrastructure challenges, etc.
4. Project logistics and cost – construction phasing, costs, scheduling impacts, permitting process, etc.

/g Other materials

Provide additional content as needed to present the proposal completely and concisely including precedent images and material palettes.

III. PDC Presentations

The specific requirements for a Capital Project PDC presentation are outlined in the appropriate PDC checklist provided by the DDC PDC Liaison following project kick-off. For formatting requirements see section I above. The Consultant must ensure the contents comply with the following specific requirements:

/a All PDC Presentations

Deliverables for this submission should be derived from the SD interim II Workshop Presentation outlined above in section Z.04/A/II - /a diagrams, /b key plans /c presentation drawings and /d renderings and models.

1. Site photos must capture all areas of exterior project scope, including roofs and side and rear yards or areaways.
2. For scope that involves alteration of existing conditions, show the existing condition/ removals drawing on one slide followed by the proposed condition on the subsequent slide. Clearly indicate all exterior work including work on roofs and within side and rear yards or areaways.
3. Revisions must be annotated in coordination with List of Changes, annotations should be on the newly proposed design slides and in red text.
4. For Building Systems, the presentation only includes location plans and site photographs.

/b Follow up PDC Presentations

For projects that were previously submitted and approved by PDC, the presentation slides must be organized to show the existing conditions, the previously approved design, and the newly proposed design. Existing conditions slides must be followed by the previously approved design slide, and then the newly proposed design slide. This organization applies to all site plans, plans, sections, elevation, and renderings.

04/B MODELS

A presentation model, if required by the Contract or PDC, must be complete in scope, detail, and color selection. Models must be titled with the names of the project, the Consultant, the Sponsor Agency, and DDC. Models are encouraged only for large-scale, complex projects.

Indicate in writing any models to be submitted to PDC along with issuance of the PDC Submission Package to DDC and guidance on the delivery of the model to PDC will be provided.

04/C PUBLICATION RENDERINGS

The Consultant must submit, if required by the Contract, perspective renderings and other presentation materials suitable for reproduction. These renderings and other presentation materials belong to DDC and must be used at public meetings, in publication, and on the DDC website. The requirements are as follows:

1. Renderings must be titled with the name of the project, the name of the Sponsor Agency, and DDC Division of Public Buildings.
2. Digital files are also required and may be transmitted electronically.
3. A signed release form must accompany all renderings and photographs.

04/D MATERIALS

Material samples must be provided of any materials or finishes that are not standard or replacement-in-kind.

I. Milestone Submission Material Boards

1. Exterior Materials:
   Material Boards must clearly show the relationship of all new and existing exterior materials and finishes.
2. Interior Materials:
   Material Boards must clearly show the relation of all new and existing interior materials and finishes.

II. PDC Submission Materials

/a Material Samples
Indicate in writing any materials to be submitted to PDC along with issuance of the PDC Submission Package to DDC and guidance on the delivery of the materials to PDC will be provided.

/b Material List and Cut Sheets
Please refer to PDC checklist for specific Material List and Cut sheet requirements. Materials List and Cut Sheets must be formatted as a single PDF. The first page should be a table indicating all exterior materials and equipment and the manufacturer, color, and finish for each item. Cut sheets should be attached as subsequent pages. For equipment, include only those pages that show the size and appearance of the unit.

04/E PHOTOGRAPHS

I. PDC Final Sign Off Photographs

The Consultant is required to provide high-resolution jpegs that comprehensively document the project exterior to establish that it was built as approved, including important details and/or features. Please note, the photographs are for archival purposes and should be of archival quality and free of construction fences, debris, graffiti, rubbish, and people.

05 ENGINEERING DELIVERABLES

05/A PRELIMINARY ENGINEERING CALCULATIONS

I. Structural Calculations

The Consultant must submit a comprehensive set of structural design calculations, including any working drawings or sketches that may be required for their proper supplementation. If analysis software is used for the design of systems or members, DDC may request the submittal of analysis models as part of the review process. A narrative of the input and results for computer-generated calculations for the recommended structural concept should be contained in the calculations as well.

All calculations/design notes must be arranged in a logical sequence, with sheets sequentially numbered and properly indexed. The calculation package will include, but not be limited to:

1. Design load parameters
2. Building model indicating reactions from major loading combinations such as gravity, wind, seismic etc.
3. Sample calculations of major structural components clearly showing the loads and load combinations used for the design of the members.
4. Calculations for buildings located in flood areas must include flood design load parameters.

II. HVAC and Fire Protection Calculations and Energy Analysis:

1. Heating and cooling load calculations.
2. Breakdown of individual peak space loads and ventilation loads.
3. A summary of simultaneous peak loads for equipment selection.
4. Psychrometric calculations for HVAC systems at full and partial loads (partial loads at 25%, 50%, and unoccupied periods).
5. Energy consumption calculations and analysis.
6. Water consumption calculations and analysis of make-up water for HVAC systems.
7. Fire protection water supply calculations, including water supply flow testing data.
8. Fire pump calculations, where applicable.
9. Preliminary hydraulic calculations for Fire Sprinkler system
10. Water reserve calculations for sprinkler system.
11. Smoke control calculations, where applicable.
12. Stairway pressurization calculations, where applicable.
13. Fuel consumption estimates.

III. Plumbing Engineering Calculations

1. Calculations and water analysis for sizing of main sanitary, stormwater, domestic water (related tanks) and pumps, as required.
2. Water consumption calculations and analysis, including make-up water for HVAC systems, domestic water consumption, and water consumption for irrigation.

IV. Electrical Engineering Calculations:

1. Load calculations
2. Calculations for lighting, power, and equipment summary
3. Power density analysis for lighting in each area.
4. Design Calculations including short circuit, OCPD coordination, voltage drop, PV sizing
5. Emergency power design calculations, if applicable.
6. Life-cycle cost analysis of luminaire/lamp system and associated controls

05/B FINAL ENGINEERING CALCULATIONS

I. Structural Calculations

Update Calculations from Preliminary Submission and include additional details below where applicable:

1. Gravity loads
2. Lateral loads
3. Foundations
4. Thermal loads, where significant
5. Vibration propagation
6. Progressive collapse
7. Supports for non-structural elements, including mechanical and electrical equipment on the roof and in equipment rooms, louvers, and other penetrations.
8. Steel connections
9. Blast analysis, if applicable

Calculation Formatting Notes:

1. Whenever a figure is obtained from some other page of the calculations, refer to that page number in parentheses next to the figure used in the calculation.
2. Provide sketches showing framing plans with dimensions and grid lines, freebody/force diagrams in support of the calculations. Refer to drawing numbers where the calculated items are shown on the drawing: for example, structural sizes, connection details, etc.

II. HVAC and Fire Protection Calculations:

Update Calculations from Preliminary Submission and include additional details below where applicable:

1. Provide HVAC load calculation to include building envelope data, room data, zone data and system cooling and heating load.
2. Systems pressure static analysis at peak and minimum block loads for occupied and unoccupied conditions.
3. Building pressurization analysis for peak and minimum block loads for occupied and unoccupied conditions.
4. Acoustical Consultant shall provide outdoor noise analysis including calculation and recommendation for HVAC equipment and emergency generator for outdoor noise control mitigation as required by NYC code.

5. Acoustical Consultant shall provide interior noise Level analysis including calculation and recommendation for the compliance of latest ASHRAE interior space noise level requirements.
6. Flow and head calculations for pumping systems for peak and minimum block loads for occupied conditions.
7. Sizing of fuel storage and distribution system.
8. Sizing of vibration isolators for mechanical equipment.
9. For any fire modeling generated results, submit a copy of the input data and all pertinent program material and assumptions required to understand the output and the analysis. A narrative of the input and results must be part of the calculations.

III. Plumbing Engineering Calculations

Update Calculations from Preliminary Submission and include additional details below where applicable:

1. Include entire building, including drainage calculations and hot water heating calculations.
2. Water supply calculations, including pressure.
3. Sanitary waste sizing calculations.

IV. Electrical Engineering Calculations

Update Calculations from Preliminary Submission and include additional details below where applicable:

1. Emergency power calculations, including generator calculations and starter loads, where applicable.
2. Illumination level and lighting power calculations.
3. Lighting power densities.
4. Short circuit calculations.
5. Provide short circuit calculations for all affected points in the distribution system. Indicate AIC ratings of incoming service, panelboards and overcurrent protective devices. Indicate short circuit values on appropriate points of the single line diagram.
6. Provide voltage drop calculations for all affected points in the distribution system. Indicate voltage drop values on appropriate points of the single line diagram.
7. Where applicable, submit a protective device coordination study indicating selective coordination between the service switch or circuit breaker and the distribution switches and/or the switchboards, and downstream of the switchboard.
8. Arc Flash Study.

05/C ENGINEERING REPORTS

I. Proposed Boring Plans

At the earliest possible design phase, the Consultant shall coordinate, through the DDC Project Manager, with the DDC OGI to determine a preliminary number of borings, their location, and other required investigations. DDC does not place a maximum limit on the number of borings to be taken. The number and type of investigations should be based on reasonable economic and engineering decisions and in accordance with the NYC Building Code. Boring Plan must show the building footprint and other pertinent site features.

When the Consultant finds that the preliminary borings are not sufficient to provide information for design and construction, additional borings shall be ordered as soon as possible to prevent any potential delay to the project schedule.

II. Geotechnical Report

The Project Geotechnical Engineer will utilize the information outlined in the geotechnical data report to prepare a Geotechnical Engineering Report that contains foundation design-related and construction recommendations. The Design Consultant must incorporate OGI's geotechnical data report as part of the construction bid documents.

This must be submitted as a single combined original PDF document and included as an Appendix to the Specifications for bid packaging.

III. Other Investigatory Reports

Other reports may include, but are not limited to, Blast Design, Geological Hazard, etc.

05/D UTILITY COMPANY LETTERS

I. Utility Company Request Letters

Include copies of all requests for system upgrades (electric, telephone, CATV, Hydraulic Flow Test Letter from DEP/ site connection proposal, etc.) and utility company responses, and any approval and/or utility room approval layouts. Utility Company Request Letters must be submitted as early as possible and included in the 100%DD submission along with any responses.

II. Utility Company Approval Letters

Include copies of updates to all requests for system upgrades (electric, telephone, CATV, Hydraulic Flow Test Letter from DEP/ site connection proposal, etc.) and utility company responses, and any approval and/or utility room approval layouts. Utility company approvals must be obtained by 75%CD and included in the 75%CD submission.

06 TECHNICAL DRAWINGS

06/A FORMATING REQUIREMENTS

I Digital File Formatting

All technical drawings must be delivered to DDC in a PDF digital file no larger than 10MB per file, with all layers flattened and Bookmarks associated with each discipline. Drawing submissions over 300 pages must be separated into Volumes with a table of contents at the beginning of each volume.

II. Hard Copy Submissions

If requested, the Consultant must submit 2 hard (printed) copies at full scale. CAD or BIM files may also be required. See section Z/15 for further information about BIM model and CAD drawing standards and deliverables.

III. Standard Sheet Sizes

Technical Drawings must be delivered sheets sizes of 24x36" or 36"x48", with minimum borders of two inches on the left side to allow for binding and half inch on the right side, top, and bottom. Other sheet sizes will be permitted if required by specific project needs and approved in writing by DDC.

IV. PDC Drawing Submissions

PDC Drawings must be submitted as either half size, 18" x 24" (half-size or larger if necessary). For the hard copy submission, drawings must be single-sided, B&W and collated with a binder clip.

V. Title block, Title Sheet and NYC DOB B-SCAN Requirements

Drawings must be formatted to comply with the current version of NYC DOB's B-SCAN Drawing Standards, including requirements for such things as the Drawing Set, Drawing Sheet, title block standards, and discipline designations.

The Consultant must use DDC's standard Title block and Title Sheet, as provided by DDC. For DDC AutoCAD templates please go to the DDC website and download the latest templates prior to the first milestone submission.

VI. Bid Packaging

Full size drawings must be a combined PDF document, as coordinated with the Project Manager in format required for PASSPort procurement.

Sign and Seal: Include identification, professional seals and signatures of the Consultant and any sub-consultants on all drawings to meet the requirements of Article 27-157 of the New York City Administrative Code.

VII. Addenda Drawings

Addenda drawings are to be issued before bids are received and are to be numbered consecutively within each discipline or contract. Addenda shall bear the notation, "PRELIMINARY- NOT FOR CONSTRUCTION", prior to inclusion in the Contract Documents.

VIII. Supplementary Drawings

Supplementary Drawings are issued after bids have been received and are to be numbered consecutively within each discipline or contract. Supplementary drawings shall bear the notation, "PRELIMINARY- NOT FOR CONSTRUCTION", prior to inclusion in the Contract Documents.

06/B SCHEMATIC DESIGN INTERIM I

I. Existing Conditions Drawings

Provide Existing Conditions Drawings of all parts of the building and/or site to be affected by the proposed work. Field measurement and probing may be necessary. Include documentation of engineering systems as applicable to the project.

Existing Conditions drawings must include the following as applicable:

1. A Site Plan indicating features within the right-of-way adjacent to the project area, including curb line, curb cuts, street trees and tree pits, light poles, and street furnishings.
2. Building Plans (including roof), Sections, Elevations and available or observable Details fully coordinated with available project information and updated to accurately reflect current conditions.
3. BIM model, if applicable to the project, per Section Z/16 BIM Guidelines.
4. Photographs of existing conditions in lieu of actual existing conditions drawings are not acceptable. Photographs to supplement the existing condition drawings are welcome.

II. Historic Preservation Existing Conditions Drawings

In the absence of existing measured drawings, the Consultant shall produce a set of base measured drawings of historical features in the areas of work included in the scope. Throughout the project, the Consultant shall keep a Record of all changes to existing and original features including materials, methods, design intent, and detailing. The Consultant shall provide photographic documentation of conditions and activities throughout the project.

06/C SCHEMATIC DESIGN INTERIM II

I. SD Interim II Presentation: The Preferred Option

The deliverables for the SD interim II workshop (see Section Z/04) must be updated to reflect the Preferred Option and submitted for SD Interim II review. For Cost Estimate requirements, see 07/C/II/2.

06/D SCHEMATIC DESIGN FINAL

Schematic Design Final documents must demonstrate the resolution of the program requirements and be dimensioned and scaled, showing floor-to-floor heights and room sizes. The following should be represented in a technical drawing format:

I. Existing Conditions Drawings

Provide updated existing conditions drawings.

II. Code Compliance Drawings

/a Life Safety Plans
Life safety plans indicating exits, egress paths, travel distances, occupant loads, occupancy classifications, fire rated enclosures, corridor widths, exit door and stair capacity, safe areas, exit signs, etc. Egress paths must account for furnishings and/or obstructions.

/b ADA and Accessibility Analysis
For required ADA compliance deliverables see Section 1000.02/C for documentation requirements by phase and Section Z.09 below for description of deliverables.

III. Architectural Drawings

/a Site Plan
The site plan must indicate materials, physical features and site furnishings, major grading, utilities, property lines, project limit, easements, buildings or structures on and adjacent to the project, and plantings. The site plan must indicate features within the right-of-way adjacent to the project area, including curb line, curb cuts, street trees and tree pits, light poles, and street furnishings. It must be fully labeled and based on a surveyed point of beginning. Include a north arrow and graphic scale.

/b Floor Plans
Fully labeled floor plans must be prepared for all floors within the scope of the project. Floor plans must indicate all program spaces and provide test furniture layouts to demonstrate functionality. Corridors, stairs, elevators, exits, mechanical chases, and compliance with Accessibility Standards, must be evident. Overall and critical dimensions must be shown.

/c Roof Plan
Roof plans must indicate, at a minimum, the stormwater drainage features, all roof-mounted equipment including strategies for screening from public view, and skylights. Top of roof and top of parapet elevations must be indicated. Requirements for Sustainable roofing zones as well as FDNY access must be identified.

/d Exterior Elevations and Sections
Exterior elevations and building sections must indicate fenestration, entry, access, key elevations, site features, and materials. This must include a schematic wall section of the exterior envelope assembly showing whole building from foundation to roof, suggested at 3/4" scale or as appropriate to the project.

IV. Engineering Drawings

Engineering drawings must indicate all disciplines applicable to the project including structural systems, HVAC, fire protection, electrical and fire alarm system, and plumbing systems indicating path of services, locations of stacks and risers, and equipment service room space requirements. Drawings must indicate point of entry for utility company services and connections to available services on site. In addition, HVAC/Fire Protection engineering drawings must indicate the following:

1. System types, capacities, and zoning
2. Location and spatial layout of major equipment
3. Main ductwork routing
4. Site utilities: Conceptual design solutions for on-site utility systems and off-site utility work
5. Mechanical/Service room locations

V. Axonometric Drawing and Perspectives

Axonometric drawings, perspectives, and other sketches must be prepared as necessary to fully illustrate and document all major elements of massing, circulation, and systems design.

VI. Percent for Art (if applicable)

Provide options for inclusion of art in the project. Proposers to identify multiple siting opportunities for Art Work, and Proposals to include ideas for possible Art Work locations, types (2D or 3D), and materials, if relevant. Preferred locations include those most visible to the public or are intended as gathering places and can best enhance social space and use.

06/E PDC TECHNICAL DRAWINGS

The PDC Preliminary drawing submission for Capital Projects should include deliverables from Schematic Design Final Sections I. Existing Conditions Drawings, III. Architectural Drawings and, for Systems Replacements, IV. Engineering Drawings.

For any project with rooftop equipment, provide section showing sight lines from the sidewalk to rooftop equipment, to demonstrate level of visibility from sidewalk. On the roof plan, provide dimensions from the parapet to equipment location.

06/F DESIGN DEVELOPMENT

The requirements for the Drawings described above in Schematic Design must be updated to reflect all changes and project developments for Design Development. Additional deliverable requirements specific to the Design Development Submission will be described below.

I. Drawing Guidelines

1. Drawings must be fully noted and indicate overall and key dimensions as well as finish floor elevations. Use the same names, room numbers, gridlines, column designations, match lines, and drawing orientation throughout the drawings for all disciplines and specialties.
2. For rehabilitation projects, drawings must clearly distinguish between the new and the existing to remain and/or to be modified. This includes existing building elements, equipment, systems, structural, mechanical, electrical, etc.
4. All structural work must be shown on separate structural framing plans and detail drawings independent of architectural drawings. All openings through primary structural members such as walls, floors etc. shall be fully dimensioned in the plans. Criteria for the layout and details of small penetrations may be provided in the typical details.
3. Mechanical, Sprinkler, Electrical floor plans: Mechanical ductwork and piping layout, Sprinkler piping and sprinkler heads layout, electrical lighting layout shall be shown on architectural (RCP) reflected ceiling plan.

II. General Sheets

1. General Notes Sheets for all disciplines: DOB notes, plot plans, project scope. All Special Inspections and Progress Inspections must be identified on the title sheet or sheets for all trades.
2. Code Compliance Analysis Sheets

a. Building Code and Zoning Analysis

i. Zoning Data including diagrammatic resolution of urban design requirements.

ii. Historic district including location within and limits of the district, as applicable.

iii. Construction classifications, number of stories, occupancy classification, fire protection of the structural elements, overall building area and area by floor, building height, etc.

b. Life Safety Plans: update as required.

c. ADA and Accessibility Diagrams and Analysis: Diagrams and analysis must reflect the complete scope of the of the project. For required ADA compliance deliverables see Section 1000.02/C for documentation requirements by phase and Section Z.09 below for description of deliverables.

d. EN Sheets: NYCECC energy analysis and supporting documentation must be provided per DOB requirements for all applicable work. See Section Z.10 for NYC Energy Code Compliance required deliverables.

3. Key Plans
4. Phasing/Staging Plans: preliminary, as applicable.
5. Provide an updated site survey and indicate location of borings.

III. Civil Engineering Drawings

1. Site Demolition, Protection and Removals Plans: provide a preliminary Removals Plan
2. Site and Paving Plan:
    a. Include sidewalks, driveways, yards, curbs, and curb cuts, adjacent structures including walls, fences, railings, and buildings, including number of stories.
    b. For new and existing buildings, indicate number of stories, clearance from building lines, finish floor elevations, building footprint, and overhangs.
    c. Indicate encroachments on site, easements, property lines, north arrow, etc.
3. Builders Pavement Plan: submission must be initiated at this phase if required.
4. Grading and Drainage Plans:
    a. Indicate grades to show the surface flow characteristics of the Site
    b. Indicate spot grades at entrances, property lines, walls, stairs, drain inlets, and major changes in site slope
    c. Provide stormwater management design calculations
    d. Demonstrate compliance with Accessibility Standards.
5. Earthwork Plans: provide preliminary earthwork plans
6. Utility Plans: indicate all basic surface and subsurface utilities, including drainage, electrical, water, site utility systems, and any subsurface structures. Indicate proposed connections from site utilities to building(s).
7. Soil Erosion and Sediment Control Plans: provide preliminary plans which indicate, as required, measures to prevent soil erosion, sedimentation of sewer systems and airborne dust pollution during construction.
8. Details: provide relevant typical and significant non-typical details

IV. Landscape Drawings

1. Planting and Tree Removals Plan:
    a. Identify materials for reuse or recycling
    b. Indicate invasive pest host species plants and invasive plant species requiring pruning or removal
    c. Outline disposal protocols as mandated by New York State Department of Agriculture Markets (NYSDAM)
    d. Identify all trees and plants to be removed
    e. Indicate tree and plant protection as required.

2. Landscape Plan:
    a. Include plantings and street trees. When street trees are in pavement include tree pit material, ground cover, and planting.
    b. Include a full planting list with Latin botanical names, common names, sizes and root containment types, assets, and constraints. This plant schedule must comply with the most current recommendations from the NYSDAM and NYC Parks regarding invasive pests and species or hosts.

3. Landscape Sections and Elevations:
    a. Include key elements such as fences, walls, gates, site furnishings, and significant new plantings, coordinated with the appropriate architectural drawings.
    b. Represent the buildings with their volumes, windows, doors, and omit details unnecessary to site design.

4. Site Lighting Plan: provide a preliminary site lighting plan
5. Irrigation Plan: provide a preliminary irrigation plan
6. Hardscape and Materials Plan: indicated all walkways, curbs and hardscape surfaces and proposed materials, demonstrate compliance with Accessibility Standards.
7. Site Furnishings Plan: site furnishing, structures, signage and integrated artwork, if applicable.
8. Site Details: provide typical and significant non-typical details

V. Architectural Drawings

1. Existing Conditions, Selective Removals and/or Demolition Drawings
2. Site Plan
    a. Minimum scale 1/32" = 1'.
    b. If multiple sheets are required, provide key plan with match lines.

3. Architectural Floor Plans must include:
    a. Fully labeled floor plans. Minimum scale 1/8" = 1' Include keyed section, elevation and interior elevation markers.
    b. Dimensions including room sizes, ADA maneuvering clearances, and room areas, etc.
    c. Neighboring building lines, property lines and column grids.
    d. Room Names/Identification of Program Elements identified to align with the programmed space name in the Specific Project Requirements.
    e. Material indications as per conventional graphic standards indicating all new construction. New construction should be graphically distinct from existing construction to remain. Include a symbol, line type and material legend as applicable.
    f. Door, window and partition type tags.

g. Built-in Furniture and Equipment must be indicated on all plans and compliant required egress widths and accessibility routes indicated in key locations. For required ADA compliance deliverables see Section 1000.02/C for documentation requirements by phase and Section Z.09 below for description of deliverables.

h. Finished Floor Elevations must be indicated at every location where the floor elevation changes, such as at top and bottom of stairs, landings, and ramps. Floor elevations must also be indicated for the floor level in general.

i. Integration of artwork if participating in Percent for Art.

j. Fire ratings of walls, partitions, ceilings, shafts, roofs, and structural elements such as columns and slabs.

4. Roof Plan

5. Architectural Reflected Ceiling Plans must include:
    a. Light Fixtures at all locations such as ceilings and walls, as proposed.
    b. Air Supply Diffusers and Return Grilles. Locations of air outlets shall be coordinated with mechanical layout.
    c. Sprinklers, Smoke Detectors and other devices and appurtences.
    d. Ceiling Heights at every location where the ceiling elevation changes.
    e. Materials.
    f. Keying in of all building section, interior elevation and detail markers.

6. Architectural Exterior Elevations and Building Sections include:
    a. Exterior Elevations of all vertical exterior surfaces.
    b. Longitudinal and transverse Building Sections.
    c. Site Features such as walls, fences, trees, artwork, street furniture, and adjacent structures.
    d. Materials fully annotated.
    e. Finish Floor Elevations on building sections and elevations in coordination with plans.
    f. Floor-to-Floor Heights on building sections.
    g. Finished Grades on all elevations and building sections in coordination.
    h. Column grids and room names.

7. Wall Sections: include typical wall sections for each exterior wall type with full foundations and roof assemblies. Include Energy performance information for assemblies of each wall type.

8. Stairs and Ramps: must include:
    a. Enlarged plans and sections for each stair or ramp condition.
    b. Note and dimension stair riser and treads, head clearances, landing clearances and turning radius, edge protection, guardrails and handrails.

9. Partition Types must include:
    a. Cross-references to floor plans with appropriate tags
    b. Sectional conditions at the floor and ceiling and applicable fire stopping.

10. Door Schedule and Types must include:
    a. Preliminary door types
    b. Door schedule with, at a minimum, dimensions, operation, fire rating, and material.
    c. Cross references to floor plans with appropriate tags
    d. Hardware Schedule: Preliminary

11. Window, Storefront and/or Curtain Wall Schedule and Types: provide preliminary fenestration/louver schedule and types including energy performance requirements.
12. Interior Elevations, Perspectives, and Axonometric illustrations must include:
    a. Interior Elevations, developed, if requested, into one-point perspective sketches to illustrate how all the elements and surfaces are coordinated, and how the ceiling, walls, and floor interface.
    b. Axonometric Illustrations, if requested, will detail sections through complicated connections and material intersections.
    c. Materials including trim, window treatment, registers, controls, textures, and colors.
    b. Built-in Furniture and Equipment indicating layout, configuration, and material.
    d. Room Designations.
    c. Vertical Dimensions, floor elevations, and floor-to-ceiling heights. For required ADA compliance deliverables see Section 1000.02/C for documentation requirements by phase and Section Z.09 below for description of deliverables.
13. Finish Schedule: preliminary interior finish schedule with notable fire class and material performance data.
14. Millwork Schedule: Preliminary

VI. Furniture and Equipment Support

1. Base Services
    a. Furniture Layout Drawings – Floor Plans

    The Consultant must prepare furniture layout plans to demonstrate a conceptual understanding of the capacity and function of each room as per Sponsor Agency requirements. Layouts for furniture and equipment must:

    i. be prepared with basis-of-design manufacturer's templates.
    ii. layout shelving and indicate height and book count for each unit, as well as a total book/media count for library projects.
    iii. incorporate all loose furniture, systems furniture, built-ins, and equipment, including kitchens and laboratory equipment.
    iv. demonstrate compliance with egress and accessibility requirements.
    v. verify that all such equipment fits within the designated space.
    vi. provide for mechanical, electrical, data, telephone or any other physical need for the operation of these items.

2. Expanded Services (if requested)

    The consultant is responsible for preparing a furniture and equipment package as described below:

    a. Furniture Layout Drawings – Floor Plans
    For expanded services, the Consultant must prepare furniture layout plans to demonstrate a specific understanding of the selected furniture. In addition to the requirements in base services, layouts for furniture and equipment must be prepared with selected manufacturer's templates.

    b. Preliminary Furniture and Equipment Schedule
    The schedule shall indicate the quantity of each element and specify manufacturer, model, materials, finishes, upholstery, accessories, etc.

VII. Graphic Design and Wayfinding Design

As required.

VIII. Vertical Transportation Drawings

1. Key Plans indicating all areas of work.
2. Lobby and elevator machine room plans including all elevator control equipment, power equipment, and mechanical equipment.
3. Riser Diagram indicating elevator installation, floors, elevator travel, and openings.
4. Plans, Elevations and Sections of elevator cab.
5. Sketches for controls such as call buttons.
6. Demonstrate compliance with Accessibility Standards. For required ADA compliance deliverables see Section 1000.02/C for documentation requirements by phase and Section Z.09 below for description of deliverables.

IX. Structural Engineering Drawings

The design and the structural systems must be developed and defined in accordance with the loads tabulated in the loading data.

1. Governing Standards: provide a complete list of applicable design standards.
2. Structural General Notes
    a. Structural Loading Information: the following information and its source must be provided in an easy-to-understand tabular format for each floor of the building. The structural drawings shall clearly indicate all the gravity and lateral loads for which the structure has been designed.
        i. Dead and live loads for all floors and roof.
        ii. Snow load including: Flat roof snow load (Pf), snow exposure factor (Ce), snow load importance factor (I) and thermal factor (Ct).
        iii. Wind loads: Basic wind speed, wind importance factor (I), wind exposure (C), internal pressure coefficient (GCpi) and wind pressures for components and cladding.
        iv. Earthquake loads: Seismic importance factor, occupancy category, mapped spectral response accelerations (Ss and S1), site class, spectral response coefficients (Sds, Sd1), seismic design category, basic seismic force resisting system, response modification factor (R), system over strength factor (Ω0) deflection amplification factor (cd), redundancy coefficient (ρ) and analysis procedure used for design.
        v. In addition to the code specified design criteria, the following shall be provided:

        - Design Base shear: Calculated Design Base Shear for both the East-West and the North-South directions, considering both Wind and Seismic
        - Total Building Sway Deflection for both Wind and Seismic Loadings

    b. Material Information
        i. Concrete: Provide basic material properties for concrete to be used for all the structural elements. Include compressive strength, entrained air content, maximum aggregate size, allowable w/c ratios, unit weight or aggregate type, and anticipated admixtures, etc. Pozzolans must be used to substitute for cement to the maximum extent possible.

ii. Reinforcement: Provide the ASTM material designations for the type of rebar to be used. Provide the type and dosage of structural synthetic fibers to be used for shrinkage and temperature stresses.

iii. Joints: Provide information on the type and spacing of all expansion, contraction and construction joints.

iv. Masonry: Provide ASTM designations for the types of masonry units and mortar to be used on the project, such as bricks, CMU, etc.

v. Steel: Provide the ASTM material designations for the steel to be used on the project. Itemize by the AISC shape as applicable, including material types, grades and sizes.

vi. Steel Deck: Provide basic information for the type of deck to be used, including profile and depth, ASTM material designation, span conditions, coatings, and method of attachment. Indicate areas where shoring of the metal deck will be required.

vii. Wood and Engineered Wood Products: Provide the grade and species for all products in addition to their design requirements, spacing, and any special treatments required (pressure treated, fire resistance, etc.). Identify the type of sheet goods (OSB, plywood, etc.) in addition to their thicknesses and locations for use.

3. Demolition or Removal Drawings, along with support of adjacent structures, as applicable.
4. Foundation Plans must include:
    a. All footings and/or pile caps with major sections and details referenced.
    b. The allowable soil bearing pressure for footings and the acceptable bearing strata for deep foundations.
    c. Footing/pile cap elevations.
    d. Extent of underpinning, if applicable
5. Slab Plans must include:
    a. Locations of all control joints, isolation joints, along with their details.
    b. All slab edges, opening and penetrations (must be located and dimensioned)
6. Floor and Roof Framing Plans must include:
    a. Building expansion joints.
    b. Elevations, sizes, thickness and layout of all structural components (such as slabs, beams, columns, trusses, etc.)
    c. Load resistance system must be clearly defined. Elevations of the lateral system must indicate all applicable forces acting on the lateral system. End reactions for all major members should be shown on plans.
    d. Weights and locations of major mechanical equipment and their supporting systems.
7. Details
    a. Foundation Details must include:
        i. Major foundation sections and details indicating type, size, reinforcement and pertinent waterproofing details.
        ii. All structural slabs and slabs on grades to be detailed with proper subgrade compaction and necessary waterproofing details.
        iii. All necessary supports for cladding (such as brick shelf, embedded plates, anchors, etc.), as applicable.
        iv. Typical underpinning details, include all relevant information of the adjacent foundations.

b. Typical details for the construction joints.
c. Typical elevator and sump pit details.
d. Significant non-typical details
e. Framing Details must include typical and significant non-typical connection details. Information required for connection design by the Code of Standard Practice shall be indicated on the drawings.

8. Schedules
   a. Footing Schedule: with representation for grade beam and pile cap details, as applicable.
   b. Column Schedule: Floor loads and total cumulative loads at the base of each column shall be shown in the column schedule

X. HVAC Drawings

1. Governing Standards: provide a complete list of applicable design standards.
2. HVAC General Notes:
   a. Description of control strategy and sequence of operations for all equipment. Indicate occupied mode, unoccupied mode 24-hour, and alarm status.
   b. Noise control evaluation for projects that incorporate new or replacement of exterior mechanical/electrical equipment, as required to comply with NYC noise control requirements.
   c. Corrosion protection for underground metallic piping, if required by the Geotechnical Report.
   d. Updated fuel and utility requirements.
3. Site Plan
4. HVAC Demolition or Removal Drawings, as applicable
5. HVAC Plan(s) must include:
   a. Single line piping and ductwork schematic layout — with preliminary sizes indicated.
   b. Vertical risers, shafts, stacks, and chimneys.
   c. Interior zone terminal air units.
   d. Perimeter zone terminal units.
   e. Zoning
   f. Air outlet devices.
   g. Air balance relationships between spaces.
6. Roof Plan showing all roof-mounted equipment with required clearances and access to roof.
7. Mechanical Equipment Room, showing mechanical equipment, ductwork, and piping, including equipment access and service requirements.
   a. Minimum 1'= ¼" scale drawings of mechanical equipment room(s)
   b. MER Part-Plans
   c. Minimum of (2) two sections and elevations are required.
8. Single line schematic flow and riser diagram(s):
   a. Air, Water, (DX) Refrigerant and Steam riser diagrams.
   b. Airflow quantities (including minimum ventilation air flow requirements) and balancing devices for all heating/cooling equipment.

c. Flow/energy measuring devices for water and air systems for all cooling, heating, and terminal equipment. Flow diagrams must be provided for new systems and existing systems being modified.

d. BMS Architectural layout

9. Automatic control diagram(s):
    a. Control flow diagrams showing all sensors, valves, and controllers (analog and digital).
    b. Sequence of operations for all systems that describes the control sequences during occupied, 24-hour operations, and unoccupied conditions.
    c. Control diagrams must be provided for new BMS systems and for new and existing systems when inter-phasing with new BMS system.

10. Schedules: Provide schedules of major equipment that includes:
    a. Chillers, air cooled split system, roof top units, boilers, pumps, air handling units, terminal units, air outlets, cooling towers, and all equipment required for 24-hour operation.
    b. All major Mechanical System equipment and components must be clearly identified with all operating performance requirements, utility requirements and operating efficiencies.
    c. Mechanical equipment schedules must include as a minimum for each entry: system equipment tag, description of service, physical size, operating weight, performance capacity, operating efficiency, motor brake horsepower, motor horsepower, electric voltage, amperage, phase, frequency, fossil fuel type, fuel consumption rate, fuel delivery pressure and/or temperature requirements, water and/or steam consumption rates , water and/or steam delivery pressure and/or temperature requirements, basis of design equipment manufacturer and model number.

XI. Fire Protection Drawings

1. Governing Standards: provide a complete list of applicable design standards.
2. Fire Protection General Notes:
    a. Fire pump selection and ancillary equipment.
    b. Special fire protection systems (e.g., kitchen extinguishing system), where applicable.
3. Site Plan:
    a. Fully dimensioned plot plan indicating street name(s), location of building(s) on the lot, & distance to closest corner and Height of the Building.
    b. Show connection to city main, curb box valve, size of piping & Siamese.
4. Fire Protection Plan(s) must include:
    a. Equipment spaces for fire protection systems (e.g. fire pump, fire command center).
    b. Fire protection water supply lines and fire hydrant locations.
    c. Standpipes and sprinkler risers.
    d. Zoning.
    e. Location of special fire protection requirements (kitchens, computer rooms, etc.)
    f. Existing equipment.
5. Fire Projection Equipment Rooms showing RPZ, fire pump, hot water heating system, Back-flow preventer rig, piping distribution line, including service access requirements;
    a. Minimum of 1'= ¼" scale drawings
    b. Plans, Sections and elevations
6. Riser Diagrams for sprinkler system.

XII. Electrical, Communications, A/V, Security and Fire Alarm Drawings

1. Governing Standards: provide a complete list of applicable design standards.
2. Electrical General Notes
3. Electrical Site Distribution Plan:
    a. Proposed site distribution for power and communications, proposed service entrance and location of transformers, generators, and vaults, etc.
    b. Proposed location of electrical service room, telephone service, property lines, manholes, hand-holes, duct banks for power, telephone, and cable television. Coordinate electric service room location and anticipated points of entry.
    c. Site lighting and site electrical outlet systems, ISO foot-candle curves.
    d. PV array layouts, as applicable
    e. EV charger locations and types
4. Security System Site Plan must include proposed locations for CCTV, duress alarm sensors, and access controls for parking lots.
5. Electrical Demolition or Removal Drawings, if required, must indicate electrical equipment required to be removed or relocated. Show source of power from which this equipment must be disconnected. Indicate staging plans, if required.
6. Electrical Distribution Plans:
    a. Proposed major electrical distribution scheme and location of electrical rooms and closets and communications closets.
    b. Proposed major routing of major electrical feeder runs, bus ducts and communication backbone systems.
    c. PV array layouts, as applicable
    d. Building grounding system
    e. Lightning protection system
7. Lighting Distribution Plans:
    a. Layouts of typical rooms and spaces
    b. Photometric plans under normal and emergency lighting conditions
    c. Typical power wiring and controls
8. Security System Floor Plans:
    a. Proposed major routing of security systems.
    b. Proposed locations for access controls, intrusion detection devices, CCTV and local panels.
9. Fire Alarm Plans must include equipment spaces for fire alarm panels and fire command center, and smoke control system(s), where applicable.
10. Communications Plans, showing telecom outlet locations and MDF/IDF room equipment layout.
11. Audio and Visual Plans, showing proposed A/V devices and front end equipment locations
12. Electrical Service Rooms, showing service/distribution conduit including electrical panel access requirements, emergency generation service requirements.
    a. Minimum of 1/4" scale drawing
    b. Provide plans, Sections and elevation.

13. Details and Diagrams:
    a. Single Line Diagrams of signal system including telephone, data, security, public address, and others.
    b. Fire Alarm Riser Diagram
    c. Communications vertical and horizontal structure cabling diagrams and details
    d. A/V systems diagrams and details
    e. PV array system diagrams
    f. EV charging details

XIII. Plumbing Engineering Drawings

1. Governing Standards: provide a complete list of applicable design standards.
2. Plumbing General Notes
3. Site Plan:
    a. Outside services exiting or entering the building and means of stormwater detention or retention.
    b. Related appurtenances, such as catch basins, inlets, manholes, and pipe routing.
    c. Fuel dispensers and fuel storage tanks, where applicable.
    d. Plumbing Demolition or Removal Drawings, if applicable
4. Plumbing Floor and Roof Plan(s):
    a. Proposed building zoning and major piping runs.
    b. Locations of proposed plumbing fixtures and equipment, including: tanks, sewage ejectors, sump pumps, interceptors, meters, backflow preventers, hose bibs, hydrants, water booster pumps, hot water heaters, hot water circulation pumps, stormwater storage tanks with all required pumps and filters.
    c. Piping material and related equipment for the various systems.
    d. Roof and site drainage and all related penetrations, drains, water retention, and typical details.
5. Diagrams and Details:
    a. Systems Schematics and Flow Diagrams
    b. Riser Diagrams for waste and vent lines
    c. Riser diagrams for domestic cold and hot water lines
    d. Riser diagrams for gas, fuel, etc.
    e. Riser diagrams for storm water and disposal

06/G CONSTRUCTION DOCUMENTS: 75%

The requirements for the Drawings described above in Schematic Design and Design Development must be updated to reflect all changes and project developments for Construction Documents as well as address all comments provided in the 100% DD submission. Additional deliverable requirements specific to the Construction Document Submission will be described below:

I. Drawing Guidelines

1. Drawings must be fully coordinated, dimensioned, keyed, noted and detailed for construction.
2. Details must depict the actual sizes of wall components

3. The construction documents must account for construction tolerances for the respective structural materials used in the project. These tolerances must be in accordance with the codes of standard practice.
4. For MULTIPLE CONTRACTS – WICK'S LAW project see Bid Documents Section Z14 below for further details on drawing organization among trades.

II. General Sheets

1. General Notes Sheets for all disciplines: include General Conditions
2. Code Compliance Analysis Sheets
    a. Building Code and Zoning Analysis Sheet
    b. Life Safety Plans
    c. ADA and Accessibility Diagrams and Analysis
    d. EN Sheets: fully coordinated and developed final Energy Analysis for all disciplines.
3. Phasing/Staging Plan
4. Site Survey
5. Responsibility Matrix

    Include a Responsibility matrix which identifies all scope and elements which require the Contractor to coordinate with DDC/Sponsor Agency vendors, including but not limited to existing equipment and furnishing demolition, new equipment, furnishing, appliances, AV/IT devices, communications wiring, signage, and wayfinding, etc. The Matrix must include distinctions between supplier and installer as well as list extent of coordination requirements, including power and data supply.

III. Civil Engineering Drawings

1. Site Demolition, Protection and Removals Plans
2. Site and Paving Plan
3. Builders Pavement Plan
4. Grading
5. Drainage Plans
6. Earthwork Plans
7. Utility Plans
8. Soil Erosion and Sediment Control Plans
9. Details: All proposed Civil-related details required for construction and execution of the project must be included in the submission

IV. Landscape Drawings

1. Landscape and Tree Removals Plan
2. Landscape Plan
3. Landscape Sections and Elevations
4. Site Lighting Plan
5. Irrigation Plan

6. Hardscape and Materials Plan
7. Site furnishings Plan
8. Site Details: All proposed site-related details required for construction and execution, including site related structures and furnishings, their footings, foundations, and reinforcement. Include pertinent drainage structures, pavements, lighting, signage, other relevant materials, and all dimensions and finishes.

V. Architectural Drawings

1. Existing Conditions, Selective Removals and/or Demolition Drawings
2. Phasing and Key Plans
    a. Provide phasing plans as required to allow for the contractor to adequately plan for project delivery.
    b. Provide key plans and match lines for constructability references.
3. Site Plan
4. Architectural Floor Plans
5. Roof Plan
6. Architectural Reflected Ceiling Plans:
    a. Include all ceiling mounted security, fire protection devices and exit signs.
    b. Architectural Exterior Elevations and Building Sections
7. Architectural Exterior Elevations and Building Sections
8. Wall sections must include:
    a. All exterior envelope and interior fire barrier conditions.
    b. Air barrier and thermal assemblies, materials, ratings, and characteristics in complete detail.
    c. Fire ratings of walls, partitions, ceilings, shafts, roofs, and structural elements such as columns and slabs.
    d. A complete waterproofing membrane must be fully coordinated, developed and detailed.
9. Stairs and Ramps: Include all details.
10. Partition types:
    a. Include structural framing and seismic as required.
    b. Indicate height limitations and/or requirements for bracing.
11. Door Schedule and Types
12. Door Hardware and Details:
    a. Hardware types which include locking functions and keying, if required
    b. Fully developed door details keyed to schedule
    c. Hardware Schedule
13. Window, Storefront and/or Curtain Wall Schedule and Types: include all details.
14. Interior Elevations: Ensure typical and specific mounting heights are dimensioned for all devices and meet requirements of ADA accessibility.
15. Finish Schedule
16. Millwork Schedule

17. Exterior Details: Roof, exterior envelope, Waterproofing, including full substructure, details and water stops.
18. Interior Details: Complete ceiling, base, floor assembly and transition details

VI. Furniture and Equipment Support

1. Base Services
    a. Furniture Layout Drawings – Floor Plans
    The consultant shall clearly indicate which items on the plans are NIC.
    b. Responsibility Matrix
    The Consultant must incorporate furniture and equipment into the Responsibility matrix identified above in Section Z06/F/II)

    Designate Contractor responsibility for mechanical, electrical, data, telephone or any other physical need for the operation of the Sponsor Vendor furniture and equipment items.
2. Expanded Services (if requested)
    a. Furniture and Equipment Schedule
    b. Furniture and Equipment Cost Estimate
    The estimate must identify the vendor, indicate the quantity of each element and specify manufacturer, model, materials, finishes, upholstery, accessories, and any other item needed for a complete installation.

VII. Graphic Design and Wayfinding Design

As required

VIII. Vertical Transportation Drawings

1. Key Plans
2. Lobby and elevator machine room plans
3. Riser Diagrams
4. Plans, Elevations and Sections of elevator cab
5. Details including:
    a. Internal finishes, construction of car, emergency exits, lighting (including emergency lighting), handrail, exhaust fan, flooring, and all accessory equipment.
    b. Detail Drawings of hall buttons, lanterns, and car operating panel.
    c. Emergency Recall
    d. Elevator shaft, elevator door head, sill, jambs, etc.

IX. Structural Engineering Drawings

The design and the structural systems must be developed and defined in accordance with the loads tabulated in the loading data.

1. Governing Standards
2. Structural General Notes

3. Demolition or Removal Drawings, must include:
    a. Required construction procedures
    b. Special shoring and bracing requirements
    c. Soil Boring Plan and soils analysis, provided by DDC and incorporated into the drawing set
    d. Boring Logs, provided by DDC and incorporated into the drawing set
4. Foundation Plans
5. Slab Plans
6. Floor and Roof Framing Plans
7. Details:
    a. Foundation Details
        i. Substructure waterproofing details coordinated with Architectural drawings, including locations of water stops.
    b. Framing Details
        i. Details of all structural elements, including their connections, equipment supports, site structures, base plates and anchor bolts, camber, shear stud types and lengths.
        ii. Details of all construction, control, and expansion joints.
        iii. Details for anchorage of building system equipment and non-structural building elements (may be shown on mechanical, electrical, or architectural drawings, as applicable).
8. Schedules: (as applicable)
    a. Footing Schedule
    b. Column Schedule
    c. Structural Wall schedule
    d. Beams schedule
    e. Slab Schedule
    f. Deck Schedule

X. HVAC Drawings

1. Governing Standards
2. HVAC General Notes
3. Site Plan
4. HVAC Demolition or Removal Drawings, as applicable
    a. Limits of demolition must be well-defined. New points of connection must correspond to points of connection on the demolition drawings.
    b. If covers and other accessories (e.g., fin tube covers) are removed during demolition, they must be clearly labeled for replacement in the drawings indicating new work.
    c. If demolition cross hatching is applied to an area, anything in the area that should not be removed must be clearly defined.
5. HVAC Plan(s) and Roof Plans must include:
    a. All components of all systems, including room-by-room duct distribution, diffuser, register and return air duct transfer (2 duct elbow minimum) locations.

b. Double line piping (3" and greater) and ductwork layout . Ductwork is drawn double-line for main trunks, around AHUs, and in corridors to verify adequate installation space and reduce interferences.

c. Show locations of automatic control sensors (eg. Temperature, relative humidity, CO2, etc.)

d. Refrigerant pipe routing to and from interconnected pieces of equipment must be sized and show on the HVAC plans. Indicate all filter dryers, solenoid valves, strainers, pressure relief valves, flexible connections, receivers and sight glasses.

e. Coordinated with electrical power requirements for HVAC equipment, duct smoke detectors, fire and smoke dampers, fire alarm and fan shut-down.

f. All air-handling units must clearly identify all coil sections, filters, access locations, and the mixing plenum with sizes. The location and size of all equipment must be indicated. Indicate openings, penetrations, and support.

g. Multiple, secondary equipment (e.g., VAV boxes) have distinctive, individual tag numbering and equipment schedules sufficient for identification of the equipment during TAB, commissioning, and building operation and maintenance; the tag number is consistent on all drawings and on the equipment.

6. Mechanical Equipment Room Drawings must include:
   a. Sufficient sections (at least two) which show elevations of all equipment, piping, ductwork, and structural support.
   b. Double line and scaled representation of all ductwork and piping
   c. All Dampers, fire and volume control, true to size

7. Single line schematic flow and riser diagram(s):
   a. Must indicate all valves, automatic controls, dampers, temperature sensors, control valves, return/relief air routing, and maximum and minimum air quantities for supply, return and relief air.
   b. Provide a control system legend.
   c. Show locations of flow/energy measuring devices and interface with BMS
   d. Equipment control diagrams.
   e. (BMS) Building Management System: Provide Architectural BMS Layout.

8. Schedules

   Equipment schedules list make and model numbers, match other drawings, and performance data appears sensible. Equipment schedule must match equipment unit labels on plans.

XI. Fire Protection Drawings

1. Governing Standards
2. Fire Protection General Notes
3. Site Plan
4. Fire Protection Plan(s) must include:
   a. Branch Sprinkler piping and head locations
   b. Proposed Piping layout and pipe sizes
   c. Location of ancillary equipment such as alarm, valves and devices, Inspector and Fire Department Connections, Fire pumps, main drains, anti-freeze loops and hose cabinets
   d. Fire Protection Equipment Rooms

e. New Fire protection service: All new and replacement back-flow preventer shall be provided minimum ¼"scale MER drawing part plan including section/elevation. Plan to include Back-flow preventer access dimension and floor drain location as mandated by NYC BC.

5. Fire Protection Details:
    a. Life Safety stairway pressurization fans
    b. Fire pump configuration.
    c. Anchorage of underground fire protection water supplies
    d. Standpipe riser
    e. Installations of waterflow switches and tamper switches
    f. Sprinkler floor control valves, sectional valves and test assembly
    g. Non-water-based fire extinguisher systems
6. Riser Diagrams

XII. Electrical, Communications, A/V, Security and Fire Alarm Drawings

1. Governing Standards
2. Electrical, Communications, Security and Fire Alarm General Notes
3. Electrical Site Distribution Plan
4. Security System Site Plan
5. Electrical, Communications, Security and Fire Alarm Demolition or Removal Drawings
6. Electrical Distribution Plans:
    a. Show all distribution for power and communications (normal and emergency)
    b. All home runs must be shown and properly indexed as to number and size of conduit, wire and destination.
7. Lighting Distribution Plans:
    a. Lighting Fixture, control and zoning schedules
    b. Emergency Power lighting
    c. Security System Floor Plans must include final layout of all devices and conduit runs.
8. Fire Alarm Floor Plans must show locations of fire alarm devices and annunciator panels.
9. Electrical Service Rooms
10. Equipment Schedules: switchgear, switchboards, unit substations, motor control centers and panelboards. Schedules must include circuit destination, load in volt-amperes, overcurrent setting, load summary, connected, spare and demand load.
11. Details and Diagrams:
    a. Single Line Electrical Diagram must include:
    b. Primary and secondary power distribution including normal, emergency and UPS.
    c. Distribution panels, downstream panelboards, major mechanical equipment, emergency panels and transformers
    d. Single Line Fire Alarm Diagram
    e. Single Line Signal System Diagram must include telephone, intercom, data, security, public address and other systems shown on drawings.

f. Control Wiring Diagram
g. Lighting Fixture Details with mounting support
h. Underfloor Distribution Details
i. Fire Alarm Riser Diagram

Plumbing Engineering Drawings

1. Governing Standards
2. Plumbing General Notes
3. Site Plan:
    a. Location of Storm and sanitary sewers, connections to existing sewers, pertinent inverts, size and location of means for stormwater detention or retention, water services, domestic and fire, and the location of gas service, integrated with existing systems, indicated on the site plan and coordinated with floor plans.
    b. Grade elevations and elevations of catch basins, manholes and drains.
    c. Fuel dispensers and fuel storage tanks details and notes.
    d. Gasoline and diesel systems
4. Plumbing Demolition or Removal Drawings, if applicable
5. Plumbing Floor and Roof Plan(s) must include:
    a. Location and size of all drains and roof drains, standards and interior piping for storm, sanitary, cold water, hot water, circulating, gas and fire standpipe.
    b. Size and capacity indicated for all oil separators, hot water storage tanks, sump pumps, sewage ejectors, house pumps, circulating pumps, stormwater detention tanks, suction tank, and stormwater tanks.
6. Diagrams and Details
7. Plumbing Fixture Schedule
8. New domestic water service: All new and replacement back-flow preventer shall be provided minimum ¼"scale Mechanical Room drawing part plan including section/elevation. Plan to include back-flow access dimension and floor drain location as mandated by NYC BC.

06/H CONSTRUCTION DOCUMENTS: 100%

The Technical Drawings must be fully coordinated and address all comments provided in the 75% CD submission.

06/I BID PACKAGING

For Bid Packaging, the Technical Drawings must conform to the 100% CD Submission requirements and address all DDC A+E comments from the 100% CD submission. Once Drawings are reviewed and approved by Bid Packaging all Construction Documents must be signed and sealed for BID.

07 COST ESTIMATE

07/A GENERAL REQUIREMENTS

Cost Estimates must be provided in the DDC Standard Construction Cost Estimate Template and delivered at each indicated design phase milestone submission (see Section 3000/2a/III) in both PDF and editable Excel file formats. The estimates must be developed accordance with the latest Release of the DDC Project Controls Guidelines – Chapter 3.2 'Preparing Construction Cost Estimates During Design'. Where deliverables conflict between the Project Control Guidelines and the Design Consultant Guide, the Design Consultant Guide shall take precedence.

07/B THE COST ESTIMATE TEMPLATE

The DDC Cost Estimate Template is delivered as an XLSX spreadsheet template in two versions and available on the DDC website. The Uniformat template is to be utilized for cost estimates in the early design phases (from CPSD or Pre-schematic through Schematic Design Final) and the MasterFormat template is for use from Design Development through Bid Packaging. Both templates include several 'sheets' which assist in documenting the project's various estimated costs alongside the available Public Building capital budgets. For Project Tracking Form templates please go to the DDC website and download the latest documents prior to the first milestone submission. Specific instructions will be provided on the templates and general guidance is outlined below.

I. Cost Summary

The Cost Summary sheet will automatically tabulate the estimates from the itemized subtotal sheets (items II and IV below) and apply factors to generate a total cost estimate for the project. The Cost Summary sheet will automatically compare the cost estimate with the project budget. The Consultant must populate the cells with factors as follows:

/a Overhead and Profit
Overhead and Profit is assigned during Front-End Planning (FEP) based on market conditions. This percentage will remain unchanged for the duration of the design phase. Overhead and Profit does not include costs assignable directly to the project carried out and included under general requirements or subconsultant overhead and profit.

/b Cost Escalation
Escalation rates are assigned during FEP based on market conditions. During design, the Consultant and DDC must agree on an annual construction-cost escalation compounding rate, in the cost estimating workshop, based on a market survey prepared by the Consultant, for use in all design estimates and cost analyses. For specific requirements on sourcing market conditions, see the latest release of the Project Controls Guidelines.

/c Bid Contingency
The Bid Contingency percentage is assigned during FEP based on market conditions. This percentage will remain unchanged for the duration of the design phase.

/d Construction Contingency
The Construction Contingency percentage is assigned during FEP based on market conditions. This percentage will remain unchanged for the duration of the design phase.

II. Hard Cost (including General Requirements)

Hard Cost unit costs include the direct costs of materials and supplies, labor and construction and equipment for each individual task of construction work and, if a subcontractor is used, include subcontractor OH&P. Unit costs must be updated at each submission to reflect latest market values. The Consultant must ensure that hard costs work in conjunction with escalation to adhere to the project budget.

General Requirements (including the DDC General Conditions) includes indirect costs for the project including the General Contractor's general conditions, bonds, insurance, site preparation, and support services.

The General Requirements is applied as a percentage and is estimated in the Front-End Planning report. The Consultant must confirm and/or adjusted this percentage according to project-specific requirements.

For projects with unusual coordination, site preparation or specialized support services, the General Requirements percentage assigned at FEP will reflect the anticipated phasing or complexity factors and the consultant will validate their general requirements percentage adjustments during the Design Phase with appropriate backup.

III. General Requirements

(reference document only)

The General Requirements reference sheet includes corresponding Uniformat, MasterFormat and DDC Addendum to the General Conditions sections to assist with aligning detailed scope items. Unit costs for certain items (see template) in the DDC General Conditions must be itemized and estimated in the Unit Price Work section of the hard cost tab during the Construction Document phase.

IV. Construction Contract Allowance and City's Construction Expenditure

These sheets itemize costs associated with known but un-defined contract work requirements included in the overall project budget but outside the scope of the cost estimate during the Design and Bid process. These costs will be provided by DDC and input by the consultant to assist with tabulating the overall total project budget.

V. Basis of Estimate

The Basis of Estimate sheet is a reference tool to assist in evaluating the cost estimate. The Consultant must complete the BOE at each submission to outline the methodology and approach used as the basis to generate the cost estimate.

VI. Project Complexity

During the Construction Document phase of design, the Consultant must complete the Project Complexity Report, with assistance by the DDC PM, as part of the cost estimate submission. This report assists in establishing future DDC project budgets and ensuring accurate budgets are assigned to new and upcoming projects.

VII. Definitions

(reference document only)

The Definitions sheet contains standard and DDC-specific definitions for the cost estimating terms included in the Cost Estimating Template.

VIII. CSI

(reference document only)

The CSI sheet itemizes industry standard and DDC-specific Construction Specifications Institute (CSI) MasterFormat 6-digit numbers with Titles to serve as the basis for the drop-down menus on the Hard Cost Level 2 sheet. The Consultant may add to the list, in the format shown, as needed to fully populate the project scope as line items in the Hard Cost breakdown.

07/C SUBMISSION REQUIREMENTS

I. Capital Project Scope Development

Class 5 per AACE Cost Estimate Classification in Uniformat DDC Cost Estimating Template; provide 15% design contingency, minimum.

1. Options Workshops: A cost estimate is required for each design option. These estimates will be understandably high level but must include a consideration for cost drivers that might be associated with the options under consideration.
2. Preferred Scheme Submission: This estimate should reflect any adjustments made to the preferred option resulting from feedback during the presentation(s).

II. Schematic Design Interim II

Class 4 per AACE Cost Estimate Classification Uniformat DDC Cost Estimating Template; provide 15% design contingency, minimum.

1. Options Workshops: A cost estimate is required for each design option. These estimates will be understandably high level but must include a consideration for cost drivers that might be associated with the options under consideration and ensure that a project direction is on budget.
2. Preferred Scheme Submission: This estimate should reflect any adjustments made to the preferred option resulting from feedback during the presentation/s.

   The submission must include all completed tabs from the cost estimating template including a completed Basis of Estimate.

III. Schematic Design Final

Class 3 per AACE Cost Estimate Classification; Uniformat DDC Cost Estimating Template; provide 15% design contingency, minimum.

This estimate must be based on the elements and assemblies identified in the Elements Approach form and must include the percentage-based mark-ups and owner expenses and allowances as agreed upon in the Cost Estimating Workshop or included in the FEP Report estimate.

The submission must include all completed tabs from the cost estimating template including a completed Basis of Estimate.

IV. Design Development

Class 2 per AACE Cost Estimate Classification; MasterFormat DDC Cost Estimating Template; provide 10% design contingency, minimum.

This estimate must be based on the elements and assemblies identified in the Elements Approach form presented in CSI format in the estimate. The estimate must include the other percentage-based mark-ups

as agreed upon in the Cost Estimating Workshop or included in the FEP Report estimate as well as any other owner expenses and allowances as identified by the DDC PM.

The submission must include all completed tabs from the cost estimating template including a completed Basis of Estimate.

V. 75% Construction Documents

Class 1 per AACE Cost Estimate Classification; MasterFormat DDC Cost Estimating Template; provide 5% design contingency, maximum.

For multi-scope projects subject to Wick's Law, separate the estimates by scope.

This estimate must be based on the project's specifications and presented in CSI format and include the following:

a. Aspplicable Unit Price Work from the DDC General Conditions with associated costs.
b. Commissioning specification sections - as provided by DDC.
c. Asbestos specification sections – as provided by DDC

The estimate must include the other percentage-based mark-ups as agreed upon in the Cost Estimating Workshop or included in the FEP Report estimate as well as any other owner expenses and allowances as identified by the DDC PM.

The submission must include all completed tabs from the cost estimating template including a completed Basis of Estimate.

VI. 100% Construction Documents

Class 1 per AACE Cost Estimate Classification; MasterFormat DDC Cost Estimating Template; provide 0% design contingency.

This estimate must be based on the project's specifications and presented in CSI format as described above for the 75% CD estimate. The estimate must include the other percentage-based mark-ups as agreed upon in the Cost Estimating Workshop or included in the FEP Report estimate as well as any other owner expenses and allowances as identified by the DDC PM.

The submission must include all completed tabs from the cost estimating template including a completed Basis of Estimate and Project Complexity Report as part of this final submission.

VII. Bid Packaging

Class 1 per AACE Cost Estimate Classification; MasterFormat DDC Cost Estimating Template (utilize the same version assigned to the project at Design Development unless otherwise directed)

The Consultant's Cost Estimate will be required for all Bid Packages. This estimate must conform to the 100% CD Submission requirements and address all DDC comments from the 100% CD submission. This document must be delivered to the DDC PM as an editable (unlocked) Excel document and include line items for all project scope.

(For Multiple Prime Contract Bids, provide a separate allowance for Incidental Asbestos in each cost estimate.)

08 DESIGN SCHEDULE

The Design Consultant will receive a copy of the Integrated Project Schedule (IPS) developed during Front End Planning by DDC to represent the total project duration from Initiation to Closeout, including the Design Phase, DDC Legal Review, which occurs after Bid Packaging Approval, the Bid and Award period, and the Construction Phase.

08/A DESIGN PROJECT SCHEDULE

The Design Schedule establishes target milestone dates and durations. The Design Schedule shall capture all design deliverables as defined in Section 3000 and the Front-End Planning Report. Consultants shall develop the schedule using the Critical Path Method (CPM) and industry standard Microsoft Project or P6 Software. It is encouraged that the Consultant be familiar with the latest Release of the DDC Project Controls Guidelines.

The Design Schedule shall be developed in accordance with the Association for the Advancement of Cost Engineering (AACE) Scheduling Best Practices and will conform to the following:

I. Design Schedule

The Design Schedule shall separate the Design phase into the different subphases according to the assigned Project Delivery Track, including: Schematic Design (SD), Design Development (DD), 75% Construction Documents (75% CD), 100% CD and Bid Packaging Approval. The Design Schedule shall also include:

1. All activities with realistic durations occurring within each subphase, for the preparation and development of each of the design deliverables required of the project scope.
2. Field visits, surveys, investigations, probes and monitoring, material testing, hazardous material testing, and/or site analyses that must be performed for the development of the design deliverables.
3. All associated review activities and approvals related to each of the design deliverables by project stakeholders, including the sponsor agency and DDC A&E, CM (if applicable), and DDC Bid Packaging Unit.
4. All permitting and regulatory approvals required from outside agencies and entities (e.g., PDC, LPC, NYC DOB, FDNY, NYC DEP, Parks, Con Edison, etc.)
5. All scheduled Design Progress Meetings and Milestone Submissions.
6. Critical decision-making that would impact construction schedule, such as phasing, swing space, etc.
7. Impacts to the design completion milestone date due to approved modifications to the original project scope as authorized by the DDC Program Unit. All such impacts must be differentiated from original project scope schedule activities.
8. Any additional activities as required by the DDC PM.

II. Design Schedule Narrative

The Design Consultant shall provide a monthly Schedule Narrative detailing the project scope, schedule milestones and explanation of variances between the baseline and forecasted milestone dates, changes to the project scope, and any risks or issues that may impact the project schedule. The monthly report shall also include the updated Design Consultants project-specific Risk Register.

III. Risk Register

A risk register is a formal record of identified risks, typically including additional summary information such as description, risk manager, risk owner, risk assessment, response strategy for treatment and control of the risk, and risk status. The Risk Register must also account for risks associated with project costs.

IV. Submission and Acceptance

The Design Consultant shall submit an electronic preliminary Design Project Schedule (native file in the format required by DDC) for review by DDC within fourteen (14) CCDs of Design NTP. DDC will provide comments on the Design Schedule Baseline within fourteen (14) CCDs. The Design Consultant must incorporate these comments into the baseline and resubmit within seven (7) CCDs. DDC will review this submission and, if acceptable, will establish these documents as the Design Schedule Baseline.

V. Updates

Once accepted by DDC, The Design Consultant shall update the Design Project Schedule monthly, using the last Friday of the month as the data date, and submit to the DDC PM/Project Team for review.

1. Updates shall be provided to DDC in electronic native file format (as will be required by DDC) and modified based on project changes and per comments received by DDC's Project Team or DDC Project Controls.
2. The update will show the actual start date, actual completion date, and the percent complete of each activity. It will also include revised projections for future dates.

08/B CONSTRUCTION SCHEDULE DURING DESIGN (CSDD)

I. Base Design Consultant Services

The Design Consultant is responsible for the production of a Construction Phase schedule. The consultant must review the construction schedule provided by DDC in the FEP Report and validate its duration based on the consultant's professional analysis of the project's requirements. This schedule, known as the Construction Schedule During Design (CSDD) will accurately represent the logical sequence and duration of the presumed Contractor's schedule indicating major milestones and key project phases. The CSDD must be a reasonable estimate of the proposed work and consider contractual restraints and dependencies, as well as any nuances from construction logistics and phasing, based on the proposed design and the consultant's past experience. It should be updated as new information is available and the level of detail provided in the CSDD should be adequate to form the basis of the cost estimate at each design phase milestone submission.

II. Expanded Consultant/CM Services

For complex construction projects identified during the FEP phase, the Design Consultant (or CM for CM Managed projects) will be responsible for the production of a more detailed CSDD. The CSDD shall have a Schedule Narrative that provides details to the development of the schedule, to the extent that they are known during design, including:

1. Overall period of performance of construction until Substantial Completion
2. Assumptions made in the development of the schedule (e.g. construction phasing, sequences and constraints)

The CSDD and Schedule Narrative must align with the Design Consultant's cost estimate for each design phase. The schedule shall be developed following the Association for the Advancement of Cost Engineering (AACE) Scheduling Best Practices, according to the restrictions and constraints that the Contractor will be held to. Additionally, it shall conform to the following requirements:

1. The CSDD must include the project Milestones required by DDC including:
    a. Construction Notice to Proceed.
    b. Interim construction milestones.
    c. Construction Completion.
    d. Project Closeout.

2. The intent is for the CSDD to progressively become more comprehensive with completion of each of the subphases of Design. Using AACE's 37R-06 "Schedule Levels of Detail – As Applied in Engineering, Procurement, and Construction," as a reference, the Design Consultant will be responsible for a CSDD deliverable that meets the following requirements during each subphase:
    a. Schematic Design: The Design Consultant shall be responsible for the development of a Level 1 Schedule.
    b. Design Development: The Design Consultant shall be responsible for the development of a Level 1 or 2 Schedule, as directed by DDC.
    c. 75% Construction Documents: The Design Consultant shall be responsible for the development of a Level 2 or 3 Schedule, as directed by DDC.
    d. 100% Construction Documents:
        i. The Design Consultant shall be responsible for the development of a Level 2 or 3 Schedule, as directed by DDC.
        ii. The Design Consultant shall develop the CSDD such that it will determine the overall duration to be used in the Construction Contract under Schedule A,and will be used by DDC during the review of the Contractor's submitted Preliminary and Baseline Construction Schedules.

09 ADA COMPLIANCE DELIVERABLES

09/A PROJECT DESCRIPTION FORM DELIVERABLES

Identify all applicable sections of the 2010 ADA Standards for Accessible Design (or the most current ADA Standards for Accessible Design), Chapter 11 of the NYC Building Code regarding accessibility, including the ADA Path of Travel obligations associated with alteration work, triggers based on change in main use or dominate occupancy, cost thresholds, and all other applicable laws, rules, and regulations (collectively, the "Accessibility Standards" as defined in Section 1000.02). This analysis must address the entirety of the project and must be updated at each phase as the project develops.

09/B DRAWING DELIVERABLES

I. Schematic Design

/a Compliance Diagrams

Based on the project scope and associated triggers, accessibility compliance must be clearly conveyed through a series of notes, details, plans, elevations, sections, and/or photos. The Design Consultant shall determine the best path forward of conveying areas of non-compliance and those that will be made compliant through the proposed scope of work. Although an initial accessibility assessment may be available within the FEP report, it's still the responsibility of the Design Consultant to review and determine the level of compliance.

If the Design Consultant team retains an Accessibility Consultant for the proposed scope of work, all consultant reports and/or drawing comments must be included as part of the submission package. The ADA Compliance Unit will then utilize the more stringent interpretation of the issues raised.

During Schematic Design, programmatic and support spaces must be developed enough to demonstrate compliant accessible routes and maneuvering clearances to avoid a redesign of the space. Accessible routes include, but are not limited to, site arrival points, horizontal and vertical access, public and employee spaces, and if applicable, an accessible means of egress from each accessible level. Maneuvering clearances include, but are not limited to, clearances of walking surfaces, door maneuvering clearances, fixture clearances, required clear floor spaces, and turning radii.

/b Accessible Routes and Accessible Means of Egress

/i. Accessible Means of Egress

If triggered by the project scope, an accessible means of egress shall be provided from each accessible level and shall consist of interior and/or exterior accessible routes, areas of rescue assistance, interior exit stairways, exit access stairways, exterior exit stairways, elevators, platform lifts, horizontal exits, ramps, exit discharges, and unenclosed vertical exits, as outlined in Chapter 10 of the NYC Building Code.

All stairs used as a legal Means of Egress, regardless of whether or not its used as an Accessible Means of Egress, shall comply with ADAAG Sections 504 and 505. DDC recommends applying ADAAG Section 504 for convenience and access stairs, as to not discriminate against persons with a disability that have some mobility and those who are blind or of low vision that could otherwise use such stair. All stair handrails and handrail extensions shall be mounted in accordance with ADAAG Section 505 and shall include 1" of construction tolerances.

Ramps are the preferred methodology when providing access to and from a space, as they require little to no maintenance and may serve as both an accessible route and an accessible means of egress. Please see the provisions below under Accessible Routes when designing ramps.

/ii. Accessible Routes

Indicate a compliant accessible route from all site arrival points (Public Right-of-way, Parking Lots, Passenger Loading Zones, and/or Mass Transit) connecting to the accessible building entrance(s), which can include a series of inclined walks, ramps, and lifts.

All ramps should be designed with a running slope of less than 1:13, with a preferred slope of 7.5%, as outlined by the U.S. Access Board as the industry standard of construction tolerance. All ramp landings and ramp cross slopes shall be designed at a 1.5% slope. All ramp handrails and handrail extensions shall be mounted in accordance with ADAAG Section 505 and shall include 1" of construction tolerances

Once within the building, an accessible route shall be provided from the entrance throughout the site, horizontally and vertically, which should include a series of pathways that exceed 36" in clear width, and that utilize ramps, lifts and/or elevator(s) for access to other levels.

/iii. Door Maneuvering Clearances

Plans are to include either a dashed rectangle or dimensions indicating the required door maneuvering clearances, as outlined in ADAAG Section 404.2.4, with a minimum of 1" of construction tolerance added, at all accessible spaces. For example, a door complying with ADAAG Section 404.2.4.1(a) will provide a dimension of 61" minimum perpendicular to the door and 19" minimum beyond the latch-side. Door maneuvering clearances must be unobstructed from 0" to 80" above the finished floor, as clarified by the U.S. Access-Board.

/c Plumbing Elements and Facilities

/i. Toilet and Bathing Facilities

Provide 1" of construction tolerance for water closet locations when designing in compliance with ADAAG Section 604.2, unless designing in compliance with the Fair Housing Act or in Ambulatory Stalls which require an absolute dimension of 18" on center. Additionally, provide 1" of construction tolerance for required water closet clearances, in both the required width and depth. Furthermore, only grab bars, toiletry dispensers, sanitary disposal units, coat hooks, and shelves are permitted within the required water closet clearances. No soap or paper towel dispensers, hand dryers or diaper changing stations will be permitted within such clearance. For example, an accessible water closet will be located at 17" on center, with a required water closet clearance of 61" in width and 57" in depth.

If showers are required per the project scope, recommend designing for roll-in type showers and adding 1" of construction tolerance to the minimum required width and depth, unless transfer type showers are required by the Sponsor, another accessibility standard or if existing conditions prohibit the roll-in type.

/ii. Drinking Fountains

High/ Low drinking fountains are required and are permitted to have a bottle filling station. Drinking fountains should be recessed into an alcove to avoid additional complexities of meeting an exact mounting height of 27" AFF. If the primary occupant is intended for children's use, recommend installing a third fountain at the required children's mounting heights.

II. Design Development

Updated from Schematic Design as required with additional information below:

/a Building Blocks

/i. Operable Parts

Provide notes and/ or details indicating that all operable controls, light switches, receptacles, HVAC/ BMS controls, security alarm panels, and thermostats are installed within a permitted reach range compliant with ADAAG Section 308, which requires a mounting height of 15" min. to 48" max. AFF measured to the highest operable part (or lowest where applicable).

/ii. Protruding Objects

Ensure that all wall and post-mounted elements located along an accessible route and within accessible spaces comply with ADAAG Section 307 for protrusion limits. Furthermore, ensure that a minimum 81" of vertical clearance is provided throughout all accessible routes and spaces. Where the headroom is reduced to 80" or less, ensure cane detection is provided beneath such obstruction.

/b Plumbing Elements and Facilities

/i. Toilet and Bathing Facilities

Provide a ½" of construction tolerance for minimum and maximum required heights at all accessible lavatories when designing in compliance with ADAAG Section 606. For example, a lavatory sink height will be indicated at 33-1/2" maximum above the finished floor, when designed to the maximum, and 27-1/2" minimum, when designing for knee clearances.

/ii. Accessories

Provide 1" of construction tolerance for minimum and maximum required mounting heights on all accessories, including but not limited to, diaper changing stations, dispensers, grab bars, hand dryers, mirrors, and waste receptacles.

/c Special Rooms, Spaces and Elements

/i. Kitchens, Kitchenettes, and Sinks

Provide a ½" construction tolerance for minimum and maximum required mounting heights and required clear widths at all millwork in compliance with ADAAG Sections 804 and 902. For example, a countertop with a sink will be indicated at 33-1/2" maximum above the finished floor, when designed to the maximum, and 27-1/2" in height by 30-½" in width of knee clearance, when designed to the minimum.

/d Special Rooms, Spaces and Elements

/i. Dressing, Fitting, and Locker Rooms

Provide a compliant accessible route throughout the space, with special attention to approaching, entering and exiting the space, as well as circulation to lockers, benches, and plumbing elements.

/e Built-in Elements

/i. Sales and Service Counters

Provide a ½" construction tolerance for minimum and maximum required heights at all millwork in compliance with ADAAG Section 904.

III. Construction Documents

Updated from Design Development as required with additional information below:

/a Building Blocks

/i. Accessible Windows

Please indicate compliance with, exemption from, or technically infeasible from ADAAG Section 229, which requires at least one accessible operable window, per area/ space.

/b Accessible Routes

/i. Elevators, LULA, and Lifts

Provide detailed notes and/or details indicating cab/ car sizes, door widths, interior and exterior control heights and locations, as well as hall lanterns, car positioning devices, and signage.

/ii. Public Right-of-Way/ Builders Pavement Plans

If triggered by the project scope, at least one 36" wide path, from property line to property line, and from curb cuts shall comply.

All running and cross slopes shall be indicated, including in front of entry doors, with cross and door maneuvering clearance running and cross slopes not exceeding 1.5%.

/c General Sites and Building Elements

/i. Accessible Parking Spaces, Passenger Loading Zones and Bus Stops

If accessible parking spaces, passenger loading zones and/or bus stops are provided, compliance with ADAAG Sections 208, 209, 502, and 503 shall be provided for the type of space (standard, accessible, accessible van, electrical vehicle charging stations, and/or valet), vertical clearances, access aisles, marking and signage, ground clearances, and accessible passenger loading zones.

/ii. Accessible Electrical Vehicle Charging Stations

If electrical vehicle charging stations are provided, full compliance with NYC Building Code Section 1106 and the U.S. Access Board Design Recommendations for Accessible Electric Vehicle Charging Stations shall be demonstrated for the number of charging stations, location, accessible routes, size, clearances from obstructions, and controls.

/d Communication Elements and Features

/i. Fire Alarm System and Two-Way Communication Systems

Fire alarm systems shall comply with the NFPA 72 Standards, and ADAAG Sections 215 and 702. Please ensure that manual fire alarm pull-station operable parts are within 48” above the finished floor and that fire alarm strobes are mounted at least 80” above the finished floor, measured to the bottom of the bulb/ strobe lens. Two-Way Communication Systems shall comply with ADAAG Sections 230 and 708.

/ii. Signage and Wayfinding

The Accessibility Standards regulate signage for directional and informational signs, room identification, means of egress, parking, entrances, vertical transportation elements, and Assistive Listening Systems. The Accessibility Standards include specific guidelines for character size, contrast, finish, font, braille, pictograms, and symbols of access.

/iii. Assistive Listening Systems (ALS)

If amplified audio is provided within a space with 4 or more occupants, an ALS will be required per ADAAG Section 219. Per Local Law 51 of 2017 and NYC Building Code Appendix N, at least one ALS must be an induction loop system. An RF of Intra Red system may be used for any additional spaces that require an ALS, once the first induction loop ALS is provided. Ensure specifications are provided for the Induction Loop Assisted Listening System in accordance with NYC Building Code Section N102, which requires compliance with IEC 60118-4:2014, and performance in accordance with IEC 62489-1:2010.

/e Special Rooms, Spaces and Elements

/i. Dressing, Fitting, and Locker Rooms

Indicate a minimum of 5% of accessible lockers, accessible benches, and required maneuvering clearances.

/f Built-in Elements

/i. Dining and Work Surfaces

Provide a ½" construction tolerance for minimum and maximum required mounting heights and required clear widths at all millwork in compliance with ADAAG Section 902.

/ii. Sales and Service Counters

Provide detailed plans, elevations and sections of the assembly to better ensure the specified construction tolerances, as mentioned above.

/iii. Benches

Benches shall be provided within all dressing, fitting, and locker rooms, and shall comply with ADAAG Sections 803 and 903 for clear floor space, size, back support, and strength.

/iv. Employee Workstations and Moveable Furniture

To provide equal facilitation of all Public Buildings' projects, a minimum of 5% of employee workstations and moveable furniture shall be accessible to and usable by persons with a disability, per type. For example, in a Public Library, 5% of the adult, teen's, children's, staff work area, and computer stations would each include 5% of accessible seating, calculated separately, with no less than one being provided.

09/C SPECIFICATION DELIVERABLES

Submit the following specification submittals for review during the design phase:

1. Product cutsheets for accessible lavatories, kitchen/pantry sinks, accessible water closets, faucets, and drinking fountains. Plumbing Specifications must be verified by the Design Consultant, and not just relying on the manufacturer's assumption on code compliance.
2. Product cutsheets for restroom accessories, such as, but not limited to, diaper changing stations, dispensers (paper towel, soap, toilet seat cover, etc.), grab bars, hand dryers, mirrors, and trash receptacles.
3. Product cutsheets for area drains, floor drains, and linear drains, including the selected grating.
4. Product cutsheets for Communication Elements and Features, such as, but not limited to, fire alarm and life safety devices.
5. Product cutsheets for Assistive Listening Devices.
6. Product cutsheets for moveable furniture.

09/D CONSTRUCTION SUBMITTALS

To ensure that similar products are still available at time of construction, submit the following submittals to the DDC Project Manager for ADA Compliance Unit review during the construction phase, prior to issuing an approval:

1. Shop drawings of millwork related to lavatories, kitchen(s) and pantries, workstations/desks, lactation room(s), and toilet compartment partition shops.
2. Product cutsheets for accessible lavatories, kitchen/pantry sinks, accessible water closets, faucets, and drinking fountains. Plumbing Specifications must be verified by the Design Consultant, and not just relying on the manufacturer's assumption on code compliance.
3. Product cutsheets for restroom accessories, such as, but not limited to, diaper changing stations, dispensers (paper towel, soap, toilet seat cover, etc.), grab bars, hand dryers, mirrors, and trash receptacles.
4. Product cutsheets for area drains, floor drains, and linear drains, including the selected grating.
5. Shop drawings for ramp and stair assemblies, this includes shops for metal, concrete, pavers, etc.
6. Shop drawings for all ramp and stair handrails.
7. Shop drawings or product cutsheets of lockers. Locker cutsheets must be verified and include the accessible required features (i.e. compliant shelf and/or hook heights, identification, operable hardware).
8. Product cutsheets for Communication Elements and Features, such as, but not limited to, fire alarm and life safety devices.
9. Shop drawings and cutsheets for Assistive Listening Devices.
10. Product cutsheets for moveable furniture.

10 SUSTAINABILITY AND RESILIENCY DELIVERABLES

Deliverables shall be provided by the Consultant per the submission checklist and updated in subsequent submissions based on updated information and DDC and Sponsor Agency comments. For each deliverable, provide the applicable calculations, narratives and supporting documents necessary to demonstrate that requirements are met. Provide explanations and calculations where appropriate for items that are determined to be "not feasible." Refer to the Front-End Planning Report for additional deliverables that may be required.

10/A NYC ENERGY CONSERVATION CODE (NYCECC)

I. NYCECC Compliance Path Approach

Propose an outline of the path for energy code compliance.

II. Prescriptive Path: Tabular Analysis, COMcheck

When the prescriptive path is to be utilized to indicate compliance, provide all applicable completed tabs and calculations in the format required for code compliance.

III. Performance Path: Energy Modeling + Envelope Backstop

When this compliance path is to be utilized, provide the completed energy model form in excel format and the modeling input and output files that correspond to the form, along with the envelope backstop, where applicable. All final energy model files are to be provided at the end of the project.

IV. Thermal Bridges Analysis

Submit documentation on thermal bridge locations in the building envelope in same format required for code compliance.

10/B ENERGY USE / INTENSITY

I. Energy Audit Report

For existing buildings, if a recent LL87-2009 energy audit and retro- commissioning study or a DDC-prepared energy audit was completed for the building, a copy will be provided by DDC. If such an audit has not been conducted, DDC may direct the Consultant to provide a whole-building ASHRAE Level II or III Energy Audit, including thermographic analysis of the building envelope. The audit report must follow the format required by LL87 but must address all ECMs listed in the 2017 Request for Information issued by DCAS for "Deep Energy Retrofits in Support of EO26," which will also be provided by DDC.

The Consultant must review the results of the audit, consider any changes implemented in the building since the audit, and incorporate into the project those Energy Conservation Measures (ECMs) that have the highest potential to reduce energy consumption and meet project requirements.

II. Energy Analysis/Modeling Report

The Consultant must provide an energy model that confirms the project will meet its energy efficiency target including energy use reduction targets. Modeling must be performed in accordance with local law and LEED requirements using software in compliance with ASHRAE 140 – 2017 Standard Method of Test for the Evaluation of Building Energy Analysis Computer Programs and approved by the DDC Office of Sustainable Design.

The report must include a comprehensive analysis and be summarized in a report comparing baseline and proposed performance of energy use, energy cost and greenhouse gas emissions for the selected design (on a whole building and per unit area basis), demonstrating compliance with LEED, local law and code. The analysis must specify recommended energy efficiency measures (EEMs) and payback periods and describe why certain EEMs were used or not used. Additional models or variations of one model might be necessary to meet all local laws, the energy code and LEED requirements.

The model and report must be further developed during subsequent phases. Updates to the report should be identified with bold text (or some other means of identification). A final report must be submitted with the Construction Document submittal with such formatting removed. The final report must include calculations and modeling files.

The construction of the project must comply with the approved design energy model and all project requirements. Any proposed changes submitted to DDC and the Sponsor Agency during construction that may impact the project's energy performance must be accompanied by an updated energy model report for review, prior to the proposed change receiving approval.

III. Approach Path and Energy Use Intensity (EUI) Target

The Consultant must investigate the implications of a low-energy intensity building, as defined in the City Charter, and determine:

1. The appropriate compliance path
2. The specific EUI target the building will be designed and constructed to meet
3. Approximate energy end use distribution.

As part of the Record Document submittal, the Consultant must certify via written confirmation that the project has been designed, constructed and configured to meet its required Energy Use Intensity (EUI) Target.

IV. Energy Analysis for all Passive Design/HVAC Design Alternatives

The Consultant must provide "simple box" models of the proposed design to demonstrate that the required EUI target is attainable and what efforts (via passive and active strategies including but not limited to shading, peak demand reductions, envelope R- and U-values, air-infiltration, thermal bridging, fenestration U- and SHGC values, equipment efficiencies, etc.) must be made to achieve that target. Should design alternatives be presented for evaluation, the Consultant must include performance, initial cost, ease and costs of maintenance, energy cost and greenhouse gas production, space requirements, noise levels and payback periods in the evaluation criteria.

For HVAC Alternatives, the Consultant must provide an HVAC Evaluation for all design alternatives, based on performance, initial cost, ease and cost of maintenance, energy cost and greenhouse gas production, space requirements, noise levels and payback periods.

V. On-Site Renewables Feasibility Study

The Consultant must investigate the feasibility of generating on-site renewable energy and incorporate it into the design as practicable. As part of this analysis, at a minimum, determine the onsite energy generation needed to cover 10 percent or more of the building's total energy needs. Provide the following information:

1. Site plan and applicable supporting documents indicating the locations and sizes of areas that could be used to generate energy, the capacity value of the system size, the amount of energy that could be generated for each individual onsite system annually, and the combined totals for all onsite renewable energy sources.
2. Comparison of greenhouse gas emissions, as a result of the offset of fuel and grid-sourced electricity consumption;
3. Comparison of impacts on criteria air pollutant concentrations;
4. Comparison of annual electricity consumption and impacts on peak demand reduction;
5. Where applicable, comparison of a potential revenue stream generated from the peak demand reduction using a dollar metric;
6. Comparison of fuel and power costs;
7. Comparison of the net present value of all alternatives considered, where such net present value must be based on a 20-year life expectancy for each proposed option, unless a particular technology has a different life expectancy as documented by the manufacturer. The calculations must consider capital costs, operations and maintenance, fuel costs, the social cost of carbon as defined in section 3-125 of the administrative code, and funding assistance available from federal, state and other non-City government sources.
8. Calculations and narrative describing the building's total energy needs, the 10 percent target of this total, each of the onsite generation systems considered and how the targets can be met.
9. If the targets cannot be met, provide a narrative, calculations and any other supporting documents needed to explain this.

VI. Net Zero Feasibility Study

For low energy intensity buildings three stories and fewer, the Consultant must investigate the feasibility of constructing a net zero energy building that covers 100 percent of the building's total energy needs with on-site renewable energy.

Provide the deliverables listed above under On-Site Renewables Feasibility Study. If feasible but not being constructed as a net zero energy building, the Consultant must generate a report justifying this decision.

10/C OTHER ENERGY DELIVERABLES

I. Solar Assessment (LL24/16)

For roof replacements, new buildings, and additions, or as directed by DDC, provide an analysis of the project's solar PV potential, including both building and site. Include cost, energy cost savings, and greenhouse gas emissions reduction estimates. Incorporate the report's findings into the other energy performance deliverables.

II. Sustainable Roofing Zone (LL94/19)

Provide specification for roofing materials in compliance with Section BC 1511 of the New York City Building Code. Provide compliance information within the code analysis section and supporting design documentation in each applicable submittal.

III. Green Infrastructure Study

For capital projects subject to LEED certification (new building, addition, or substantial reconstruction), the Consultant shall develop and submit a design alternate study to construct such project to incorporate green infrastructure.

IV. Geothermal Pre-Feasibility Tool (LL6/16)

Complete the Geothermal Pre-Feasibility Tool. If results indicate that a full or hybrid GSHP system is viable for the project, or as directed by the DDC, the Consultant must estimate the mechanical loads of the building and use DDC OSRD guidance on using mechanical loads to determine feasibility before developing design options. If the Tool or DDC continues to indicate that a full or hybrid GSHP system is viable for the project with the proposed mechanical loads, the Consultant must present at least one option for a GSHP mechanical scheme prior to developing a resolved design proposal for Schematic Design. The Consultant must provide a comprehensive engineering and cost analysis following the requirements of the law to determine whether the GSHP option has the best net present value of all alternatives considered and, if so, describe the proposed system. If the GSHP system will not be implemented, the Consultant must provide a justification in accordance with the law.

V. Electric Vehicle Capacity (LL130/13)

The Consultant must demonstrate compliance with required electric vehicle charging capacity in the design documents.

VI. Greenhouse Gas Emissions Assessment (LL66, LL97, EO 26)

Submit a greenhouse gas emissions assessment on the form provided by DDC Office of Sustainable and Resilient Design using the methodology found in the NYC Mayor's Office of Sustainability's "Inventory of New York City Greenhouse Gas Emissions" to determine the coefficients for converting energy use into metric tons of carbon dioxide equivalent (MtCO2e). GHG emissions in the Citywide Inventory are calculated and reported per the guidance of the Global Protocol for Cities (GPC), which is the worldwide standard for GHG emission reporting

10/D WATER USE REDUCTION

The Consultant must provide calculations demonstrating strategies for potable water use reduction using the LEED methodology.

10/E ENVIRONMENTALLY PREFERABLE PURCHASING (EPP) PROJECTS (LL118/05)

I. EPP-Compliant Specifications

Provide specifications in compliance with the Mayor's Office of Contract Services (MOCS) Minimum Standards for Construction Products which cover issues such as, but not limited to, efficiency requirements for lighting and HVAC equipment, minimum recycled content requirements and VOC content limits.

II. EPP Report

Provide an EPP Report in compliance with the MOCS standards. Report must be updated as directed by DDC.

10/F PROJECT REPORTING

I. Mayor's Office of Environmental Coordination (MOEC) LL 51 Reporting Form

Complete and submit the draft MOEC Project Intake Form to DDC at end of SD, DD, and CD and an updated final form at substantial completion and upon annual requests by MOEC. For MOEC Reporting Form templates please go to the DDC website and download the latest documents prior to the first milestone submission. Specific instructions will be provided on the templates. More information can be found on the MOEC Reporting page.

II. Active Design Checklist (EO 359/13)

The Consultant must provide Active Design checklists per the Active Design Guidelines published by NYC Planning and available on their website https://www.nyc.gov/site/planning/plans/active-design-guidelines/active-design-guidelines.page.

III. Mayor's Office of Climate And Environmental Justice LCA Reproting Form (EO23/22)

The Consultant shall prepare and submit Baseline Life Cycle Analysis (LCA) and preliminary Design Case LCA analysis at major design phase milestones and report final Design Model data using the MOCEJ Embodied Carbon Design Reporting Template showing a minimum 10% reduction in embodied carbon.

10/G LEED PROJECT DELIVERABLES (LL 51/23)

The Consultant is responsible for implementation of all LEED aspects into the construction and configuration of the project and must have an internal compliance process for the review and tracking of LEED submittal information for materials and products, and the collection and compilation of all LEED construction credit information.

I. Integrative Process Report

1. Energy and Daylight Related Systems:

   Document how the energy and daylight analysis has informed the building design, location of building on site, MEP systems and energy use. Include the following, as applicable:

   a. Established performance targets, per project's energy requirements by code and laws, including Energy Cost Reduction targets and Geothermal Screening Tool results
   b. Building and site program
   c. Building form and site layout
   d. Building envelope and façade elements on different orientations
   e. Modification to, or significant downsizing of building systems (e.g., HVAC, lighting, controls)
   f. Modifications to exterior materials, interior finishes, and other systems

g. Assessment of on-site renewable energy potential
h. An updated "simple box" energy model that evaluates energy load reduction strategies

2. Water Systems

   Document how the water budget analysis informed building and site design decisions and the systems outlined below. Demonstrate how at least one on-site non-potable water supply source was analyzed to reduce the burden on the NYC municipal supply or wastewater treatment systems.

   Include the following, as applicable:

   a. Site location in a combined sewer or MS4 area, and the applicable requirements
   b. Monthly and annual rainfall volume landing on site and building roof
   c. Monthly and annual site and building water use
   d. Rainwater quantity and quality management systems
   e. Landscaping, irrigation, and site elements
   f. Roofing systems and/or building form and geometry
   g. Annual Water Demand Analysis. Calculate annual water demands for building; match with potential supply sources
   h. Potential cost impact associated with installing proposed water-conserving systems

3. Other systems, as applicable
4. Meeting Minutes of IP Workshop

II. Environmental Programming Matrix

Using the template provided by DDC, describe the preferred conditions of each space including size, occupancy, hours of use, temperature, ventilation, lighting and acoustics. The Environmental Programming Matrix must be updated at the end of Schematic Design and Design Development. A draft version of the document that is specific to the project may be have been provided in the Available Documents of the RFP, which the Consultant must validate and complete during the project design.

III. Project Specific LEED Checklist

Provide a standard LEED checklist of targeted credits to meet local law requirements, and a brief description of how each credit impacts the specific project. This checklist must be maintained through to final LEED certification.

IV. Project-Specific LEED Plan

As based on the LEED checklist, the Consultant must provide description of each credit's applicability to the project, the strategy proposed to achieve targeted credits, sub-phase to be completed, and assignment of responsibilities for the entire Project Team. Provide explanations and calculations where appropriate for credits that are determined to be "not feasible" for this project.

The LEED Plan must be updated per the Specific Project Requirements. Changes to text should be bold and date of revision provided.

V. Site Plan Indicating LEED Project Boundary

The LEED project boundary must include all contiguous land that is associated with the project and supports its typical operations. This includes land altered as a result of construction and features used primarily by the project's occupants, such as hardscape (parking and sidewalks), septic or stormwater

treatment equipment, and landscaping. See USGBC website for further guidance. The LEED project boundary must be approved by the DDC OSD.

VI. Energy Goals Statement

In addition to providing the minimum energy requirements for the project as established by code and/or local law, the Consultant must work with the Sponsor Agency's energy manager, capital Project Team, and facilities staff to establish energy consumption and greenhouse gas emissions goals for this project that reflect the urgency of LL66, EO26 and LL97. For existing buildings, the goals statement must incorporate the findings of a previous LL87 energy audit or a new audit.

Provide a final statement in the Record Document submittal to confirm that energy goals have been achieved, and if applicable, clarify any discrepancy from original statement.

10/H CLIMATE RESILIENCY DELIVERABLES

The Consultant shall utilize the must current edition of the NYC Climate Resiliency Design Guidelines (CRDG) to assess risks to the project during its useful life and per system lifecycles, including impacts from increased heat, increased precipitation, and flooding. Following the initial schematic design investigation sub-phase, the Consultant team shall submit a written Resiliency Planning summary of a Resilient Design meeting in which a discussion about risks informs Owner Project Requirements (OPR). Consider also how resiliency features can continue to be enhanced over time, for example by providing sufficient floodwall foundation capacity for future DFE enhancements.

At the culmination of Schematic Design, the Consultant shall present all the required design features necessary to address climate resilience issues in a Risk and Abatement Summary.

In cases where special systems such as deployable barriers need to be implemented, the Consultant shall prepare a Climate Resilience Action Plan to clearly communicate to the building operators the steps necessary to protect the asset(s) and how to train the staff in their proper use. An outline of this document shall be presented at 100% Design Development with the full document at 100% Construction Documents. Drafts shall be presented at the 75% interim submission for both.

11 COMMISSIONING DELIVERABLES

The Consultant shall produce a narrative of the design intent, in the form of an Owner's Project Requirements (OPR) and Basis of Design (BOD). These documents shall memorialize the intent of the project, including the intended function, any project-specific requirements, or expectations, and how the design proposes to meet these requirements.

11/A OWNER'S PROJECT REQUIREMENTS (OPR)

The OPR shall clearly outline the project goals and the intended operation of the building. This shall include project scope, building use, occupancy information and schedules, budget constraints, energy efficiency goals, verifiable performance criteria, and operations and maintenance requirements. It must address all systems to be commissioned, as well as the building envelope. Upon request, the Commissioning Agent will provide an OPR template to the Consultant team to guide the development of this document.

The Consultant shall provide a draft OPR document, developed with input from Sponsor Agency and Project Team, with the Schematic Design Final submittal, and a final OPR Document with the 100% Design Development Submittal. The OPR shall be updated and resubmitted during CD at the discretion of DDC and will be required typically only in the event of significant change in project scope or intent.

For projects following an expedited design track, the Consultant shall submit the draft OPR two weeks after the Schematic Design II submittal. The final OPR shall be included at the next submittal milestone.

DDC will hold an OPR Development Meeting to clarify the Sponsor Agency's expectations and incorporate this input into the document.

The Sponsor Agency must approve the final OPR.

11/B BASIS OF DESIGN (BOD)

The Basis of Design explains how the proposed design will meet the requirements and expectations outlined in the OPR. It shall describe the selected systems and explain anticipated facility operation. The BOD shall document the rationale for the design, including codes and standards, direction from the Sponsor Agency, concepts, calculations, design methods, and software used. The BOD shall include a history of revisions to the project, explaining the reasons for changes throughout the project phases.

If required for compliance with LEED certification target, Low Energy Building measurement and verification, or the benefit of the project at the discretion of DDC, the BOD shall include a Monitoring-Based Commissioning Protocol. Such Protocol shall include the elements outlined in Section 1000.03/C/III.

The Consultant must provide a draft BOD document with the Schematic Design Final submittal.

The Consultant must provide a final BOD document with the 100% Design Development submittal.

The BOD shall be updated and resubmitted during Construction Documents at the discretion of DDC and will typically be required only in the event of significant change in project scope or intent.

For projects following an expedited design track, the Consultant shall submit the draft BOD two weeks after the Schematic Design II submittal. The final OPR shall be included at the following submittal milestone.

11/C COMMISSIONING SPECIFICATIONS

The Commissioning Agent will provide Commissioning specifications and the Consultant shall coordinate the Commissioning specifications with the project specifications and incorporate them into the project specifications no later than the 75% CD submittal. See Section Z13/A/II

12 HAZARDOUS MATERIALS DELIVERABLES

12/A HAZMAT SURVEY DOCUMENTS

As early as reasonable and capable of determining extents of demolition scope of work (ideally no later than Schematic Design Final), the Consultant must provide set of design drawings for the DDC's Project Manager to coordinate the development of abatement documents with Office of Environmental and HazMat Services (OEHS) unit.

12/B HAZMAT CONSTRUCTION DOCUMENTS

For 75% Construction Document submission, the Consultant must incorporate the abatement documents (drawings and specifications) developed by the DDC OEHS HAZMAT within the Construction Documents and coordinate with the rest of the project scope.

The DDC will also provide a cost estimate for anticipated abatement costs for the project which must be included in the cost estimate hard costs (see Section Z.07 Cost Estimate)

13 SPECIFICATIONS

13/A GENERAL SPECIFICATION REQUIREMENTS

I. General Requirements

It is imperative that, prior to submitting the specifications, the Consultant inspect all documents for adherence to all DDC requirements, completeness, and accuracy.

The specifications must be organized in accordance with Construction Specification Institute (CSI) MasterFormat – Division/Section/Page Format. Each page must be numbered sequentially, and electronic versions must be provided in a single PDF file and in editable native format. For DDC BID/ Award Specifications the Consultant must use the OMS software as outlined in Section Z/13/B below.

II. Commissioning Specifications

The Consultant must review the Commissioning specification sections provided by the Cx and incorporate into the specification formatting established for the project in advance of the 75% Construction Document submission. Technical information within the specifications provided by the CxA must not be modified. The Consultant shall ensure that the Commissioning specification sections are represented in the Table of Contents and in the Consultant's Cost Estimate.

III. Asbestos and/or HAZMAT Specifications

The Consultant must review the Asbestos/HAZMAT specification sections provided by DDC OEHS and incorporate into the specification formatting established for project in advance of the 75% Construction Document submission. Certain Sections of the provided specifications may not be applicable and must be removed however, the technical information within the specifications must not be modified. The Consultant shall ensure that the Asbestos/HAZMAT specification sections are represented in the Table of Contents and in the Consultant's Cost Estimate. For Asbestos and Hazardous Materials deliverables see Section Z/12 above. For additional DDC Bid/Award requirements see Section Z13/B/III/C.

13/B DDC BID/AWARD SPECIFICATION REQUIREMENTS

I. DDC Office Master Specifications

As directed, the Consultant and all sub-consultants shall use DDC's Office Master Specifications (OMS) system, which utilizes a commercial software tool (Deltek e-SPECS/ Specpoint) with DDC cloud-hosted project storage designed to generate project-specific technical specifications in compliance with DDC's requirements.

The DDC OMS specifications are Masterspec-derived and formatted per the most current CSI, 6-digit numbers and headings. They are generated with DDC formatted headers and footers. Section text has been edited to revise contract language in accordance with DDC standards. Newly inserted text must meet the same requirements. (Coordinate with DDC PM and Bid Packaging Group and refer to DDC TSI for detailed Instructions.) All submissions shall include an issue date, which must be updated for each resubmission.

/a Table of Contents

The Consultant must generate a complete Table of Contents which represents the full scope of the project as represented in the Project Tracking Forms. The Table of Contents is generated in the OMS software and required for the 100% DD Submission.

II. DDC General Conditions

All Division 1 General Requirements sections correspond to the DDC General Conditions, which shall be included in Volume 2 as a reference for bidders with all contracts. As a result, Consultant must not include any Division 1 specification sections, unless they cannot be found within the DDC General Conditions and are applicable to the project.

III. NYC Procurement Requirements

/a Capital Eligibility

The specifications must be inclusive of all items in the construction contract; however, items which are not capitally eligible must be omitted. These items include (but are not limited to) maintenance agreements, movable furniture, extended warranties and spare parts, unless required by code. Coordinate with DDC PM for full list of eligible and non-eligible scope items.

/b Technical Specification Instruction (TSI) Requirements

Refer to the Technical Specification Instructions (TSI) for further details on the below

1. Basis of Design
   All specifications must include performance-based information for products, and all sections that call out manufactured products must include at least two additional manufacturers that offer comparable products, followed by the term "or approved equal."

   If the design is based on a particular manufactured product, the Consultant may include the language "Basis of Design." The use of Basis of Design does not relieve the Consultant from identifying two additional manufacturers that offer comparable products based on the performance criteria described in Part 2: Products and must not be used solely to indicate a preference.

2. Proprietary Product Requirements
   If the use of proprietary items is approved by DDC (see Section Z.14/C), proprietary specification sections must include only one sole-source manufacturer and product within Part 2: Products, and the text "No Substitutions Permitted." Proprietary cut sheets from manufacturers are not allowed in the Bid Package (even for approved proprietary items).

3. Nomenclature
   Incorrect nomenclature from the private sector or other government entities is not acceptable for documents submitted to DDC. Specification text in the OMS has been pre-edited to remove such references. Any new text must conform to the same requirements as described below. Refer to the Technical Specifications Instructions (TSI) for additional nomenclature and terminology editing guidance.

   a. City of New York
      References to "Owner" (or other agency or authority) as an entity should read "City of New York" for all matters related to property and payments. Note that for Multi-Contract Wicks projects located on non-City-owned property, the property owner will differ.

   b. Commissioner
      References to "Architect," or "Engineer" should read "Commissioner." References to "Owner" for verification, certification, selection, approval, etc. should read "Commissioner."

c. Engineering Services
References to "Delegated Design" should read "Engineering Services." Note that all shop drawings and other submittals must be reviewed and approved "by the Commissioner".

d. Authorities Having Jurisdiction (AHJ)
References to "Authority" or "Authorities Having Jurisdiction" must be revised to the applicable Code, Standard, Entity, Department, or Agency.

/C Asbestos and/or HAZMAT Specifications

The Consultant shall ensure that the asbestos specification sections are represented in the Table of Contents and technical specifications as follows:

1. If the Project is a Single Contract, includes demolition scope, and asbestos has not been found, include:
    a. 028013 Allowance for Incidental Asbestos Abatement for General Construction Work.
2. If the Project is a Single Contract, includes demolition scope, and asbestos has been found, include:
    a. 028013 Allowance for Incidental Asbestos Abatement for General Construction Work.
    b. 028213 Asbestos Abatement.
3. If the Project is a Multiple Prime Contract (Wicks), includes demolition scope, and asbestos has not been found, include:
    a. 028013 Allowance for Incidental Asbestos Abatement for General Construction Work.
    b. 220013 Allowance for Incidental Asbestos Abatement for Plumbing Work.
    c. 230013 Allowance for Incidental Asbestos Abatement for HVAC Work.
    d. 260013 Allowance for Incidental Asbestos Abatement for Electrical Work.
4. If the Project is a Multiple Prime Contract (Wicks), includes demolition scope, and asbestos has been found, include:
    a. 028013 Allowance for Incidental Asbestos Abatement for General Construction Work.
    b. 028213 Asbestos Abatement.
    c. 220013 Allowance for Incidental Asbestos Abatement for Plumbing Work.
    d. 230013 Allowance for Incidental Asbestos Abatement for HVAC Work.
    e. 260013 Allowance for Incidental Asbestos Abatement for Electrical Work.

14 BID DOCUMENTS

For the complete Bid Package Documents and Checklist please go to the DDC website link and download the latest documents prior to issuing to the Bid Packaging Unit. The specific details for filling out forms will be provided at this link as well as other reference documents. Please follow general guidance below for completing deliverables.

14/A MULTIPLE CONTRACTS – WICKS LAW

If the DDC PM and Project Team identify the project to be procured under multiple contracts, the below is guidance on how to prepare the Contract Documents for certain elements of construction work. Please see Section 3000.02/B for more information on methods of procurement.

1. Electrical Work Associated with HVAC And Fire Protection
    a. The Electrical Contractor shall furnish and install the power wiring to starters, motors and in-sight disconnects.
    b. The HVAC/Fire Protection Contractor shall furnish, and the Electrical Contractor shall install, unless integral with the equipment, all starters and disconnects.
    c. Furnishing and Installation of all control devices and all control and interlock wiring for equipment furnished under the HVAC/Fire Protection Contract shall be by that Contractor, including any power required for any control device. This power is to originate from a four circuit panelette in each mechanical equipment room. If there is no electric panel in the room, the Electrical Contractor is to furnish and install this panelette.
    d. The Electrical Contractor is to provide a feed terminating in a junction box or disconnect. The HVAC/Fire Protection Contractor is to do all wiring from the junction box or disconnect to the boiler.
    e. Where the Electrical Contractor is to do power wiring to specific equipment, details of that electrical work are to be shown on the electrical drawings.
    f. Motor Control Centers may be furnished by either the HVAC/Fire Protection Contractor or preferably the Electrical Contractor, but they must be installed and wired by the Electrical Contractor, except for external control wiring, which shall be installed and wired by the HVAC/Fire protection Contractor.
    g. Sprinkler systems, including flow and temper switches are to be furnished and installed by the HVAC/Fire Protection Contractor. The Sprinkler Alarm Panel, and all wiring is to be furnished and installed by the Electrical Contractor and must be shown on the Electrical Drawings.

2. Electrical Work Associated with General Construction or Plumbing
    a. Power and control wiring for electrical equipment furnished under General Construction or plumbing contracts is to be furnished and installed by the Electrical Contractor and must be shown on the Electrical Drawings.
    b. Luminous ceilings are to be furnished and installed by the Electrical Contractor.
    c. Lighting fixture supports shall be furnished by the Electrical Contractor and installed by the General Contractor.

3. Elevator Work
    a. The Elevator Disconnect near the machine room entrance, including the feeder and the controller, shall be provided by the Electrical Contractor. All other related elevator electrical and control work is to be provided by the elevator sub-contractor.

b. The Electrical Contractor is to provide an electrical outlet box and telephone junction box at the midpoint of the elevator shaft. The telephone junction box is to be connected with empty conduit to the nearest telephone strip box.

4. Standpipe and Sprinkler Responsibilities
    a. The Plumbing Contractor is to provide water service for the sprinkler, standpipe and combined standpipe /sprinkler systems, from the main up to and including the first Outside Stem and Yoke (OS&Y) valve and the detector check valve.
    b. The Plumbing Contractor shall provide the standpipe system, including the fire pumps, but not the sprinklers.
    c. The HVAC and Fire Protection Contractor is to provide the combined sprinkler/ standpipe system and the separate sprinkler system from the detector check valve, including the fire and booster pumps. This work does not include the water service up to and including the detector check valve that is to be provided by the Plumbing Contractor.
    d. The Electrical Contractor is to provide all related wiring.
    e. Coordinate all requirements with DDC as these requirements relate to union jurisdiction in New York City.

5. Fuel Tanks
    a. The HVAC and Fire Protection Contractor shall furnish and install the fuel tanks, associated piping and miscellaneous controls for heating oil or emergency generators.
    b. The Plumbing Contractor shall furnish and install all equipment for gasoline or diesel fuel dispensers.
    c. The Electrical Contractor is to provide power for any required pumps.
    d. The General Contractor, HVAC/Fire Protection or Plumbing Contractor is to provide for excavation, gravel, backfill, support pads and manhole access. A determination as to which Contractor shall do the work is to be made by DDC in conjunction with the Consultant.

6. Contractor Responsibility

    Each Contractor is to perform all necessary rigging, cutting and patching, excavation and backfill for the work of their Contract, unless otherwise specifically noted on the plans and specification by the Consultant.

7. Access Doors

    Access doors are to be furnished by the respective trades for installation by the Contractor for General Construction.

14/B ADDENDUM TO THE GENERAL CONDITIONS

The Addendum to the General Conditions includes all Division 1 General Requirements sections and is included with every competitively bid project. Generally, the DDC General Conditions document is not to be edited by the Consultant. If customization of the General Conditions is needed for a specific project, the Consultant must review the DDC General Conditions and use the Addendum to the General Conditions to revise or supplement the General Conditions articles for project-specific conditions. Once completed, this document must be delivered to the DDC PM as an editable (unlocked) Word document.

1. There are two versions of the Addendum to the General Conditions:
    a. Addendum for Single Contracts
    b. Addendum for Multiple Prime Contracts (Wicks Contracts)

2. The Consultant shall be provided with an editable Word document template of the DDC Addendum to the General Conditions. (Coordinate with DDC PM for latest version of the General Conditions and the Addendum to the General Conditions.) This document has highlighted fields which contain instructions to the Consultant for preparing each section. Only the highlighted areas of the document are to be edited, and the highlighted instructions shall be deleted for the final revised document.
3. The Addendum to General Conditions includes applicability of sections related to the DDC General Conditions, as well as Schedules A-E corresponding to the project scope. The Consultant must fill out the following Schedules as per instructions given in the Addendum to General Conditions, and noted below:
    a. Schedule A
    The Consultant shall prepare Schedule A, which provides information on contract Requirements, such as contract duration, liquidated damages, retainage, etc.
    b. Schedule B
    The Consultant shall prepare Schedule B, Warranty from Manufacturer, which lists Warranties that are included in the Consultant's specifications. The Consultant shall provide a list of the specifications sections for the material or equipment for which a warranty is required and include the length of the warranty period as specified.
    c. Schedule C
    The Consultant shall provide a complete list of all Contract Drawings, including HazMat Drawings provided by DDC OEHS, if applicable.
    d. Schedule D
    Requirements for electrical motor equipment may be included in the specifications. If applicable, the Consultant shall complete Schedule D as appropriate for the project.
    e. Schedule E
    The Consultant shall prepare Schedule E (Separation of Trades) for Multiple Prime Contracts (Wicks) only. The Consultant shall review the specifications and the DDC General Conditions for each of the items listed on Schedule E and shall ensure that the correct information has been entered for each separate contract.

14/C PROPRIETARY ITEMS LIST AND APPROVAL

All proprietary items must be approved in advance by DDC ACCO. Written justification must be provided by the Consultant along with the Proprietary Items Cost template.

The following must be included in the request:

1. Proprietary Items List
The Proprietary Items List must list the product and manufacturer and the related specification section. The proprietary Items List must be delivered as an editable Word document.
2. Proprietary Letter
Additionally, the Consultant, often in conjunction with the Sponsor Agency, must compose a justification for the Proprietary Item(s), on their office letterhead, which states why a particular manufacturer and product is required for the project. This must be delivered in PDF format.

The DDC PM shall submit the Proprietary Items List and justification for review by the Bid Package Unit, and subsequently coordinate approvals with DDC ACCO. Upon submittal of all documentation, proprietary item requests may either be approved or denied.

14/D SPECIAL EXPERIENCE REQUIREMENTS (SER)

The Consultant shall assist the DDC Project Manager in the specification of SER for the Contractor and/or sub-contractors. There are several categories of Special Experience, and the Consultant must identify which category is required in their justification. Refer to the DDC Technical Specifications Instructions (TSI) for additional information and the standard levels of Special Experience.

The Consultant must provide the SER justification on the Consultant's letterhead in PDF format to the DDC PM. The justification will then be reviewed by the Bid Package Unit, and subsequently coordinate approvals with DDC Law and DDC ACCO. Upon submittal of all documentation, the request for Special Experience Requirements may either be approved or denied.

If an SER is approved, the "Special Experience Requirements Notice to Bidders" will be included in the final Bid Package and indicate all applicable requirements.

14/E UNIT PRICE SCHEDULE

A Unit Price Schedule may be required for some Bid Packages. Although the final bids shall be lump sum, a unit price schedule may be used to supplement the cost estimate. The Unit Price Schedule shall be for additional work only and is typically used for items with unknown quantities at the time of bid (such as for façade restoration or excavation work). The Consultant shall not include references to unit prices within the technical specifications. Once completed, this must be delivered to the DDC PM as an editable Excel document.

15 BIM AND CAD GUIDELINES

15/A FORMATTING REQUIREMENTS

All electronic media must be readable by DDC's current software versions and optimum file sizes of desktop media, such as Acrobat, Microsoft, AutoCAD DWG format, BIM native and IFC format, video media and electronic photo (e.g., ".jpg"). DDC must approve type and version of BIM and/or CAD software used as the project authoring tool to be used on the project.

15/B BIM GUIDELINES

For projects identified at Design or CPSD Award or as requiring a BIM model, the Consultant shall produce a BIM model that facilitates the following:

- 3D coordination and clash detection
- engineering and energy analyses
- area takeoffs and quantities for cost estimating and other purposes.
- reviews during design

The BIM model will also be distributed to Contractors for their use in developing a construction BIM model and as-built BIM model. All BIM, CAD files, and documents are the property of DDC and will be considered record documents for the project.

I. BIM Manager

A BIM Manager from the Consultant's team must be assigned to the project and be identified in the BxP. The individual shall be responsible for coordinating the proper use, implementation and creation of BIM content and associated deliverables for the project and shall serve as a key point of contact for all BIM related activity on the project during design and construction.

II. BIM Execution Plan (BxP)

In collaboration with their subconsultants and other project participants, as required, the Consultant is responsible for preparing and subsequently updating a BIM Execution Plan (BxP). The BIM Execution Plan must be developed in accordance with the standards and guides published by BIM Forum (BIMForum.org.) The BIM model shall include all disciplines for 100% Construction Documents and the final design BIM model must be reconciled with any issued addenda or changes to the contract documents during the bidding process prior to distribution to a Contractor at Award.

Submitted model file names should include FMSID, discipline designator and software version. For example, for project HXX17CCC architectural Revit 2022 model the file name should be HXX17CCC-Arch-Revit22.rvt

III. Level of Development (LOD)

The Level of Development (LOD) shall be in accordance with the standards and guides published by BIM Forum. At Construction Documents, all design BIM model objects must be delivered at LOD 300, at a minimum, unless a lower LOD is specified in the BIM Forum Level of Development Specifications. The LOD of the model at each phase submission must be outlined in the form of a Model Element Table (MET) in the BxP and correspond to the development of the Element Approach Form.

IV. BIM Quality Control (QC) Report

A BIM QC Report tracks/monitors the BIM model to improve coordination and to ensure that elements meet the required LOD per established Model Elements Table (MET). The format for the report must be established in the BxP and completed at each BIM model submission to track model development and list any exceptions. The checklist must also be submitted at design completion to establish a baseline for the Construction BIM model.

The report shall include, at a minimum, the following:

1. Project Information including project name and FMSID.
2. Date and description of the submission.
3. List of data included in the submission including file names, format/software versions and descriptions.
4. Model Element Table (MET) tracking level of model development.
5. Confirmation that BIM submission conforms to DDC DCG and project BxP with a list of any exceptions.

V. Clash Detection Reports (CDRs)

A Clash Detection Report (DCR) must be provided and include major and minor systems for all disciplines. All clashes greater than ½" tolerance must be resolved by 100% Construction Documents.

A Clash Detection Report (CDR) must include the following three parts:

1. Report Overview

   The overview must include project information, the design phase, a complete list of systems reviewed, and the clash detection tolerance used for the current report.

2. Project Clash Summary

   The summary must provide the current number of clashes, clashes detected since the previous report, the type of clashes and their status of resolution.

3. Clash Tests

   Clash Tests include detailed information about each clash or clash group, including but not limited to, tag/name, image, description, location (closest grid intersection or room name), clash interference/severity distance, item types and element ids.

VI. BIM Specifications

If not otherwise provided by DDC, BIM Specifications must be generated by the Consultant and specifically tailored to the needs of the project. BIM Specifications must be included in Division 1 of the MasterSpec format and delivered to DDC as outlined in Section Z/13 of this guide.

VII. BIM Submission Requirements

/a Schematic Design Interim I & Capital Project Scope Development

1. Reality Capture documentation, as applicable. (Laser Scans, existing conditions BIM model and CAD files, 360 photos, etc.)

/b Schematic Design Interim II

1. Draft BIM Execution Plan (BxP)

/c Schematic Design Final

1. BIM model of SD Final proposal at LOD 100-200
2. IFC File export from Design BIM model
3. Updated BIM Execution Plan (BxP)
4. BIM QC Report
5. Autodesk Navisworks Master File (containing all inter-disciplinary model geometry)

/d 100% Design Development

1. BIM model of DD proposal at LOD 200-300
2. IFC File exported from Design BIM model
3. CAD files of drawings (for CAD file requirements see Section 15/C)
4. BIM QC Report
5. Autodesk Navisworks Master File (containing all inter-disciplinary model geometry)
6. Clash Detection Report
7. BIM Specifications – Draft Outline

/e 75% Construction Documents

1. BIM model of 75% CD proposal at LOD 300
2. IFC File exported from Design BIM model
3. CAD files of drawings (for CAD file requirements see Section 15/C)
4. BIM QC Report
5. Autodesk Navisworks Master File (containing all inter-disciplinary model geometry)
6. Clash Detection Report
7. BIM Specifications

/f 100% Construction Documents

1. BIM model of 100% CD proposal at LOD 300
2. IFC File exported from Design BIM model
3. CAD files of drawings (for CAD file requirements see Section 15/C)
4. BIM QC Report
5. Autodesk Navisworks Master File (containing all inter-disciplinary model geometry)
6. Clash Detection Report
7. BIM Specifications

/g Bid Award

1. Update 100% CD BIM model with all addenda and any changes to the contract Documents included.
2. IFC File exported from Design BIM model
3. CAD files of drawings (for CAD file requirements see Section 15/C)
4. BIM QC Report
5. Autodesk Navisworks Master File (containing all inter-disciplinary model geometry)
6. Clash Detection Report

7. Updated 100%CD BIM Specifications with all addenda as required
8. Final BIM model delivered to the DDC PM for distribution to the Contractor.

15/C CAD GUIDELINES

For projects NOT identified at Design Award as requiring a BIM model, the Consultant shall produce a set of design CAD drawings for DDC record and for distribution to Contractors for their use in developing submittals and As-Built record documents. The CAD file submission must comply with the following requirements:

- CAD documents must be delivered with all external references imbedded
- Files must be delivered by drawing number and collected in folders separated by trade
- The final drafted drawing must be easily identifiable within the file and all obsolete data, references or details removed.
- The collection of CAD drawings must be delivered as one compressed zip file to DDC at the 100% Design Development, 75% Construction Documents and 100% Construction Document Submission
- The collection of CAD files must be updated with all addenda and delivered as one compressed zip file to DDC following BID/AWARD.

16 DDC CONTACT INFORMATION

Unless specifically directed otherwise all correspondence must be addressed to:

(Name of Project Manager)
Public Buildings Division
Department of Design and Construction
30-30 Thomson Avenue
Long Island City, New York 11101

Captioned with:

FMS ID Project Number
Project Title and Location Contract Number Correspondence Subject
Telephone:
The agency telephone number is 718-391-1000. All staff at DDC can be reached with this number.

Acknowledgements

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Commissioner

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First Deputy Commissioner

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