

# OC 1: ADD ENVIRONMENTAL PROTECTION AS FUNDAMENTAL PRINCIPAL OF THE CONSTRUCTION CODES

*Administrative Code of the City of New York*  
Proposal developed by the Climate Adaptation Committee

## Summary

### Issue:

Although environmental protection is not expressly recognized as a principle informing the building code, environmental risks are more likely to affect New York City buildings and their residents than many other risks currently addressed in the code.

### Recommendation:

Amend the intent section of the building code to include environmental protection as a fundamental principle.

## Proposed Legislation, Rule or Study

*Amendments to the Administrative Code of the City of New York:*

1. Amend Section 28-101.2 as follows:

§28-101.2 Intent. The purpose of this code is to provide reasonable minimum requirements and standards, based upon current scientific and engineering knowledge, experience and techniques, and the utilization of modern machinery, equipment, materials, and forms and methods of construction, for the regulation of building construction in the city of New York in the interest of public safety, health and welfare, including environmental protection, and with due regard for building construction and maintenance costs.

## Supporting Information

### Issue – Expanded

The codes regulating the construction and maintenance of buildings were developed in response to serious threats to health and safety, and include requirements for structural integrity, fire prevention, emergency egress, and access to light and air. In particular, many provisions of the New York City building code arose in direct response to disasters or epidemics. The 1911 Triangle Shirtwaist Factory fire led to requirements for fire drills and automatic sprinklers, and widespread problems exiting darkened stairways during the 2003 blackouts have brought about enhanced requirements for emergency lighting in those stairways. Similarly, epidemics led to New York's tenement laws, which require access to light and air. These core functions are enshrined in the pre-ambles to the building code, which lays out the intent of the code as the protection "of public safety, health and welfare."

As new technologies arise and new public hazards are identified, the Construction Codes are regularly updated. For example, the energy crisis of the 1970's spurred the adoption of energy codes in order to protect against spiraling prices and the threat of shortages. Today, a group of issues, including energy consumption, indoor air quality, and storm water run-off, are commonly seen to impact public safety, health, and welfare at the broadest scale. These concerns, which generally encompass "environmental protection", are critically impacted by the way buildings are designed and constructed. For example, in New York City buildings are responsible for 75% of carbon emissions, 85% of water use and over 60% of solid waste. In response, environmental issues are rapidly being added to the Construction Codes, but in a piecemeal fashion. The impact of environmental issues -- including the imminent threat of climate change -- on human health, safety, and welfare, combined with the vast impact of buildings on the environment, means that it is time to place these issues on a more solid intellectual footing by adding "environmental protection" as a core principle of the Construction Codes.

Certainly, the risks posed by environmental degradation are as - or more - significant than any other risk the city regulates. For example, in 2008, out of New York City's more than one million buildings, there were only 26,862 structural fires, yet the Fire Code makes up an entire book of the city's administrative code.<sup>1</sup> In comparison, every person in the city will likely be exposed to unhealthy levels of volatile organic compounds and suffers if droughts are

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exacerbated by wasteful water use. In the medium-term future, New York will be subject to extreme weather events that will stress our infrastructure and affect every building and every resident.<sup>ii</sup> The New York City Climate Change Adaptation Task Force predicts that in New York in 2050 sea level will rise 7-12 inches, temperatures will be 3-5° F hotter, precipitation will be 10% greater and there will be more extreme weather events.<sup>iii</sup>

In addition, New York City will be unable to achieve many of the targets set in PlaNYC for sustainable growth through 2030 without systematically addressing the environmental impacts of the building sector. For example, the New York City Climate Protection ACT (Local Law 55 of 2007) requires the city to reduce greenhouse gas emissions by 30% by 2030. This will only be possible through changes to the design, construction and operation of buildings, given the outsized impact of buildings on New York City's environment.

Finally, New Yorkers' expectations have changed. Increasingly, people are looking to live and work in buildings that are healthy and reflect their values. For this reason, there are new efforts around the country, such as those by the International Code Council and ASHRAE, to incorporate green principles into building codes.

### Environmental & Health Benefits

The environmental and health benefits of this proposal are far-reaching since incorporating environmental protection as a principle of the Construction Codes provides the intellectual underpinning for all the recommendations of the NYC Green Codes Task Force.

This proposal was found to have a positive, indirect environmental impact.

This proposal was found to have a positive, indirect health impact.

### Cost & Savings

This proposal is for a study which will have no direct impact on construction costs.

### Precedents

Environmental codes have a long history in the U.S. in the form of energy codes, which are widespread and widely accepted. California recently adopted the Green Building Standards Code, potentially the first broad-intent code expressly intended to address environmental issues.<sup>iv</sup> The stated purpose of this code is "to improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices."<sup>v</sup>

A few months after California adopted statewide green building standards, San Francisco followed suit with its own green building code.<sup>vi</sup> The codified intent of the San Francisco code is "to promote the health, safety and welfare of San Francisco residents, workers, and visitors by minimizing the use and waste of energy, water and other resources in the construction and operation of the City . . . ."<sup>vii</sup>

As mentioned in the Issue-Expanded section, the International Code Council and ASHRAE are in the process of developing green codes.

### LEED

There are no LEED credits affiliated with this proposal. However, this amendment corresponds with the intent of LEED.

### Implementation & Market Availability

There are no known implementation issues for this proposal.

## ENDNOTES:

<sup>i</sup> NEW YORK CITY FIRE DEPARTMENT, FDNY VITAL STATS (2008), [http://www.nyc.gov/html/fdny/pdf/vital\\_stats\\_2008\\_final.pdf](http://www.nyc.gov/html/fdny/pdf/vital_stats_2008_final.pdf).

<sup>ii</sup> NEW YORK CITY PANEL ON CLIMATE CHANGE, CLIMATE RISK INFORMATION (2009), [http://www.nyc.gov/html/planyc2030/downloads/pdf/nyc\\_climate\\_change\\_report.pdf](http://www.nyc.gov/html/planyc2030/downloads/pdf/nyc_climate_change_report.pdf).

<sup>iii</sup> Ibid. at p. 3.

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<sup>iv</sup> Mathew Yi, State is First to OK Green Building Standards, S.F. CHRONICLE, July 18, 2008, available at <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2008/07/18/MNMG11R59J.DTL>.

<sup>v</sup> CAL. CODE, Tit. 24 § pt. 11 § 101.2 (2008), available at [http://www.documents.dgs.ca.gov/bsc/2009/part11\\_2008\\_calgreen\\_code.pdf](http://www.documents.dgs.ca.gov/bsc/2009/part11_2008_calgreen_code.pdf).

<sup>vi</sup> Press Release, Office of the Mayor, City of San Francisco, CA., Mayor Newsom Signs Groundbreaking Green Building Ordinance to Reduce Greenhouse Gas Emissions (Aug. 4, 2008), [http://www.sfgov.org/site/mayor\\_index.asp?id=85918](http://www.sfgov.org/site/mayor_index.asp?id=85918).

<sup>vii</sup> CITY OF SAN FRANCISCO, CA., DEP'T OF BUILDING AND INSPECTION, IMPLEMENTATION OF GREEN BUILDING REGULATIONS: ch. 13, § 1301C - INTENT, AB-093, (Sep. 24, 2008), available at <http://www.sfgov.org>.

# OC 2: FULLY ENFORCE NYC's CONSTRUCTION CODES

*Study*

Proposal developed by the Steering Committee

## Summary

### Issue:

Codes are increasingly viewed as an essential, low-cost strategy for achieving energy and carbon reduction targets. However, to be effective, codes must be enforced.

### Recommendation:

Develop a strategy to achieve 90% code compliance citywide, and address known impediments to enforcement.

## Proposed Legislation, Rule or Study

The Mayor's Office of Long-Term Planning, in conjunction with the Department of Buildings, should undertake an analysis of code compliance. This analysis should determine the current level of code compliance, assess the resource requirements to enforce all provisions of the Energy Code and the provisions developed by the Green Codes Task Force, and develop a strategy to achieve 90% compliance with the New York City Construction Codes. The analysis should consider the following issues and recommendations:

1. Issue: During the recent building boom, Department of Building staffing did not keep pace with the increase in building permits. In addition, Department of Building has begun enforcing the Energy Code for the first time, and does not have expertise on this code as well as the new code changes that may result from the Green Codes Task Force.

#### Recommendations:

- A) Hire expert energy code technical authorities, reviewers and inspectors.
- B) Provide training for plan examiner staff on these codes.
- C) Provide training for Department of Building construction, plumbing and electrical inspectors.
- D) Consider increasing permit fees or structure the cost of building permit fees to increase as the number of permits increases, thereby enabling DOB to hire more staff in lockstep with its workload. The revenue from these increased fees should be dedicated specifically for DOB, rather than the city's general fund, to ensure they serve their intended purpose.

2. Issue: The Department of Building does not receive or review electrical drawings, although the Construction Codes require submission of every other discipline of the design drawings for a building. Since energy efficiency standards, including but not limited to the Energy Code, involve electrical work as well as mechanical and architectural, the coordination of energy compliance technical requirements and procedures is awkward. The separation of the Electrical Division from the Construction Division has no apparent rationale.

Recommendation: Shift the Electrical Division into the Construction Division, which has longstanding experience with multidisciplinary administration and enforcement of the Codes.

3. Issue: Critical onsite inspections of construction work are currently undertaken by "special inspectors" who are authorized by the department yet paid for by the building owner. This system creates clear conflicts of interest for firms wishing to be hired again by an owner to undertake future special inspections or design work.

Recommendation: Payments for special inspectors should either: (1) be used to increase department inspection staff, rather than hire outside inspectors; or (2) be deposited into a fund administered by the department, which would hire the special inspectors from an approved list.

4. Issue: Many building projects are "professionally certified" by architects or engineers for compliance with New York City's zoning and construction laws. Department audits of these plans, however, regularly discover violations of the city's construction laws. The Department is currently reviewing its self-certification program.

Recommendation: Withdraw the professional certification authority of architects and engineers found to submit plans with significant violations of the city's laws, including the energy code and other green codes.<sup>1</sup>

## Supporting Information

### Issue – Expanded

Increasing the level of building and energy code compliance is increasingly seen as central to achieving New York City's new sustainability goals as well as continuing to ensure health and safety. After all, codes are merely words on paper if no one complies with them. The U.S. Department of Energy regards energy code compliance as so important that it has made the awarding of energy stimulus grants to states contingent on achieving a 90% compliance rate. Similarly, the energy bills currently being considered by the U.S. Congress tie the receipt of energy dollars to achieving equally high documented energy code compliance rates. Some of these federal mandates have already trickled down to New York State as reflected in increased funding for code training and enforcement by NYSERDA and others.

Code compliance is an issue that also extends beyond the energy code. Concern about code enforcement was voiced by every technical committee and in almost every meeting with stakeholders.

There are two basic approaches to increasing compliance rates. First, one can improve the level of knowledge within the design and construction community. (Benjamin Franklin coined his aphorism, "An ounce of prevention is worth a pound of cure" in relation to fire-prevention.) California has taken this approach to energy code compliance for decades by providing training and resource centers, and it has achieved generally positive results. Second, there needs to be sufficient review, accountability, and repercussions on the back end to ensure that the codes are taken seriously.

### Environmental & Health Benefits

Improving enforcement of the Construction Codes may lead to a broad range of unquantifiable environmental and health benefits including increased energy and water efficiency, reduced greenhouse gas emissions and air pollution, enhanced indoor air quality, and reduced stormwater runoff.

For the purposes of the Executive Summary, this proposal was found to have no significant positive environmental impact.

This proposal was found to have no significant positive health impact.

### Cost & Savings

This proposal is for a study, which will have no direct impact on construction costs.

### Precedents

The Task Force researched building department enforcement, internal training and funding practices in four cities regarded as leaders in green building: Chicago, San Francisco, Portland, and Seattle. All of these cities have training programs for permit staff, while only some have funding to also train field inspectors. All identified funding as a significant limitation on their enforcement capability since educating building permit and inspection staff requires money that is not usually part of building department budgets. When funding is lacking, some cities have provided permit examiners and field inspectors with checklists to help them track green code changes.

Chicago's Department of the Environment has been training Building Department intake staff on new code requirements. They also provide reviewers with a Rescheck or Comcheck printout, a checklist for compliance. The department would like to increase staff because of the extra time required to review drawings and to extend training to building inspectors, which they see as necessary, but is constrained by funding.<sup>2</sup>

San Francisco's Department of the Environment provides staff training for both permit reviewers and inspectors. This is funded by waste fees, a public benefit charge on utility bills (Pacific Gas and Electric, the local private sector gas and electric provider), and work orders from other city departments, including the Department of Building Inspection.<sup>3</sup>

Portland's Bureau of Development Services, which includes building permit and inspection staff, is funded by permit fees alone. In accord with city bylaws, no further funding is possible. The current economic downturn has brought a 20% reduction in permit applications, but a 50% reduction in permit fees due to a more dramatic cutback in large-scale projects. Staff has been cut in half and field inspectors are limited to focusing on fire and safety issues.<sup>4</sup>

Seattle's Sustainable Infrastructure and Energy Department trains Building Department reviewers in green techniques and processes as a part of job training. Due to lack of funds, it does not train field inspectors.<sup>5</sup>

### LEED

There are no LEED credits affiliated with this proposal.

### Implementation & Market Availability

There are no known implementation issues for this proposal.

# ENDNOTES

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<sup>1</sup> See Proposed Legislation, Rule or Study 4 (It will also be necessary to educate architects and engineers on the energy code and codes changes to ensure maximum compliance. Education is the subject of a separate recommendation: Professional Education and Code Training.)

<sup>2</sup> Interview with Elizabeth Scanlan, Director of Code Development, Dept. of Buildings, City of Chicago, IL. (Jan. 6, 2010); and Interview with Javier Ceballos, Mechanical Engineer, Energy and Sustainable Business, Dept. of the Environment, City of Chicago, IL. (Jan. 6, 2010).

<sup>3</sup> Interview with Barry Hooper, Private Sector Green Building Program Specialist, Dept. of the Environment, City of San Francisco, CA. (Jan. 21, 2010).

<sup>4</sup> Interview with Vinh Mason, Policy Analyst, Bureau of Planning and Sustainability, City of Portland, OR. (Jan. 7, 2010).

<sup>5</sup> Interview with Jayson Antonoff, Policy Advisor, Sustainable Infrastructure & Energy/Climate Change, Department of Planning & Development, City of Seattle, WA. (Jan. 7, 2010).

# OC 3: DON'T EXEMPT EXISTING BUILDINGS FROM GREEN CODES

*New York City Building Code*

Proposal developed by the Steering Committee

## Summary

### Issue:

Buildings constructed before the 2007 building code went into effect can use the laxer standards of the 1968 code for alterations. This exception allows existing buildings to bypass the environmental and health enhancements recommended by the NYC Green Codes Task Force.

### Recommendation:

Require all buildings to comply with improved environmental and health standards.

## Proposed Legislation, Rule or Study

*Amendments to the New York City Building Code:*

1. Amend Section 28-101.4.3 to add the following new paragraph:

8. All work shall comply with the following sections of the New York city construction codes as applicable: [List all sections added or amended by the NYC Green Codes Task Force]

## Supporting Information

### Issue – Expanded

In 2007, New York City adopted a modified version of the International Code Council's family of construction codes, replacing the city's 1968 building code that was largely outdated. Since July 2009, the new codes have been mandatory for new buildings. This tremendous achievement was the result of several years of work by the Department of Buildings in conjunction with hundreds of stakeholders including real estate, design, construction, labor and government experts.

This new code, however, contains a major loophole: existing buildings constructed under the 1968 building code can still, with certain exceptions,<sup>1</sup> renovate under the standards of this outdated code or earlier codes. Since 85% of the buildings currently in NYC will still be here in 2030,<sup>2</sup> this means that the vast majority of the city's buildings would effectively be exempt from many modern standards of the 2008 codes. It also means most buildings would be exempt from many enhancements to the building code resulting from the recommendations NYC Green Codes Task Force. As such, addressing this loophole is essential for NYC buildings to become environmentally responsible and healthy places to live and work. In keeping with this proposal, the Energy Code enacted in December 2009 specifically includes existing buildings.

### Environmental & Health Benefits

This proposal will have enormous environmental impact by determining the reach of many recommendations of the NYC Green Codes Task Force. Without its implementation, much of the work of the Task Force will only apply to the small subset of building constructed after 2008 – by 2030, according to the Mayor's Office, only 15% of the city's buildings.

For the purposes of the Executive Summary, this proposal was found to have no significant positive environmental impact.

This proposal was found to have no significant positive health impact.

### Cost & Savings

The impact of this proposal on capital costs is complex given the wide range of project scopes for renovations and will

require further study. For the purposes of the Executive Summary, it was assumed this proposal will not have any significant impact on capital costs.

**Precedents**

The Task Force researched code practices as they apply to existing buildings in four cities regarded as leaders in green building: Chicago, San Francisco, Portland, and Seattle. Most of these cities require existing buildings that file for renovations to comply with all current energy and building codes. Exemptions are typically made only for historic structures if compliance would compromise the historic integrity.

In Chicago, all new construction and renovations are required to comply with the Chicago Energy Conservation Code. Historic structures are exempt only when the Landmarks Commission deems significant features would be impacted.<sup>3</sup>

San Francisco's Green Building Ordinance did not address existing buildings. Tenant improvements are required to be LEED certified for commercial interiors projects 25,000 square feet or larger. The State of California's energy codes apply to all retrofits.<sup>4</sup>

Portland has a proposal, but no requirement yet, to require existing buildings filing for a building permit to renovate to meet up-to-date energy codes.<sup>5</sup>

All renovations in Seattle are subject to current building and energy codes.<sup>6</sup>

**LEED**

Implementation of this proposal could help buildings achieve credits under many LEED rating systems.

**Implementation & Market Availability**

There are no known implementation issues for this proposal.

## ENDNOTES:

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<sup>1</sup> See Issue-Expanded (All buildings, for example, still must comply with the mechanical, fuel gas and plumbing codes for alterations.).

<sup>2</sup> CITY OF NEW YORK, NY, PLANYC, A GREENER, GREATER NEW YORK, 135 (2007)  
[http://www.nyc.gov/html/planyc2030/downloads/pdf/full\\_report.pdf](http://www.nyc.gov/html/planyc2030/downloads/pdf/full_report.pdf).

<sup>3</sup> Interview with Elizabeth Scanlan, Director of Code Development, Dept. of Buildings, City of Chicago, IL. (Jan. 6, 2010); and Interview with Javier Ceballos, Mechanical Engineer, Energy and Sustainable Business, Dept. of the Environment, City of Chicago, IL. (Jan. 6, 2010).

<sup>4</sup> Interview with Barry Hooper, Private Sector Green Building Program Specialist, Dept. of the Environment, City of San Francisco, CA. (Jan. 21, 2010).

<sup>5</sup> Interview with Vinh Mason, Policy Analyst, Bureau of Planning and Sustainability, City of Portland, OR. (Jan. 7, 2010).

<sup>6</sup> Interview with Jayson Antonoff, Policy Advisor, Sustainable Infrastructure & Energy/Climate Change, Department of Planning & Development, City of Seattle, WA. (Jan. 7, 2010).



# OC 4: RECONVENE THE GREEN CODES TASK FORCE

*New York City Building Code*  
Proposal developed by the Steering Committee

## Summary

### Issue:

Green building is a rapidly evolving field, and New York City's construction laws need to keep pace with these changes.

### Recommendation:

Reconvene the NYC Green Codes Task Force every three years.

## Proposed Legislation, Rule or Study

*Amendments to the New York City Building Code:*

1. Add a new Section 28-101.6 as follows:

§ 28-101.6 Convening the Green Codes Task Force. Beginning July 1, 2011 and every third year thereafter, the Mayor and Speaker of the City Council shall convene a Green Codes Task Force to recommend changes to city laws and regulations to improve the environmental and health performance of new and existing buildings. The task force shall be led by a chairperson with expertise on green building policy whose responsibilities shall be to:

1. Guide the work and schedule of the task force;

2. Select the chairs and members of each sub-committee;

3. Chair a steering committee, which shall be composed of a representative of the Mayor, a representative of the Speaker, the chairs of each technical committee, and other members as necessary;

4. Form an advisory committee, whose membership shall include representatives of real estate owners, tenants, labor, construction, the environment, social justice organizations, affordable housing and other interests as necessary; and

5. Form technical committees, whose members shall be subject matter experts.

## Supporting Information

### Issue – Expanded

The real estate industry has undergone a period of remarkable change over the last decade with the shift in green building from a niche practice to mainstream for Class A and government buildings. The laws governing construction in New York City, however, have not kept up with this pace. Codes have largely not been updated to reflect new practices and regulatory impediments are sprinkled through the city's laws.

The codes affecting construction span at least one dozen titles of the city's Administrative Code and its related rules. While concentrated in the Construction Codes and Zoning Resolution, these regulations are also found in the Health Code and Fire Code, as well as codes and rules for Environmental Protection, Consumer Affairs, Parks and Recreation, Sanitation, Housing Preservation and Development, Transportation, and Emergency Management. Until the NYC Green Codes Task Force was convened, no forum had yet considered the impact of all these agencies and codes on green building.

New York City also has the capacity to undertake code development through local access to many national green building leaders. Many architectural and engineering firms are headquartered or have offices in the city, along with leading real estate owners, environmental groups, university research departments, and green entrepreneurs.

Finally, the first NYC Green Codes Task Force has been an incredible success. This initiative brought together over 200 pro-bono members and other volunteers, generating thoughtful and well-researched code proposals. The 111 proposals

in the Task Force report range from minor codes changes to significant shifts that will make New York City buildings more energy and water efficient, and healthier places to live, work, and learn.

For these reasons, the NYC Green Codes Task Force should be reconvened every three years, ensuring New York City's place as a capital of urban green building.

#### **Environmental & Health Benefits**

Reconvening the Task Force will provide a wide range of ongoing environmental and health benefits.

For the purposes of the Executive Summary, this proposal was found to have no significant positive environmental impact.

This proposal was found to have no significant positive health impact.

#### **Cost & Savings**

This proposal is to reconvene the Task Force, which will have no direct impact on construction costs.

#### **Precedents**

The Task Force researched the code development process in four cities regarded as leaders in green building : Chicago, San Francisco, Portland, and Seattle. All these cities have worked with local experts on initiatives to green their construction laws and building codes. Typically, these task forces have not been convened as part of a regular and systematic process but instead at the request of the city executive.

Chicago previously had a standing body to address energy issues, but it has been inactive for several years. In 2003, the city convened a task force to identify code impediments to green building. Since then, the Department of the Environment retained a consultant to propose updates to the energy code, which was reviewed and amended by the Department of Buildings before going to city council for approval. Chicago is now in the process of adopting the International Building Code, which has reactivated many code committees, though the Energy Code Committee is not one of them at present.<sup>1</sup>

In San Francisco, building code changes are made at the discretion of the Mayor who identifies a policy priority, which is referred to a task force with the pertinent expertise and to stakeholder groups. Participants agree to a finite period of service advising the Mayor on a specific question in public meetings, which may result in an advisory report. The task force is infrequently invoked due to significant statewide efforts on codes, especially the new Green Building Standards Code.<sup>2</sup>

Portland's Bureau of Development Services is pursuing creation of a local building code amendment for sustainable construction standards. If successful, the local amendment will augment existing State building code requirements. A draft of the Local Code Amendment was finished in June 2009 but the project is on hold due to staff shortages.<sup>3</sup>

Seattle convened a one-off green building task force. It created policies with a narrow focus and will not be continued on a recurring basis.<sup>4</sup>

#### **LEED**

There are no LEED credits affiliated with this proposal.

#### **Implementation & Market Availability**

There are no known implementation issues for this proposal.

## **ENDNOTES:**

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<sup>1</sup> Interview with Elizabeth Scanlan, Director of Code Development, Dept. of Buildings, City of Chicago, IL. (Jan. 6, 2010); and Interview with Javier Ceballos, Mechanical Engineer, Energy and Sustainable Business, Dept. of the Environment, City of Chicago, IL. (Jan. 6, 2010).

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<sup>2</sup> Interview with Barry Hooper, Private Sector Green Building Program Specialist, Dept. of the Environment, City of San Francisco, CA. (Jan. 21, 2010).

<sup>3</sup> Interview with Vinh Mason, Policy Analyst, Bureau of Planning and Sustainability, City of Portland, OR. (Jan. 7, 2010).

<sup>4</sup> Interview with Jayson Antonoff, Policy Advisor, Sustainable Infrastructure & Energy/Climate Change, Department of Planning & Development, City of Seattle, WA. (Jan. 7, 2010).

# OC 5: CONSOLIDATE REGULATION OF LANDSCAPE PRACTICES

*New York City Building Code or New Landscape Local Law*  
Proposal developed by the Site & Site Stormwater Committee

## Summary

### Issue:

Landscape and site design have an impact on important urban environmental issues, such as the urban heat island effect, stormwater capture and run-off, species diversity, maintenance, toxicity, and materials flows. However, New York City does not have a code or ordinance to address these issues comprehensively.

### Recommendation:

Add a chapter on landscape and site to the city's Building Code.

## Proposed Legislation, Rule or Study

*New York City Building Code or New Landscape Local Law*

Add new chapter to the New York City Building Code or enact a new landscape local law containing at a minimum the following sections covering the key issues listed within each section:

### CHAPTER 34 SITE AND LANDSCAPING

#### SECTION BC 3401 GENERAL

**23.01 Scope.** The provisions of this chapter shall govern the materials, design, construction and quality of the site and landscaping.

#### SECTION BC 3402 DEFINITIONS

#### SECTION BC 3403 ADMINISTRATION

- Documentation and Filing

#### SECTION BC 3404 CONSTRUCTION PRACTICES

- Protection of Soils
- Retention and Protection of Trees

#### SECTION BC 3405 GRADING

#### SECTION BC 3406 DRAINAGE AND STORMWATER MANAGEMENT

- Irrigation
- Adaptation to Climate Change and Flood Zone Issues

#### SECTION BC 3407 SUBGRADE

- Utilities

**SECTION BC 3408**  
**PAVING**

- Reflectivity
- Permeability
- Recycled content
- Sidewalks

**SECTION BC 3409**  
**VEGETATION AND SHADING**

- Native species
- Biodiversity
- Tree canopy coverage
- Habitat protection and enhancement
- Shading
- Reduction of turf grass

**SECTION BC 3410**  
**ACCESSORY FACILITIES**

- Parking
- Bicycle parking
- Trash storage
- Cleaning areas
- Physical Activity and Exercise

**SECTION BC 3411**  
**MAINTENANCE**

- Fertilizers
- Pesticides

**SECTION BC 3412**  
**SITE LIGHTING**

- Light pollution
- Light trespass

**SECTION BC 3413**  
**SURFACES**

- Blue roofs
- Green roofs
- White roofs

## **Supporting Information**

### **Issue - Expanded**

In recent years, it has become increasingly clear that landscaping and construction sites have a major impact on the environment. Sustainable landscaping and responsible construction site management can provide well-designed open spaces, improve air and water quality, plan for climate change, and reduce energy consumption – all goals of PlaNYC. However, there is no comprehensive code or ordinance in New York City that addresses the issues of site and landscaping to establish pre- or post construction standards or requirements related to environmental sustainability. The few related ordinances are scattered in the Zoning Code, fragmented according to building type.

This proposal would create a new chapter of the Building Code that establishes standards for the materials, design, construction and quality of the site and landscape. Having one comprehensive code will make these standards easier to understand, increasing compliance and simplifying enforcement. It will also facilitate code development by enabling policy makers to identify where the city may be over- or under-regulating site and landscaping. Many proposals from the Task Force report touch on these topics and might ultimately find a home in this new chapter.

### Environmental & Health Benefits

The environmental and health benefits of this proposal are wide and far reaching. Examples of the effects of this proposal include reduction of the heat island effect, storm water capture and run-off, increased species diversity, and reduction in the use of hazardous chemicals.

This proposal was found to have a positive, indirect environmental impact.

This proposal was found to have no significant positive health impact.

### Cost & Savings

This proposal is for a new code section, which will have no direct impact on construction costs.

### Precedents

Several cities have implemented landscape regulations, each addressing different areas of this proposal.

The City of Oklahoma City has zoning and planning codes that aim to “enhance, protect and promote the economic, ecological and aesthetic environment.”<sup>1</sup>

Chicago’s landscape ordinances require parking lots to integrate landscape islands and trees, and new developments to include landscaping.<sup>2</sup> These ordinances help to reduce air and noise pollution, protect the soil, cool the air and increase the aesthetic attractiveness of the surroundings. The Department of Zoning co-administers the Landscape Ordinance with the Department of Streets and Sanitation’s Bureau of Forestry.

Sacramento, CA also established landscape requirements for single-family and two-family residential units. A maximum of 40% of the required front yard setback area may be paved for off-street parking and driveways.<sup>3</sup> The remaining unpaved portion of the setback areas must be landscaped, and only living vegetation may be used as the primary ground cover.<sup>4</sup>

Irvine, CA is an example of a sustainable landscape code that supplements their community landscaping and urban forest ordinance. Its intent is to provide policy, guidelines, standards and procedures to obtain sustainable landscapes within the city. The city has also developed a Sustainable Landscaping Guideline manual, a plan review procedure and permitting policy to help guide this initiative.<sup>5</sup>

Collier County, FL enacted uniform standards for the installation and maintenance of landscaping. In addition, it recognizes the importance of water conservation through the use of native and drought-tolerant vegetation. The ordinance is applicable to all developments including single family dwellings. Plans must be prepared by a licensed landscape architect (single-family homes are exempt from this requirement). Plant material standards are divided into quality, native vs. exotic, type, prohibited species, and receive credit for plant preservation. The ordinance includes detailed specifications for trees, shrubs, hedges and ground covers, in addition to maximum percentages of particular plants in order to promote species diversity.<sup>6</sup>

Seattle, WA has several landscape ordinances that include a community landscape code, a tree ordinance, and sustainability design requirements for neighborhood business districts. The sustainability code requires that landscape plans be developed for new development or redevelopment in commercial areas; these plans are prepared and reviewed based on a rating system of a range of sustainable practices. This ordinance, adopted in January 2007, requires landscape plans to address ecological function and aesthetic principles using point-based criteria to measure sustainable factors such as canopy coverage, permeability and visual access. Points are given if the landscape plan preserves trees, installs green roofs, green walls and irrigation systems that reduce the use of potable water. Extra bonus points are awarded for the use of drought-tolerant plants.

### LEED

There are no LEED credits directly affiliated with this proposal. However, this amendment corresponds with the intent of LEED Sustainable Sites sections in all rating systems with the exception of LEED for Neighborhood Development. LEED ND (pilot program) will address landscaping issues in a section designated Green Construction and Technology, though this rating system is concerned with overall land and community issues and the proposed code revisions could have broad reaching effects on this system as a whole.

### Implementation and Market Availability

There are no known implementation issues for this proposal. Materials that might be used under this proposal are widely available. Plant nurseries have greatly expanded their inventories of native and naturalized species; multiple competitive manufacturers exist for paving, furnishings, fencing and lighting that incorporate recycled content, are dark-sky compliant and have high albedo.

### Notes

In addition to the table of contents, there will need to be sections on “Compliance” and “Administration” to discuss the

requirements associated with submittal and review of site plans, supporting documentation and the manner in which this code is administered and enforced. The precedents offered above have a number of different strategies that could be considered as a starting point for NYC.

## ENDNOTES:

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<sup>1</sup> OKLAHOMA CITY, OK., art. IV, § 59-11100, (2007), available at [http://www.okc.gov/Planning/landscape/documents/LandOrd\\_013004.pdf](http://www.okc.gov/Planning/landscape/documents/LandOrd_013004.pdf).

<sup>2</sup> New Rules Project, Landscape Ordinance, <http://www.newrules.org/environment/chiland.html> (last visited Jan. 26, 2010).

<sup>3</sup> SACRAMENTO CITY CODE, tit. 17 § 68.010 (2007), available at [http://www.sacgardens.org/news/codes\\_sacramento\\_revisions\\_2007\\_025.pdf](http://www.sacgardens.org/news/codes_sacramento_revisions_2007_025.pdf)

<sup>4</sup> SACRAMENTO CITY CODE, tit. 17 § 68.010 (2007), available at [http://www.sacgardens.org/news/codes\\_sacramento\\_revisions\\_2007\\_025.pdf](http://www.sacgardens.org/news/codes_sacramento_revisions_2007_025.pdf)

<sup>6</sup> Buck Abbey, Landscape Online, Green Building Irvine, <http://www.landscapeonline.com/research/article.php?id=11448> (last visited Jan. 26, 2010).

<sup>7</sup> COLLIER COUNTY, FL: LAND DEVELOPMENT CODE, § 4.06.00 (2009), available at <http://library.municode.com/html/13992/book.html>.

SEATTLE, WA., MUN. CODE, § 25.09 - 25.11; § 23.44 - 23.45; and 23.47 - 23.50 (2009), available at <http://clerk.ci.seattle.wa.us/~public/code1.htm>.

# OC 6: STREAMLINE APPROVALS FOR GREEN TECHNOLOGIES & PROJECTS

*Expedite green building projects and technologies*  
Proposal developed by the Steering Committee

## Summary

### Issue:

New products and technologies that address environmental concerns are rapidly being developed, and many building owners and developers are eager to implement them. However, there are often no rules governing the use of new products. There are also interagency regulatory issues, which can prohibit or delay projects that utilize new technologies.

### Recommendation:

To facilitate the use of innovative technology that can have significant environmental benefits, the city will establish an Interagency Green Team to assist innovative projects in overcoming interagency regulatory hurdles. It will also establish an Innovation Review Board to evaluate technologies for pilot projects or recommend that rules be established for their use. Independent of the Task Force proposal, the New York City Department of Buildings has initiated a Building Sustainability Board to streamline approvals of new green technology.

## Proposed Legislation, Rule or Study

### Part I: Interagency Green Team

The City of New York should convene an Interagency Green Team, managed by the Mayor's Office, to streamline city permitting of the most sustainable building projects.

The following agencies should have permanent seats:

- Department of Buildings
- Department of Environmental Protection
- Department of Health and Mental Hygiene
- Department of City Planning

The following agencies should designate a representative to the innovation review board, to participate as needed:

- Fire Department of New York
- Department of Transportation
- Department of Parks and Recreation
- Department of Consumer Affairs
- Office of Emergency Management
- Housing Preservation and Development
- Department of Sanitation
- Landmarks Preservation Committee

### Part II: Innovation Review Board

The Department of Buildings should convene an Innovation Review Board to review new green technologies and determine under what circumstances they can be safely piloted in NYC or whether they could be used more broadly. If the board determines that a product is safe and effective, the board should designate oversight responsibilities to the appropriate city agency and authorize the agency to establish rules and regulations for the use of the product.

In addition to the Department of Buildings, the following agencies should have permanent seats:

- Department of Environmental Protection
- Department of Health and Mental Hygiene
- Department of City Planning
- Department of Design and Construction

The following agencies should designate a representative to the Innovation Review Board, to participate as needed:

- Fire Department of New York



- Department of Transportation
- Department of Parks and Recreation
- Department of Consumer Affairs
- Office of Emergency Management
- Housing Preservation and Development
- Department of Sanitation
- Landmarks Preservation Committee

## Supporting Information

### Issue – Expanded

Many innovative green building projects have difficulty obtaining permits because the technologies they utilize introduce interdisciplinary issues that are hard to regulate by separate agencies. Nonetheless, the city benefits from the experimental efforts of early adopters and should facilitate their work. To do so, this proposal recommends that the Office of the Mayor establish an interagency green team to assist advanced green building projects in the regulatory review process and resolve issues they may encounter during permitting.

There is also growing demand for green technologies, and new green products are being developed at a rapid pace. New York City building codes, however, are unable to keep up with the market and do not provide regulations for many new products—meaning new technologies and products are prohibited de facto. In order to encourage timely adoption of new technologies, this proposal recommends the Department of Buildings establish an innovation review board to review new products and expedite their implementation.

Since the Innovation Review Board was first proposed, the Department of Buildings has convened a Building Sustainability Board to review new technologies. This goes a long way toward addressing the issues noted above. In order to provide one forum to consider all new green technologies, this board could be broadened to include other city agencies.

### Environmental & Health Benefits

Streamlining green buildings and technologies will speed up the adoption of sustainable building practices and technologies, providing the range of environmental and health benefits associated with green building.

For the purposes of the Executive Summary, this proposal was found to have no significant positive environmental impact.

This proposal was found to have no significant positive health impact.

### Cost & Savings

This proposal is for an Interagency Green Team and an Innovation Review Board, both of which will have no direct impact on construction costs.

### Precedents

The Task Force researched ways that four cities – Chicago, San Francisco, Portland and Seattle – streamline approvals for green technologies and projects. Only Portland has a dedicated bureau specific to green technologies, others process them as they do all products/procedures new to the code. To encourage sustainable buildings, some building departments accelerate the timeline to secure approvals.

Chicago building designs that include elements that are new to the code are presented to the Committee on Standards and Tests, which makes recommendations to the Commissioner of Buildings. There is no special consideration or path for new green technologies.<sup>1</sup>

San Francisco approves the use of new materials and technologies based upon documentation from trustworthy US testing agencies. Preference is for demonstrated durability rather than “green.”<sup>2</sup>

Portland’s Bureau of Development Services (BDS) has established the Alternative Technology Advisory Committee, made up of experts in sustainable technologies and emerging construction techniques, to help the bureau evaluate new technologies. Applications to the Alternative Technology Advisory Committee may be for either a technology that will be used in a specific project being reviewed by BDS, or for a particular technology (such as a new building product) that may be used in multiple future projects. Applications can be made in advance of a building permit application, or as part of the permit review process. The Committee review is an optional process that is intended to help applicants get innovative products approved into their projects. An applicant may proceed directly to a building code appeal, without a committee recommendation, if desired. With any application to the Committee the burden of proof is on the applicant to show that the proposed technology promotes a more positive impact to the earth’s natural systems, when compared to similar, approved technologies. BDS is not bound by the recommendations of the Committee. A favorable

recommendation of a technology by the Committee does not guarantee approval of a building code appeal by BDS for the use of the technology. The Alternative Technology Advisory Committee meets once a month; therefore it may take several weeks for an application to be reviewed by the Committee. Applicants interested in using this process are encouraged to submit their applications as early in their design process as possible.<sup>3</sup>

In San Francisco, projects committing to at least LEED Gold certification receive priority service from the Departments of Planning, Building Inspection, and Public Works.<sup>4</sup>

Seattle has a dedicated Priority Green Team to review buildings with a high level of sustainability. This hastens the approval process.<sup>5</sup>

## **LEED**

The implementation of this proposal may encourage the use of new green technologies, which will may increase achievement of LEED Innovation in Design credits in all rating systems.

## **Implementation & Market Availability**

There are no known implementation issues for this proposal.

# **ENDNOTES:**

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<sup>1</sup> Interview with Elizabeth Scanlan, Director of Code Development, Dept. of Buildings, City of Chicago, IL. (Jan. 6, 2010); and Interview with Javier Ceballos, Mechanical Engineer, Energy and Sustainable Business, Dept. of the Environment, City of Chicago, IL. (Jan. 6, 2010).

<sup>2</sup> Interview with Barry Hooper, Private Sector Green Building Program Specialist, Dept. of the Environment, City of San Francisco, CA. (Jan. 21, 2010).

<sup>3</sup> Interview with Vinh Mason, Policy Analyst, Bureau of Planning and Sustainability, City of Portland, OR. (Jan. 7, 2010).

<sup>4</sup> Interview with Barry Hooper, Private Sector Green Building Program Specialist, Dept. of the Environment, City of San Francisco, CA. (Jan. 21, 2010).

<sup>5</sup> Interview with Jayson Antonoff, Policy Advisor, Sustainable Infrastructure & Energy/Climate Change, Department of Planning & Development, City of Seattle, WA. (Jan. 7, 2010).

# OC 7: ENHANCE CODE TRAINING FOR ARCHITECTS & ENGINEERS

*Study*

Proposal developed by the Steering Committee

## Summary

### Issue:

With the adoption of the 2008 New York City Construction Codes, along with regular revisions and the addition of new green provisions, the city's building codes are continuously changing. It is important that the city informs building professionals of all code changes and ensures that training is provided so that practitioners can comply with new requirements.

### Recommendation:

Develop a strategy to ensure that building professionals are aware of code changes and able to access training on the most current versions of the New York City Construction Codes. The Mayor's Office began working with industry associations, including Urban Green, AIA New York, and ASHRAE New York, to develop training prior to issuance of this report.

## Proposed Legislation, Rule or Study

The City should develop a strategy to create a standardized curriculum and delivery mechanisms for training architects, engineers, lighting designers, and design professionals on the New York City Construction Codes. In developing this strategy, the City should:

1. Work with professional societies representing design professionals;
2. Explore means to maximize participation and ensure knowledge of codes, including adding code training as a requirement for continuing education of existing designers, licensing for new designers, and for accreditation of architectural and engineering schools; and
3. Consider options for funding the development and delivery of this training.

## Supporting Information

### Issue – Expanded

Construction in New York City is governed by a large and complex set of codes and regulations. The Construction Codes include half a dozen books – the Building Code, Energy Code, Electrical Code, Mechanical Code, Fuel Gas Code, and Plumbing Code – that change regularly. Many other codes and regulations, such as the Zoning Resolution, also affect construction. Compliance with these numerous and complex laws is only possible if designers know what the laws say and keep abreast of changes to them.

Preliminary efforts are already underway to educate designers on the Energy Code, which the Department of Buildings began enforcing for the first time in 2009. At the request of the Office of the Mayor, the AIA New York Chapter, ASHRAE-NY and Urban Green Council assembled a group of speakers to train design professionals on the Energy Code. Each organization offered a 5-part training session that covered the content of the energy code, preparing submittals, and documenting compliance. These sessions were filled to capacity, indicating the tremendous demand for education on codes.

To further these initial efforts, this proposal recommends that the City work with professional societies to develop a standardized curriculum that can be offered regularly and revised as codes change, as well as explore mechanisms for delivery. It is also essential to consider options to maximize participation and ensure knowledge of codes, such as adding code training as a requirement of continuing education for designers to maintain their licenses, for the licensing exams of new designers, and for the accreditation of design schools. Finally, the experience from other cities indicates that funding is required for program development and delivery.

### Environmental & Health Benefits

This proposal will enhance code compliance, achieving the range of environmental and health benefits addressed under the Construction Codes and other laws, including energy and water efficiency, indoor air quality, and stormwater reductions.

For the purposes of the Executive Summary, this proposal was found to have no significant positive environmental impact.

This proposal was found to have no significant positive health impact.

### **Cost & Savings**

This proposal is for a study, which will have no direct impact on construction costs.

### **Precedents**

The Task Force researched efforts to train architects and engineers in four cities regarded as leaders in green building: Chicago, San Francisco, Portland, and Seattle. Three of the four cities have extensive programs to train design professionals on compliance with energy codes, working with professional and non-profit organizations to deliver training. Some cities contribute to the funding of these programs, but most training funding comes from other sources, including from individual professionals paying a fee to attend programs. Chicago has leveraged the annual licensing program for engineers to implement a mandatory one-day class on energy conservation code.

The City of Chicago works with the International Code Council (ICC) to provide a one-day training class on the Chicago Energy Conservation Code for registered professional engineers and architects. Drawings submitted to the Building Department that are required to comply with the energy code must be signed by a “Registered Energy Professional” (REP). To become a REP, a licensed professional must complete the ICC class.<sup>1</sup>

In San Francisco, the Pacific Energy Center (part of Pacific gas and Electric Company) offers educational programs (mostly focused on commercial buildings), free to the public, but targeting design, operation and construction professionals. These programs are primarily funded by a 3% surcharge on gas and electric bills. Significant additional resources come from university programs, union training, design professionals’ organizations and city-funded outreach.<sup>2</sup>

Portland’s Bureau of Planning and Sustainability has been working with other city bureaus to develop an implementation guide for the city’s green building policy.<sup>3</sup>

The AIA+2030 Professional Series in Seattle aims to help design professionals meet the energy efficiency goals of Seattle’s 2030 Challenge. Ten, 4-hour sessions offer strategies to reach 50% reduction in fossil fuel greenhouse gas emissions, with the goal of creating the next-generation of super-efficient buildings. Mostly technical in scope, the series also addresses project contract, relevant codes and management. Funding comes from the city of Seattle and Seattle City Light (a publicly-owned utility).<sup>4</sup>

### **LEED**

There are no LEED credits affiliated with this proposal.

### **Implementation & Market Availability**

There are no known implementation issues for this proposal.

## **ENDNOTES:**

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<sup>1</sup> Interview with Elizabeth Scanlan, Director of Code Development, Dept. of Buildings, City of Chicago, IL. (Jan. 6, 2010); and Interview with Javier Ceballos, Mechanical Engineer, Energy and Sustainable Business, Dept. of the Environment, City of Chicago, IL. (Jan. 6, 2010).

<sup>2</sup> Interview with Barry Hooper, Private Sector Green Building Program Specialist, Dept. of the Environment, City of San Francisco, CA. (Jan. 21, 2010).

<sup>3</sup> Interview with Vinh Mason, Policy Analyst, Bureau of Planning and Sustainability, City of Portland, OR. (Jan. 7, 2010).

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<sup>4</sup> Interview with Janet Stephenson, Programs Director, Sustainability and 2030 Initiatives, Seattle Chapter, American Institute of Architects (Sept. 29, 20009).