



# Guidelines for Capital Project Design & Implementation

## Northeastern University

*Second Edition Issued: January 2017*





Northeastern University

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## Guidelines for Capital Project Design & Implementation

Prepared by:

Campus Planning and Development

with **PGAL**

*Second Edition Issued: January 2017*

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**Northeastern  
University**  
Guidelines for  
Capital Project  
Design &  
Implementation

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## Northeastern University Mission

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### **MISSION AND OBJECTIVES**

Northeastern is a global, academic research university. Grounded in its signature cooperative education program, Northeastern today provides unprecedented experiential learning opportunities around the world. The university's rapidly growing research enterprise is strategically aligned with three national and global imperatives: health, security, and sustainability.

The university offers students opportunities for professional work, research, service, and global learning in the United States and 90 other countries. Northeastern offers a comprehensive range of undergraduate and graduate programs leading through doctorates in nine schools and colleges.

### **Campus Planning and Development Mission**

Campus Planning and Development (CP&D) supports the university's pursuit of excellence and innovation by developing the university's Capital Plan, land use, and real estate strategies. CP&D holds responsibility for the university's physical master plan which provides strategic guidance and campus wide standards. The group helps units across the university to ensure a productive stewardship of critical resources for physical space and design. Working in partnership with the Facilities Division, CP&D reviews project proposals, conducts assessments, and establishes parameters for scope, budget, and scheduling to realize the capital program.

## Facilities Division Mission

The Facilities Division's mission is to maintain and improve university facilities, grounds, and environment, and to supply appropriate services in the most efficient and economical manner; promoting a safe, clean, and aesthetically pleasing campus environment in support of Northeastern University's students, faculty, and staff.

This is accomplished by:

- ▶ Providing highly skilled trades and service persons and management staff that maintains utilities and buildings for the university.
- ▶ Providing professional project management services to the university for all facilities renovation, alteration, and new construction, including project planning, budgeting, scheduling, programming, design, estimating, bidding, procurement, construction, inspecting, furnishing, and occupying services.

The Facilities Division's mission supports the Northeastern University Mission and vision.

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# M

Northeastern  
University  
Mission

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# S

## Executive Summary

### Northeastern University Guidelines for Capital Project Design & Implementation

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#### EXECUTIVE SUMMARY

Campus Planning and Development (CP&D) at Northeastern University (NU) develops the university's Capital Plan, land use, and real estate strategies. As part of the management and implementation of the Capital Plan, CP&D solicits and contracts architectural and engineering services from professional consultants. In order to better define the preferences of the university and level of service expectations for capital projects, CP&D has generated a number of campus wide standards for project processes. This document, the Northeastern University Guidelines for Capital Project Design and Implementation, compiles the CP&D standards, and underscores Northeastern's values for innovation and design excellence.

The Northeastern University Guidelines for Capital Project Design and Implementation (Guidelines) is a document intended for use by architects, engineers, designers, consultants, and vendors (hereafter referred to as the consultant) to convey information regarding university preferences, practices, and purchases for design, construction, and related projects. The Guidelines shall also be used as a reference manual for procedural and technical requirements for a broad range of project types and varying scope.

The Northeastern University Design Guidelines and preferences shall be issued to all consultants as part of any request for proposals and shall be continuously available on the Facilities Division's website for all projects. The document shall be used as a tool for development of project contract and construction documents as well as construction practices and project goals.

Consultants remain fully responsible and liable for their work product regardless of the instructional direction of the Design Guidelines and / or university Project Manager and staff. If any part of these guidelines unintentionally conflict with current or future government regulations, for example but not limited to: the State Building Code, Americans with Disabilities Act, City of Boston Planning and Zoning, et al., the most restrictive requirements shall apply.

The Guidelines are organized by chapter. Each chapter expands upon the CP&D expectations for the primary design related subject matters that are common to most projects within the Capital Plan. The subjects and summary for purpose of each are described in the following paragraphs.

**1 Construction Policies and Procedures** - Chapter 1 outlines the level of service expectation standards for the contracted architectural and engineering consultant team. A typical capital project development process is outlined in terms of expected meetings and deliverables. The consultant shall use this information to strategize with the NU CP&D Project Manager (PM) for a schedule of milestones for the project. The PM will usher the consultant through any procession of meetings and information exchange that requires the involvement of NU departments and staff.

**2 Sustainable Design Standards** - Northeastern University has developed a strategy for incorporation of Sustainability and Green Building standards and practices across all aspects of university operations. This chapter helps to define the expectation for implementation of sustainable practices within capital projects. LEED Platinum certification has been determined as the NU goal (with LEED Gold minimum) for development of all projects. Chapter 2 also identifies a number of sustainable design standards that shall be examined and implemented appropriately as project scope allows.

**3 Accessibility Standards** - Chapter 3 identifies the university's expectation that accessibility remain of utmost importance within the design and implementation for capital projects. This includes both new construction and renovated facilities.

**4 Construction Codes and Requirements** - Chapter 4 states that all capital projects are subject to the codes and laws of the governing jurisdictions. This includes all building related architectural, engineering, utility, fire, and land development related regulations.

**5 Security Measures** - Security Measures refers to the concerns for the personal security of the students and staff of NU. The consultant is directed to engage the Northeastern University Campus Police Department and the office of Information Technology Services for design strategies that are preferred and manageable by NU for safety and security.

**6 Signage and Graphics** - The university has developed a significant protocol for the use of proprietary logos and branding for NU graphics. CP&D encourages individuality of project aesthetics; however consultation with the graphic standards is suggested in the development of facility identifying and informational signage.

**7 Architectural Design Standards** - There are a number of preferences that the university has developed for minimal standards for spatial requirements and materials. Chapter 7 describes expected levels of performance for building materials; preferences that are based on durability and maintainability for campus operations. The chapter also identifies minimal expectation of space utilization and identification.

**8 Building Systems Design and Performance Requirements** - The NU campus Facilities Department has developed extensive guidelines for preferred building systems for utilities and engineering requirements. Chapter 8 refers the consultant to confer with Facilities while contemplating new building systems or repairs and upgrades to existing systems and building envelopes. This includes guidelines for mechanical, electrical, plumbing, and fire protection systems.

**9 Building Materials and Aesthetics** - The university encourages a diverse architectural aesthetic to reflect the unique urban fabric of the campus location. New designs, additions, and renovations shall reflect this desire while still complementing the existing campus setting. Architectural designs shall be appropriate to the stature of the facility, respective of project budgets, and will be reviewed on a case by case basis by the NU PM.

**10 Furniture Fixture and Equipment** - Ensuring that furniture, fixtures, and equipment is carefully incorporated and considered for each project, Chapter 10 establishes a minimal expectation for quality and consistency of materials. The chapter also identifies purchasing programs through which the university can purchase quality items at appropriate costs. Consultants are encouraged to consider these programs and the suggested products at the earliest stages of design.

**11 Campus Open Space Standards** - As the campus has developed, campus open space has decreased significantly. Chapter 11 suggests that any open space be carefully planned to ensure that it is safe and identified appropriately. Open spaces shall be easily identified as recreational spaces, gathering spaces, formal entry areas, or service zones. This type of planning is increasingly more important as usable open space within an urban campus is at a premium.

The Northeastern University Guidelines for Capital Project Design and Implementation are intended to be utilized to inform the consultant to comply with the outlined processes and goals as required, and to meet or exceed design standards wherever possible. The Guideline is not intended to limit design expression. Exceptions will be reviewed by project Planners, Design Reviewer(s), and Project Managers





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## Construction Policies & Procedures

### Northeastern University Guidelines for Capital Project Design & Implementation

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#### 1.0 ABOUT THE NU GUIDELINES

This document is intended to describe in a comprehensive manner the guidelines pertaining to implementation of the university's capital program. The NU project team is responsible for confirming with consultants how much each project can best meet these guidelines. The Guidelines are intended as a reference document only and are not a contract document between the university and any consultant.

#### 1.1 TERMS AND DEFINITIONS

**A / E Consultant (consultant):** Consultant shall refer to any architect, engineer, designer, landscape architect, provider of professional services, contractor and vendor that is engaged by and contracted with the university to provide professional services related to the scope of university facilities design and construction and / or purchasing of goods and services for the improvement of university facilities.

**As-Built** - Drawings are prepared at the end of a construction project by the contractor. They show, in red ink, on-site changes to the original construction documents. These drawings are coordinated with changes made throughout the construction process under direction from the design consultants and NU PM.

**Basis of Design:** A product or process identified to provide a level of quality, performance, assembly, design expectations, and operational requirements expected

for the particular use described therein. Such items shall be considered and alternates provided on a case by case basis by each project's university Project Manager.

**Building Information Modeling (BIM):** An intelligent computerized 3-D model-based process that provides insight on integration of building systems during planning and, design for the benefit of construction and management of buildings and infrastructure.

**Computer Aided Design and Drafting (CADD):** Software developed to improve the productivity of the designer, the quality of the design, and the levels of communication throughout a building project through better illustrated documentation.

**Contracted Milestones (milestones):** Agreed upon dates or points within the design and construction process at which the consultant must deliver progress or completed documentation of the project to the NU Project Manager, Planner or other identified NU staff. These milestones, as well as project schedule and dates, will be defined and agreed upon in each consultant's binding legal contract with the university. The list below is an example of typical milestones for NU projects.

<i><b>Phase</b></i>	<i><b>% of Project Completion</b></i>
<i>Concept Design / Programming</i>	15%
<i>Schematic Design</i>	30%
<i>Design Development</i>	60%
<i>Construction Documents</i>	90%
<i>Bid Set</i>	
<i>Permit Set</i>	
<i>Final Documents</i>	100%
<i>Construction Administration</i>	
<i>Building Commissioning</i>	
<i>Final Close-out</i>	

**Deliverable(s):** Any reports, studies, analyses, drawings, and specifications submitted to the university at contracted milestones throughout the design and construction process.

**Documents:** Contract Documents including all drawings and specifications provided during all project phases for design and construction projects. This includes contract bid documents used for construction pricing and build-out.

**Furniture Fixtures and Equipment (FF&E):** Movable furniture, fixtures, or other equipment that have no permanent connection to the structure of a building or utilities.

**Information Technology Services (ITS):** Northeastern University department that is the central provider of technology infrastructure, services, and applications for more than 30,000 students, faculty, and staff at Northeastern University.

**Integrated Design:** Collaborative process involving all disciplines and project team members from the start of the project to examine the project within its entirety, producing a more efficient end product to fulfill the required program. This design approach examines the interaction of all building systems with the goal of producing a sustainably responsible facility.

**Life-Cycle Cost Analysis:** Analysis method that estimates overall costs and performance of project systems alternatives with the goal of selecting the design that

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provides the lowest cost of ownership that meets the proposed program. A Life-Cycle Cost Analysis is to be performed in accordance with the project goals outlined within the Guidelines.

**Memorandum of Understanding (MOU):** A signed agreement between two entities for a specific course of action. NU utilizes the MOU agreement internally between a particular university department and the office of Campus Planning and Development to agree upon program and an estimated budget in order for projects to proceed.

**NU:** Northeastern University

**Planner:** Northeastern University Capital Planning and Development Project Planner

**PM:** Northeastern University Facilities Design and Construction Project Manager

**Record Drawings:** Record drawings are prepared by the architect and reflect on-site changes the contractor noted in the as-built drawings. They are often compiled as a set of on-site changes made for the owner per the owner / architect contract.

**Reflected Ceiling Plan (RCP):** Type of documentation used to convey messaging about equipment and fixtures located within the ceiling of a building that are visible from the floor of that building.

**Request For Information (RFI):** A standard business acronym for the process of requesting additional information in a documented and legally binding form. In the construction industry, said request is initiated by the contractor to the design consultant during construction administration.

**University:** Northeastern University

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### 1.2 DOCUMENTS

- ▶ Documents shall include drawings and specifications and shall conform to the most recent version of AutoCAD or Revit as required.
- ▶ Construction documents shall conform with NU drafting and graphics standards, currently the [\*National CAD Standards - V6\*](#).
- ▶ All project specifications shall be provided in PDF format (preferred) or the most current version of Microsoft Word format.
- ▶ Contract bid documents are to be dated with the actual date of final submission incorporating the review comments by the Project Team and Stakeholders.
- ▶ *e-Builder* software is used for all project document management. A formal document structure must be adhered to. Facilities Project manager will provide all project consultants with user credentials and training on e-Builder system. More detailed information can be found here: [\*Facilities Division - Project Controls\*](#)
- ▶ Contract Documents shall follow conventional organizational standards and be organized by discipline in a manner where, if necessary for project phasing, the project may be bid or constructed in multiple packages.

## 1.3 PROCESSES AND PROCEDURES

This Guideline is not intended to stifle creativity but rather create a framework in which each university project is delivered. The sections below outline multiple factors that are considered essential to the process and deliverables expected by the university at each contracted project milestone. This list is organized by the suggested project phases outlined in the terms and definitions above. These are minimal project expectations.

Each consultant shall examine their contracted project as they see fit to meet the program and budgetary needs of the specific project. A complete outline of the consultant project approach and involvement shall be determined with the university Project Manager as part of project kick-off.

### 1.3.1 Concept Design / Programming

- ▶ Kick-off and Program review session with NU Planner, PM, and project team.
- ▶ Acknowledgment of review of and intent to comply with all university Guidelines, including Design Guidelines for Capital Project Design and Implementation, Sustainability Guidelines, Engineering and Systems Design Guidelines, Campus Master Plan, and other university standards as provided with signed NU contract.
- ▶ Establish schedule of project status updates from consultant team to NU PM to maintain expected budget and schedule as project progresses. This schedule may be appropriate through all phases of project implementation or may be re-evaluated with each milestone phase.
- ▶ Meetings / Charrettes with NU end users such as appropriate NU academic departments, faculty and staff and other project stakeholders. Number of meetings to be determined on a case by case basis.
- ▶ Meetings with appropriate jurisdictional agencies to ensure full cooperation / compliance with appropriate community plans and applicable codes. Involve NU PM as required.
- ▶ Support NU Campus Planning and Development requirements for materials for the project MOU documentation.
- ▶ Meet with university Facilities Operations Departments to understand university utility demands and constraints as well as systems integration throughout the campus.
- ▶ Meet with university Facilities Operations Departments to understand long term maintenance and operations goals. This shall include a lessons learned exchange of information.
- ▶ Meet with NUPD for expectations of project security systems and site related design to ensure easy access for NUPD and maximize ability to keep faculty and students safe in and around campus facilities.
- ▶ Determine level of support expected to assist NU with marketing, community

outreach, or fundraising materials such as renderings, electronic or printed materials, and physical presence of consultant team at events to ensure project support and funding.

- ▶ LEED Certification determination. This discussion shall include initial reactions, assumptions, intention of whether the proposed program shall be able to meet with the NU expectation that all projects be LEED Platinum Certified whenever possible. (LEED Gold minimum)
- ▶ Meet with and engage NU Commissioning Manager, as coordinated by the PM, to determine commissioning goals and process.
- ▶ Deliverable reports / drawings / specifications during this phase to include the following, as applicable:
  - » *Budget assessment and project cost estimate based on reviewed and agreed upon programmatic expectations.*
  - » *Accessibility analysis of proposed project, especially if renovating an existing facility. Ensure compliance with current code requirements or confirm and provide approved waiver of code due to age or function of project.*
  - » *Site analysis showing project integration with campus master plan, environmental benefits and improvements. Include analysis of ability to service project as required for trash collection and pick-up, loading and deliveries, fire department and emergency vehicle access.*
  - » *Site analysis in relation to planning and zoning requirements of site relating to campus master plan and City of Boston, Boston Redevelopment Authority and other governing agency regulations.*
  - » *Traffic impact study for project implementation and construction as well as final conditions of project. This shall include a parking study and analysis as well as documentation that the project complies with safe accessibility to multiple modes of public transportation available nearby.*
  - » *Life safety analysis of initial concept design.*
  - » *Sustainability Goals analysis shall include integrated project design intent with decision to pursue selection of particular building systems for further analysis as project design progresses.*
  - » *Life Cycle Cost Analysis expectations based on selection of particular building systems for further analysis as project design progresses. This information to inform initial cost estimates.*
  - » *LEED Certification and scorecard analysis based on the expectation of project to meet LEED criteria.*
  - » *Deliverable and design review presentation of conceptual project plans, elevations, sections, models, renderings, and other visual and graphic materials for review by NU Project Team and project stakeholders to determine course and expectations for project progression.*

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- » *Final Deliverable of outline specifications if available.*
- » *Final Deliverable of concept design reports summarizing findings from meetings to date as acceptance of project decisions to date.*

### 1.3.2 Schematic Design (SD)

- ▶ Continue meetings with project stakeholders to ensure programmatic needs are integrated into final design.
- ▶ Perform detailed check on project program and projected costs in compliance with the expectations outlined in the MOU.
- ▶ Begin integration of NU CADD and BIM standards in document development.
- ▶ Begin in-depth review of site analysis for site work and site testing as it pertains to existing site surveys and newly commissioned surveys, geotechnical surveys and testing, site utilities, and other conditions that may have impact on the project.
- ▶ Begin in-depth review of engineering systems requirements to ensure compliance with NU standards and with sustainability goals located here: [\*NU MEP Design Standards\*](#)
- ▶ Refine diagrams and other analysis materials from concept design to develop actual floor plans and drawings for final construction documents.
- ▶ Meet with and engage NU Commissioning Manager, as coordinated by the PM, to determine commissioning goals and process.
- ▶ Begin development of interior design schemes and materials to better inform the cost estimate. This includes initial discussions with end-users for preferences and expectations.
- ▶ Engage end users and stakeholders to determine needs and expectations for FF&E to ensure program functions at project completion.
- ▶ Engage NU ITS Department to [plan for the best way to integrate AV technology, data cabling, ceilings, infrastructure etc. Evaluate requirements shared by ITS in coordination with space program and budget.](#)
- ▶ [Engage the Northeastern University Police Department \(NUPD\) to coordinate technology and security requirements.](#)
- ▶ Continue development of sustainable design elements to meet expectations and comply with NU guidelines.
- ▶ Develop preliminary Commissioning Plan for project completion.
- ▶ Schematic Design documents to include but not be limited to:
  - » *Code Analysis*
  - » *Civil Site Plans*
  - » *Architectural Site Plans*

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- » *Floor Plans*
- » *Elevations*
- » *Vertical Building Sections*
- » *Illustrative views, models, etc. as required to convey design progress*
- » *LEED Scorecard to reflect current project assumptions*
- » *Revised project schedule*
- » *Phasing and implementation analysis*

### 1.3.3 Design Development (DD)

- ▶ Continue review of project scope and program with consultant, NU PM, and project stake holders.
- ▶ Perform detailed check on project program and projected costs in compliance with the expectations outlined in the MOU.
- ▶ Confirm that project schedule and budget are currently on-target.
- ▶ Revise and confirm code compliance with current design scheme and systems assumptions.
- ▶ Begin development of project signage and graphics. Ensure compliance with NU standards for use and placement of NU logo and other trademarks. NU branding guidelines are located here: [Branding and Logo Guidelines](#)
- ▶ Coordinate room numbering and naming with NU Project Manager, Campus Planning and Development, and Spatial Systems Manager for compliance with university space standards. Develop project schedules based on approved system for numbering and naming.
- ▶ Ensure that room names are easily identifiable and relate to specific program needs.
- ▶ Develop project phasing to determine any possible needs for development of separate bid packages in order to maintain schedule and compliance.
- ▶ Determine that design and phasing will minimize interruption to adjacent facilities and campus operations during implementation and construction.
- ▶ Determine schedule for submission of permit and other review processes by government agencies for all disciplines in order to ensure adherence to project schedule.
- ▶ Meet with and engage NU Commissioning Manager, as coordinated by the PM, to determine commissioning goals and process.
- ▶ Meet with NU EH&S, as coordinated by the PM, for expectations of project on environmental health and occupational safety controls to keep faculty, staff, and students safe from potential impact of project activities.
- ▶ Make final determination of building systems to perform updated Life Cycle

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Cost Analysis and move forward with project documents.

- ▶ Register Project for LEED Certification. Refer to Section 2.2 for NU LEED and Sustainable Design requirements and expectations.
- ▶ Continue development of landscape architecture or urban site design as integrated part of project design. Ensure compliance with water usage and stormwater management requirements (when applicable).
- ▶ Prior to proceeding with design ideas, give a Design Review Presentation to present current concepts and budget to the university.
- ▶ Determine final scheme for interior design components and general FF&E items to ensure timely integration into contract documents for updated cost estimate as part of DD submittal.
- ▶ Review all unreconciled budgetary items with NU PM.
- ▶ Determine criteria for approval to move project forward to construction document phase.
- ▶ Ensure timely review and response to comments received on DD package from NU PM.
- ▶ Design Development submittal materials to include but not be limited to:
  - » *Revised drawings including further development of documentation from all project team disciplines. Drawings to include a minimum of:*
    - *Architecture*
      - Floor Plans
      - RCP's
      - Life Safety Plans
      - Building Elevations
      - Building Sections
      - Finish Schedules
      - Door Schedules
    - *Structure*
      - Foundation Plans
      - Framing Plans
      - Typical Details
    - *Mechanical / Electrical / Plumbing / Fire Protection*
      - Mechanical Duct Layout
      - Large Scale Plans of Mechanical Rooms
      - Electrical Plans
        - Power
        - Lighting
        - Special Systems
        - One-line Diagrams
      - Plumbing / Fire Protection
        - Floor Plans
        - Riser Diagrams

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- *Civil*
    - Site Survey or Plat of Survey
    - Existing Conditions
    - Site Layout Plan
    - Utility Plan
    - Grading and Stormwater Drainage Plan
    - Stormwater Quality Basin Plan
    - Erosion Control Plan
  - *Landscape Architecture / Urban Design*
    - Landscape and Hardscape plans
    - Irrigation Plans
    - Landscape Details
- » *Revised specifications including all general conditions and up to date project systems and materials assumptions and selections.*
  - » *LEED Scorecard showing refined assumption of project's ability to meet expectations within current budget.*
  - » *Revised project schedule showing all submittal and review dates for all disciplines.*
  - » *Phasing plans as needed if determined that project will be implemented in multiple phases.*
  - » *Revised up to date cost estimate.*

### 1.3.4 Construction Documents (CD)

- ▶ Review document procedures and expectations with NU CADD Manager and Facilities Department to ensure compliance with naming conventions and layering and usefulness of submitted documents for building maintenance. The university utilizes the following CADD standard: [\*National CAD Standards - V6\*](#)
- ▶ Review any outstanding unreconciled budget items with NU PM.
- ▶ Hold final meetings with NU PM and all NU end-users and stakeholders to ensure program requirements are met.
- ▶ Integrate any final program requests and changes in a timely manner. Inform NU PM of impact to project budget and schedule.
- ▶ Determine actual needs and costs for any last minute or design impacting program changes.
- ▶ Perform detailed check on project program and projected costs in compliance with the expectations outlined in the MOU.
- ▶ Continue to assist NU with any presentation materials needed for project fundraising, marketing, and community awareness processes.
- ▶ Meet with and engage NU Commissioning Manager, as coordinated by the PM, to determine commissioning goals and process.

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- ▶ Prepare documents for all permitting submittals including all required NU and governmental applications as required.
- ▶ Establish level of support expected for consultant during bidding and permitting phases of final construction documents.
- ▶ Construction Document submittals during this phase may include but are not limited to:
  - » *90% or greater construction drawings and specifications.*
  - » *Revised LEED Scorecard and assumptions.*
  - » *Final report on integration and implementation of sustainable design strategies. Coordinate with NU PM and other staff to ensure compliance with all NU Sustainable Design Guidelines and Programs.*
  - » *Submit estimated construction schedule based on project assumptions.*
  - » *Submit revised cost estimate for comparison to proposed bids.*
- ▶ Bid Set
  - » *Consultant shall support NU PM during bidding process.*
  - » *Consultant shall attend any pre-bid conferences and respond as required to any requests for information during the bidding process.*
  - » *Consultant shall evaluate any proposed alternates and substitutions.*
  - » *Consultant shall attend all bid openings as required by the NU PM and shall assist with any bid evaluation and determination of final scope and implementation approach.*
- ▶ Construction Documents for Permit
  - » *Consultant shall manage any and all permitting and approval processes as necessary.*
  - » *Consultant shall perform due diligence and provide all necessary documentation required for permitting and approvals process.*
  - » *Consultant shall participate and manage process of response to permit review comments and resubmit as needed in coordination with NU and any selected construction professionals.*

### 1.3.5 Construction Administration

- ▶ Consultant shall attend any pre-construction meetings.
- ▶ Consultant and contractor to determine document review and submittal processes to ensure compliance with project schedule.
- ▶ Support and engage in discussions for construction innovation and opportunities or cost savings during implementation.
- ▶ Update and provide any and all supporting documentation for revised drawings, addenda, bulletins, etc. as well as develop conformed set of contract documents.
- ▶ Attend regular site meetings as established at beginning of project process or as required to meet established schedule.

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- ▶ Consultant shall provide NU PM with field reports and documentation on observations.
- ▶ Respond to RFIs and submittal reviews within a timely manner. Provide additional sketches as required.
- ▶ Review and coordinate with contractor's proposed changes, any change orders, and scope changes.
- ▶ Punch list preparation and inspection.
- ▶ Document project for substantial completion with NU PM and contractor.

### 1.3.6 Commissioning

- ▶ Support project or university selected commissioning agent.

### 1.3.7 Project Close-Out

- ▶ [For more in depth information, please refer to our NU Requirements for Project Close-Out Deliverables.](#)
- ▶ Review submitted Operations and Maintenance manuals for final training and submittal to NU Facilities.
- ▶ Provide final fire egress diagrams with appropriate display system as needed.
- ▶ Provide final sustainable design assessment, final LEED Scorecard and manage submittal process for LEED Certification.
- ▶ Provide NU with final as-built documents in required format in both print and electronic submittal.
- ▶ Schedule any photographic documentation of new projects prior to final occupancy of facility by student body.

### 1.4 NU Global Regional Graduate Campus Locations

- ▶ Respect and encourage the aesthetic and engineering design goals and implementation practices of the host communities for NU Global locations.
- ▶ Where no design requirements exist for NU Global Regional Graduate Campus locations, the goals and practices outlines within the NU Guidelines for Capital Project Design and Implementation as well as the University Guidelines of Sustainable Practices and Operations Guidelines shall provide the basis for design for all NU capital improvement and construction projects.



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# 2

## Sustainable Design Standards

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#### 2.0 SUSTAINABLE DESIGN STANDARDS AND GOALS

Sustainability seeks to reduce or completely eliminate negative impacts on the environment through principles and practices that reduce consumption of non-renewable energy, and minimize waste and negative impact to the environment.

A Green Building is a facility that has been designed to be environmentally responsible throughout the lifetime of the structure. This includes initial site selection, design choices, construction methods, building operation and maintenance, as well as the building's eventual renovation or demolition.

Sustainability is applied through design to create Green Buildings. This is accomplished through various practices that include principles with the intent to:

- ▶ optimize site potential
- ▶ minimize non-renewable energy consumption
- ▶ [restore and rejuvenate the local ecosystem](#)
- ▶ use environmentally preferable products
- ▶ protect and conserve water
- ▶ enhance indoor environmental quality
- ▶ optimize operational and maintenance practices
- ▶ enhance building performance over the life of the facility

Northeastern University has developed a strategy for incorporation of Sustainability, Green Building, and [Green Sites](#) standards and practices across all aspects of university operations. NU Campus Planning and Development has developed the following program to further the university's ability to meet the sustainability goals.

## 2.1 SUSTAINABLE DESIGN STANDARDS

Northeastern University has been rated as one of the top "[Green Colleges](#)" in the nation. To support this effort, the university has adopted a comprehensive sustainable design policy for all university facilities, and projects.

For all university programs, existing and new facilities, the university strives to conserve natural resources, minimize environmental impact, reduce or eliminate toxins, support recycling programs and recycled material usage, and create an environmentally responsible institution that improves the safety and wellbeing for all students, faculty, and staff.

Northeastern University Sustainable Design practices shall be conveyed and executed through adherence to the following programs and standards.

### 2.1.1 Northeastern University Sustainable Practices and Operations Guidelines

- Comply with this living document which outlines the goals and procedures for all university departments, vendors and purchases for incorporation of sustainable design measures into daily program operations. All new construction, renovations, and facilities related projects shall comply with the document that is located here: [Sustainable Practices and Operations Guidelines](#)

**2.1.2 LEED** - (Leadership in Energy Efficient Design) Green building certification program as administered by the U. S. Green Building Council. Comply with requirements for the most current version of the LEED program. [LEED Registration](#)

**2.1.3 SITES** - (Sustainable Sites Initiative) Administered by Green Building Certification Inc. Comply with the minimum requirements for the most current version of the SITES program. [Sites Certification and Registration](#).

**2.1.4 Massachusetts LEED Plus Green Building Standard** - Program established by the Commonwealth of Massachusetts requiring that all new construction and major renovation projects for state buildings should meet and exceed the minimum energy code efficiency standards by 20%. Although not bound by this code as a private entity, Northeastern University agrees to meet these standards as a measure of maximizing the efficiency of all university facilities.

**2.1.5 Mass Save energy program** - Mass Save is an initiative sponsored by Massachusetts' gas and electric utilities and energy efficiency service providers to provide a wide range of services, incentives, trainings, and information promoting energy efficiency that help residents and businesses manage energy use and related costs. The program offers incentives towards energy-efficient lighting and controls, HVAC systems, motors, variable speed drives, and compressed air equipment. Projects shall apply for this program if applicable.

**2.1.6 Green Garage Certification** - Parking garage projects are not eligible for LEED Certification with the Green Building Certification Institute (GBCI), but can become certified through programs such as The Green Garage Certification program of the Green Garage Council. Developed by experts from a range of fields, including: parking, architecture, engineering, technology, and academia;

the program assesses 50 elements of sustainability, including management practices that maximize performance while minimizing waste; alternate modes of transportation and community engagement; and efficient and sustainable technology and design. Projects shall apply for this program if applicable.

**2.1.7** Northeastern University is a co-signer of the American College and University Climate Commitment, and all initiatives and actions will comply with that commitment: [\*Presidential Climate Commitment\*](#)

## **2.2. SUSTAINABLE DESIGN GOALS**

**2.2.1** All new university building projects and major renovation projects will strive to meet the goals of LEED Platinum with Gold certification as a minimum unless otherwise directed by the NU Planner and Project Management Team.

**2.2.2** When applicable, all new university building projects, major renovation projects, and site renovation projects will strive to meet the minimum requirements of SITES unless otherwise directed by the NU Planner and Project Management Team.

**2.2.2** Meeting and exceeding the American Society of Heating and Air-Conditioning Engineers (ASHRAE) standards and guidelines, as well as all applicable energy codes.

**2.2.3** Green Garage Certification for any new parking structure, major renovation, or reconfiguration of existing parking structures.

**2.2.4** The university has established a series of categories to assist with determination of sustainable design efforts incorporated into projects based on size, scope and available funding. Refer to Table 2.0 below for minimal requirements.

**2.2.5** A / E Consultants shall assist the university with evaluating, documenting, and complying with the desired green building design goals as applicable to each project designated by the university to pursue sustainability.

**2.2.6** A / E Consultants shall, with the university, commit to sustainability and LEED pursuits at the inception of projects to ensure proper integration through all processes and deliverables of the project.

**2.2.7** A / E Consultants shall assist the university with evaluation building design as it relates to avoiding impacts of storm surges and future sea-level rise.

**2.2.8** A / E Consultants shall schedule meetings with NU and all necessary sub-consultants to facilitate successful compliance with the applicable green building design goals. The Consultant's submittal shall include the initial cost and the return on investment (when applicable) for each green building design feature. The

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# 2

## Sustainable Design Standards

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**TABLE 2.0 NU CAPITAL PROJECT SUSTAINABILITY PROGRAM REQUIREMENTS**

CATEGORY	DEFINITION / MINIMUM THRESHOLD	MINIMAL REQUIREMENTS FOR NU SUSTAINABLE DESIGN PROGRAM
<b>A</b>	<b>New Building Construction / Major Building Renovation</b>	<ul style="list-style-type: none"> <li>▶ Strive for LEED Platinum (Gold min.) Certification - Achieve all Regional Priority Credits, Pursue Innovation Credits</li> <li>▶ Deliver via Integrative Design Process</li> <li>▶ Perform Life Cycle Cost Analyses and Energy Modeling at all contracted project delivery milestones</li> <li>▶ Comply with performance requirements of Massachusetts LEED Plus Guidelines</li> <li>▶ Provide university with all O&amp;M close-out documentation and training</li> <li>▶ Refer to and comply with NU Sustainable Design Practices and Operations Guidelines</li> </ul>
<b>B</b>	<p><b>New Construction / Addition / Renovation</b></p> <ul style="list-style-type: none"> <li>▶ Projects where the addition is greater than 10,000SF</li> <li>▶ Projects less than \$5 Million</li> <li>▶ Any change to building envelope</li> <li>▶ Interior changes that create atriums and / or significant impact and reconfiguration of MEP systems</li> </ul>	<ul style="list-style-type: none"> <li>▶ Strive to meet requirements for LEED Platinum Certification                             <ul style="list-style-type: none"> <li>» Pursue LEED Certification if program dictates and budget allows. To be determined by NU Project Manager.</li> <li>» Achieve all Regional Priority Credits. Pursue ideas of Innovation Credits as part of program</li> </ul> </li> <li>▶ Deliver through Integrative Design Process</li> <li>▶ Perform Life Cycle Cost Analyses and Energy Modeling at all contracted project delivery milestones as required in conjunction with building envelope changes</li> <li>▶ Comply with performance requirements of Massachusetts LEED Plus Guidelines</li> <li>▶ Provide university with all O&amp;M close-out documentation and training</li> <li>▶ Refer to and comply with NU Sustainable Design Practices and Operations Guidelines</li> </ul>
<b>C</b>	<b>Minor Renovations / Systems and FF&amp;E Upgrades</b>	<ul style="list-style-type: none"> <li>▶ Meet requirements of LEED, MA LEEDplus, ASHRAE for energy usage and water consumption reductions for all new systems and replacement components of existing systems</li> <li>▶ Provide university with all O&amp;M close-out documentation and training</li> <li>▶ Refer to and comply with NU Sustainable Design Practices and Operations Guidelines</li> </ul>
<b>D</b>	<p><b>Non Building Related Projects</b></p> <ul style="list-style-type: none"> <li>▶ Site Only Projects</li> <li>▶ Landscaping / Sports</li> <li>▶ Irrigation</li> <li>▶ Surface Parking Lot / loading / other paved site projects</li> </ul>	<ul style="list-style-type: none"> <li>▶ Strive to meet requirements for LEED v4 Platinum Certifiable Project (Gold min)                             <ul style="list-style-type: none"> <li>» Pursue LEED Certification if program dictates and budget allows. To be determined by NU Project Manager.</li> <li>» Achieve all Regional Priority Credits. Pursue ideas of Innovation Credits as part of program</li> </ul> </li> <li>▶ Deliver through Integrative Design Process</li> <li>▶ Comply with performance requirements of Massachusetts LEED Plus Guidelines</li> <li>▶ Provide university with all O&amp;M close-out documentation and training where applicable</li> <li>▶ Refer to and comply with NU Sustainable Design Practices and Operations Guidelines</li> </ul>

Consultant shall prepare and submit all calculations necessary to demonstrate compliance with the desired reductions in building energy and water consumption.

**2.2.9** Should NU determine that it wants a project to pursue LEED Certification; the Consultant shall assist the Owner with obtaining the LEED certification from the U.S. Green Building Council. The Consultant shall lead the process including all necessary sub-consultants, and LEED specialty consultants, as necessary to facilitate successful completion of the certification process; including meetings during the construction administration phase and during the warranty period.

**2.2.10** A / E Consultant and all applicable Contractors and Trades shall assist the university in obtaining all available rebates or subsidies to make proposed sustainable design endeavors more economically viable for each project.

**2.2.11** Refer to Northeastern University building systems and engineering design standards for additional direction for energy and water usage compliance. The document can be located here: [NU MEP Design Standards - Web Page](#)

**2.2.12** Respect and encourage the LEED and sustainable design goals of the host communities for NU Global Regional Graduate Campus locations outside of the NU flagship Boston campus.

**2.2.13** Where no LEED or sustainable design goals exist for NU Global Regional Graduate Campus locations, the goals and practices outlines within the NU Guidelines for Capital Project Design and Implementation as well as the University Guidelines of Sustainable Practices and Operations Guidelines shall provide the basis for design for all NU capital improvement and construction projects.

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# 2

## Sustainable Design Standards

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### **2.3. RECYCLING**

**2.3.1** Conform to all requirements established in University Guidelines for Sustainable Practices located here: [Sustainable Practices and Operations Guidelines](#)

**2.3.2.** Provide ample space for recycling containers and service areas within newly programmed spaces.

**2.3.3.** Signage and Graphics - Incorporate signage and graphics for recycling program awareness as part of the graphics package for new construction and renovation projects.

### **2.4. PREFERRED METHODS / PROGRAMS / VENDORS**

#### **2.4.1. Due Diligence**

- ▶ Refer to Northeastern University Guidelines for Sustainable Practices for directions and preferences for Programs and Vendors.



- ▶ As part of a new project, include due diligence of current university programs, vendors and standards to ensure compliance and accessibility for servicing of programs in terms of space or clearance requirements within building spaces or access to buildings by service vehicles in areas just outside of buildings.
- ▶ Ensure compliance with all university programs for purchasing of sustainable products and support of companies that support sustainable processes.



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# 3

## Construction Accessibility Standards

### Northeastern University Guidelines for Capital Project Design & Implementation

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#### **3.0 ACCESSIBILITY DESIGN STANDARDS**

##### **3.1 UNIVERSITY GOALS**

All exterior and interior spaces will be designed in accordance with the most current guidelines of the American with Disabilities Act (ADA), the Massachusetts Architectural Access Board Rules and Regulations (521 CMR), (or applicable state authority for campuses outside of Massachusetts), and the local zoning codes.

##### **3.2 REPRESENTATIVE CODES**

Conform to ADA standards for Accessible Design, ANSI, and 521 CMR.

##### **3.3 ENGAGE WITH CAMPUS PLANNING AND DEVELOPMENT**

The Department of Campus Planning and Development has gathered data on accessibility barriers in many campus locations and is developing a plan for barrier removal. At the start of a project, please coordinate with Campus Planning to understand the accessibility plan for your project area or the vicinity.

### 3.4 AVOID COMMON DESIGN ERRORS

To ensure that the constructed space meets all applicable codes, designers are advised to build minor tolerances for accessibility requirements into the design document. For example, do not design to the maximum height defined in the code, but design to half an inch below the maximum height.

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# 3

## Construction Accessibility Standards

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# 4

## Codes & Requirements

### Northeastern University Guidelines for Capital Project Design & Implementation

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#### 4.0 CODES AND REQUIREMENTS

##### 4.1 ENVIRONMENTAL REGULATIONS AND CODES

4.1.1 All NU construction projects are subject to all permitting processes and code requirements of the United States Federal Government, Commonwealth of Massachusetts, Suffolk County and the City of Boston as well as the local jurisdiction for regional campus locations.

##### 4.1.2 Building Codes

- ▶ The following is a minimal list of codes expected to be applicable to all buildings and construction projects:
  - » ***Building***
  - » ***Fire Prevention***
  - » ***Accessibility***
  - » ***Electrical***
  - » ***Elevator***
  - » ***Mechanical***
  - » ***Plumbing***

- ▶ Ensure compliance with the most current edition and amendments to the codes.
- ▶ Ensure compliance with all national standards and regulations including those noted above.
- ▶ Ensure compliance with jurisdictional amendments to codes.
- ▶ Where conflicts exist between code requirements, the more stringent code shall govern.
- ▶ **Code Summary** - Full code analysis relevant to specific program to be provided with each new project as part of the Schematic Design phase deliverable.
- ▶ **Exiting Plans and Analysis** - Full diagrammatic analysis in the documents illustrating occupant loads, travel distances, and exiting capacities. Similar document will be prepared for exiting signage at stairs and elevators.

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# 4

## Codes & Requirements

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# 5

## Security Measures

### Northeastern University Guidelines for Capital Project Design & Implementation

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#### 5.0 SECURITY

##### 5.1 SAFETY AND EQUIPMENT GOALS

5.1.1 Engage with the Northeastern University Police Department (NUPD) [during the Schematic Design Process](#) to coordinate technology and security requirements for each project.

5.1.2 Landscaping and building features should be designed such that there are no nooks or areas where someone can hide, and pedestrian safety is maximized at all times.

##### 5.2 TECHNOLOGY INTERFACE - DATA / TELECOM / CCTV / DOOR AND BUILDING ACCESS

5.2.1 Provide security cameras on both exterior site areas and interior public spaces. Location of cameras shall be coordinated with NUPD, through the Owner, to address security, privacy, and surveillance issues.

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# 5

## Security Measures

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### 5.3 CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

#### 5.3.1 Design with CPTED principles to enhance student, faculty, and staff safety

- ▶ Natural surveillance
  - » *Placement of physical features and activities areas to maximize visibility and foster positive social interaction among legitimate users of private and public space.*
  - » *Support NUPD ITS and security systems.*
- ▶ Natural territorial reinforcement
  - » *Promote social control through increased definition of space and improved proprietary concern.*
  - » *Create a sense of owned space, an environment where "strangers" or "intruders" stand out and are more easily identified.*
  - » *Use buildings, fences, pavement, signs, lighting and landscape to express ownership and define public, semi-public and private space so that natural territorial reinforcement occurs.*
- ▶ Maintenance
  - » *Ensure ease of facility maintenance to prevent appearance of abandoned facilities and provide ability for natural surveillance.*
  - » *Increase usability of space by NU programs.*
- ▶ Activity Support
  - » *Placement of signage, site furnishings, and lighting should encourage use of space by NU students and organized programs.*

### 5.4 LIGHTING

- 5.4.1 Design adequate lighting and visibility for pedestrians to accommodate their safety.

### 5.5. HARDWARE

- 5.5.1 The A / E consultant shall coordinate with and conform to the University maintained preferred hardware product and installation specification. Such requirements shall be provided by the university Project Manager for each project as required.
- 5.5.2 Hardware selections shall be coordinated with NU Facilities Department and NUPD as required for bio-related or electronic / computer / card access systems.
- 5.5.3 Hardware selections shall be keyed per NU Facilities direction as reviewed and approved during construction submittal process. Duplicate keys / redundant access to be provided upon direction as well.



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# 6

## Signage & Graphics

### Northeastern University Guidelines for Capital Project Design & Implementation

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#### 6.0 SIGNAGE AND GRAPHICS

##### 6.1 BRANDING AND LOGO USAGE

6.1.1 Governing agency - Northeastern University Department of Marketing and Communications

- ▶ Guidelines - governs use, image, and placement of NU logo and branding: [\*Branding and Logo Guidelines\*](#)

##### 6.2 WAYFINDING / INFORMATIONAL / IDENTIFICATION

6.2.1 Campus wayfinding (exterior signage) should be coordinated with the Northeastern University Department of Marketing and Communications [as well as the Northeastern University Sign Shop](#).

6.2.2 Campus wayfinding shall not conflict with wayfinding signage of the City of Boston or other code / regulatory agency signage.

6.2.3 A wayfinding conceptual plan shall be presented as part of the design development phase submittal and review. Construction document submittals must



include wayfinding elements to accomplish the approved wayfinding plan.

### 6.3. SIGNAGE

#### 6.3.1 Exterior Building Identification Signage

- ▶ Coordinate all exterior building identification with NU Facilities for accurate name, building number, address, and preferred sign location.

#### 6.3.2 Building Directories

- ▶ Provide main directory near the main entrance or entrances of the building - primarily at major public access points.
- ▶ New Construction - To be digital / electronic signage
- ▶ Renovations
  - » *To be digital / electronic where possible*
  - » *Traditional building directories in existing buildings to be designed / manufactured and easily accessible to allow for ease of editing by the university sign shop.*

#### 6.3.3 Interior Building Informational and Wayfinding Signage

- ▶ Informational and wayfinding signage design for building interiors to be coordinated so as to be designed in a style complementary to the selected building interior design scheme as well as conform to university standards and guidelines located at [Branding and Logo Guidelines](#)
- ▶ All code required, regulatory, and life safety signage to be coordinated and provided as part of building contract documents for all projects.
- ▶ Provide all code required life safety signage to include indication of emergency egress for street discharge and roof access in multi-story buildings.
- ▶ Provide interior way-finding signage and / or graphics as required to direct people within buildings. Building maps or floor plans may be installed at key locations. Directional signs and / or directories shall be installed on walls opposite elevators, and possibly at the intersection of several corridors. Signage must also be provided at key locations in the building to indicate destinations or other key building locations. Design and installation (i.e. mounting height, contrast, visibility, other factors) shall meet ADA guidelines for all signage.
- ▶ The method and appropriateness of donor recognition shall be coordinated by the NU PM with Institutional Advancement and Campus Planning and Development.

#### 6.3.4 Room Identification

- ▶ Every room shall have a wall mounted room sign or plaque, per technical

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# 6

## Signage & Graphics

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specifications under the University Graphics and Signage Program. Signage shall contain room numbers, occupant name and room space identification as well as Braille symbols and meet all ADA requirements.

- ▶ Room Identification signage to be produced in accordance with NU Sign Shop protocols and standards with capabilities for replacement or repair.
- ▶ Coordinate room numbering and naming with NU Project Manager, Campus Planning and Development, and Spatial Systems Manager for compliance with university space standards. Develop project schedules based on approved system for numbering and naming.

### 6.3.5 Attachment Systems / Mounting Heights

- ▶ To be compliant with NU Signage and Graphics guidelines and standards.
- ▶ [Sign dimensions and positioning should comply with ADA standards.](#)
- ▶ To be approved by NU as part of project approvals process.

**6.3.6** All signage specifications and shop drawings for new construction and renovation projects should be approved by the Northeastern University Sign Shop prior to fabrication and shall coordinate with their details and standards.

**6.3.7** NU Graphic Standards and Tools - Refer to the NU Marketing and Communications website for standards on usage of NU branding and imagery as well as formatting for all media, editing purposes, and academic use.

- ▶ NU Marketing and Communications can be found at: [Marketing and Communications Guidelines](#)

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# 6

## Signage & Graphics

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# 7

## Architectural Design Standards

### Northeastern University Guidelines for Capital Project Design & Implementation

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#### 7.0 ARCHITECTURAL DESIGN STANDARDS

Individual university departments maintain various standards, specifications, and guidelines related to the specific function of their department. This chapter is intended to provide broad guidelines and, where available, refer the design team to the appropriate source of specifications. Chapter organization is as follows:

- ▶ General considerations for university-wide projects.
- ▶ Suggested space utilization for programmed areas throughout the campus.
- ▶ Interior materials preferences and guidelines.
- ▶ Specific requirements for various programmed spaces.

#### 7.1 GENERAL INFORMATION

**7.1.1** The following information applies to all university projects and is to be incorporated with the highest level of benefit to the project.

#### 7.2 SERVICE ACCESS

**7.2.1** Identify the service entry for buildings. Designate the service route from

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# 7

## Architectural Design Standards

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the nearest street or access to the service entry. Avoid pedestrian and vehicle conflicts. Consider campus deliveries including mail delivery, general commercial deliveries, trash pick-up, and hazardous material delivery and disposal. Design service access and service area for the largest delivery vehicle that will (regularly) service the building.

- ▶ Is a loading dock appropriate?
- ▶ Are roll-up doors required?
- ▶ Is a freight elevator required near the service entry?

**7.2.2** Provide service access in a manner that is most consistent with the campus master plan and City of Boston requirements and reduces or eliminates disruptions to pedestrian access, non-service access, or general campus activity. Service access should be located, designed, and screened so as to be discrete and non-disruptive to non-service campus activity wherever possible.

**7.2.3** Locate service access to provide direct access to spaces / functions within the building that require it. This may include but not be limited to services such as a building receiving, mail, building technical services (electrical, IDF, mechanical areas), freight / service-related elevators, and other building elements.

### 7.3 EQUIPMENT AND TRASH ENCLOSURES

**7.3.1** All exterior mechanical and / or electrical equipment shall be screened from view.

**7.3.2** This includes rooftop equipment and ground-level equipment. The screening should be adequate to fully cover the equipment from ground level or adjacent building view. Screening shall also be reviewed and accepted by any applicable utility provider.

**7.3.3** Trash enclosures shall be provided with each project unless waived by Owner.

**7.3.4** Trash enclosures should also be screened from public areas, campus view corridors and building entries. Screening shall be provided from ground level views as well as any adjacent building views.

**7.3.5** Access panels, where required, shall be located in a convenient location for maintenance and be lower than 10 feet above the finished floor. Best 93K lock system shall be used on access panels.

### 7.4 HARDWARE

**7.4.1** Refer to university Hardware Specifications for all appropriate building and FF&E hardware. [Carpentry Standards](#) \* (Updated for 2017)

**7.4.2** Coordinate hardware requirements with security requirements of NUPD for all departments and access.

## **7.5 BUILDING / SPACE / ROOM DESIGN GUIDELINES GENERAL REQUIREMENTS**

**7.5.1** The standards below are a reflection of campus development to date and are in accordance with the university's conventional space requirements as noted by faculty, staff, and enrollment projections. The university is aware that student expectations, technological advances, and changing industry conventions of space utilization will continue to impact these requirements. Northeastern University considers each building and space program to be unique and will evaluate each project on a case by case basis.

**7.5.2** At the end of this section are individual Space / Room Design Layout / Information Sheets. These space / room sheets illustrate the layout and features of some common / typically programmed spaces (but is not fully inclusive of all potential spaces) and provide typical square footages, suggested FF&E layouts as well as detailed information on power, data, and other infrastructure requirements. Spaces may require further investigation during design; particularly for spaces likely to have more specific requirements based on use. (i.e. offices and service spaces are more likely to be typical, whereas classrooms, labs and clinical spaces are more likely to require specific investigation on a project-by project basis).

**7.5.3** The following table shall be used as a guideline in assigning office and support spaces in design. Where applicable and efficient for building planning, Consultants shall work with the university to assign space allowances to typical building program elements that are repeated to allow flexibility / consistency with building planning modules for building systems coordination.

**7.5.4** Space assignment shall take into consideration future flexibility of space for potential building remodel or re-assignment as well. It is the goal that the minimum necessary space types be used to accomplish project space goals, accommodation of users and required FF&E in a space, and provide modular flexibility for future remodel or reimplementation of space as functions and users change.

**7.5.5** All programmed areas and assigned spatial layouts and sizes shall be verified with the university's Project Manager during programming and design.

## **7.6 SPACE ASSIGNMENT GUIDELINES**

**7.6.1** Space program to be determined and verified by the university as part of the facility planning and design process for each new project. Space adjacencies and hierarchies to be recommended by affected department for programmed use and verified / approved through the program approval process.

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# 7

## Architectural Design Standards

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**TABLE 7.0 NU SUGGESTED SPACE ASSIGNMENT AND UTILIZATION**

BUILDING TYPE	SPACE TYPE	SUGGESTED USABLE SF
Administrative	Senior Vice President	300
	Provost	300
	Vice Provost	150
	Associate Vice Provost	125
	Dean	250
	Associate Dean	150
	Department Chair	150
	Vice President (Administrative)	150
	Associate Vice President	150
	Director	125
	Faculty - (Tenure/Tenure Track)	140
	Faculty - (Adjunct)	70
	Graduate Assistant	50
Residential	Student Housing	150 NSF / Bed
Academic	Classroom	22 SF / Seat
	Lecture Hall	19 SF / Seat
	Wet Lab	700 NSF / Bay
	Dry Lab	500 NSF
	Computational Lab	500
Support	Lactation Rooms	60
	Custodial / Janitorial	40
	Restrooms (Public)	per code +
	ITS	80
	Electrical Closets	80
	Storage (Administrative Department)	80
	Storage (Bldg. Attic Stock and Maint.)	120

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## Architectural Design Standards

## 7.7 SUGGESTED SPACE ASSIGNMENT AND UTILIZATION

**7.7.1** Based on university and Industry Standards - Refer to Table 7.0 NU Suggested Space Assignment and Utilization.

**7.7.2** Consultant shall prepare similar space / room utilization schedule as part of the programming phase, with appropriate spaces and space features per project.

## 7.8 INTERIORS PREFERENCES

Northeastern University's Office of Campus Planning and Development and Facilities Design and Construction Division encourage creative expression for facility design. The university does have some preferences for interior materials based on lessons learned, operations, and long term maintenance. Materials used in NU facilities shall be durable and cost effective as well as complementary of the project's overall design intent. Materials shall also meet the requirements established in the NU Technical Design Guidelines located at: [NU MEP Design Standards](#)

Continuing the commitment to sustainability, NU would like all projects to incorporate as much natural lighting and other passive sustainable design elements as possible within each project. Interior design elements and materials shall complement and, where possible, enhance the experience of these measures. Materials selected shall contribute toward the sustainable design goals. [A 0% VOC level is the preferred standard for all materials, with a maximum of 10% by volume for emissions, and 0% in VOC content for paint, carpet, and adhesives.](#)

Interior materials selection for all university projects shall meet or exceed the expectations of the following utilization preferences below.

### 7.8.1 Flooring

Flooring materials shall be durable and attractive. Acceptable materials shall be determined based on the use of the programmed space and department / end user preferences as they relate to the selected project design. Acceptable materials include but are not limited to:

#### ► Carpet

» *Basis of Design / Preferred Manufacturer: LEES Carpet / Mohawk Carpet Modular Tile 24" x 24" tile, 12" x 36" tile or equal and 12 ft. broadloom.*

» *Preferred areas of use:*

- Administrative Offices
- General Offices
- Private Offices
- Conference Rooms
- Classrooms
- Student Lounge Areas
- Dormitories

## Libraries

### ► Resilient Flooring

» *Resilient flooring is typically utilized due to the benefits of durability, cost effectiveness, stain resistance, water resistance, chemical resistance, electrical charge resistance, sound absorption, sustainability, and ease of maintenance.*

» *Resilient flooring offers multitudes of color, pattern, and design choices. Material composition and sizing varies greatly. Many products are composed of recycled content and / or rapidly renewable resources. Acceptable forms of resilient flooring materials include, but are not limited to:*

- Vinyl Sheet Flooring - 6' roll, 12' roll
- Vinyl Composition Tile (VCT) - 12"x12" tile
- Linoleum / Marmoleum - sheet roll, tile
- Rubber Flooring - sheet roll, tile
- Cork - tile

» *Preferred areas of use:*

- Areas of high traffic
- Corridors
- Office Workrooms
- Breakrooms
- Classrooms
- Laboratories
- Lab Storage Areas
- Dormitories - Kitchens, Kitchenettes, Bathrooms
- Dining / Retail Spaces
- Student Lounges
- Study Areas
- Libraries
- Janitorial Spaces / Service Spaces
- Mechanical / Electrical / Technical Equipment Areas
- Elevators
- Stairs

### ► Hard Flooring Surfaces

» *Hard flooring surfaces are reserved for high traffic areas and spaces that require maximum durability due to presence of water, chemicals, and constant use. Hard flooring can also be used as a design feature for the specific design intent of the project or space. Acceptable hard flooring materials include, but are not limited to:*

- Porcelain Tile
- Ceramic Tile
- Terrazzo
- Concrete
- Stone Flooring
- Hardwood Flooring

» *Preferred areas of use: Lobbies / Vestibules*

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# 7

## Architectural Design Standards

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Corridors  
Restrooms / Bathrooms  
Laboratories  
Dining / Retail Spaces  
Student Lounge Areas  
Dormitories  
Libraries  
Offices

► **Applied Flooring Surfaces**

» *It is often necessary for budget or programming requirements to simply coat or re-coat a flooring surface. This is typically done for slip resistance, chemical resistance, and extreme ease of maintenance and most often occurs in spaces that are not generally within the public realm. Acceptable hard flooring materials include, but are not limited to:*

Sealed Concrete  
Stained Concrete  
Epoxy Coating  
Resinous Flooring

**7.8.2 Walls**

Wall covering and decorative materials shall be durable and attractive. Acceptable materials shall be determined based on the use of the programmed space and department / end user preferences as they relate to the selected project design. Typically the university uses paint as a decorative surface treatment. Other materials may be considered based on programmatic requirements and needs for durability such as the presence of water and chemicals. Acceptable materials and usage preferences include, but are not limited to:

► **Paint**

- » *It is assumed that all wall surfaces in all areas of all projects will receive some sort of paint or sealant treatment.*
- » *Basis of Design: **Eggshell finish is preferred for all NU wall surfaces unless otherwise required to suit design intentions. Paint systems specifications shall be determined by the need for appropriate applications for project components. **Semi-gloss shall be the standard for doors and door frames unless otherwise required to suit design intentions.*****
- » *Drywall surfaces in public areas and areas to be occupied full time by faculty and or students, and that will be receiving eggshell or semi-gloss paint, shall be specified to have a Level 4 or higher smoothness and quality prior to application.*
- » *Paints, sealants, and coatings that are specific to various substrates shall be specified and reviewed as needed for each individual project and construction type.*

► **Wall Tile**

- » *The University requires that typical wall treatment installations in restrooms / bathrooms, locker rooms, and similar "wet" spaces include*

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## Architectural Design Standards

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*ceramic and / or porcelain tile. A range of sizes, styles, and colors for field tiles are acceptable. Accents that include glass, metal, and stone shall be reviewed as part of the proposed design scheme.*

- » *Basis of Design: Daltile, Crossville, or similar for product pricing, availability and consistency.*
- » *Provide appropriate wall tile trims and edging as part of the design scheme to avoid exposed unfinished / unsealed edges of tile.*
- » *Provide appropriate transition trims where depth of tiles vary from each other or from adjacent wall surfaces whenever applicable.*
- » *Installation and finishing recommendations shall conform with manufacturer recommendations for product warranty.*

#### ► **Specialty Wall Treatments**

- » *Specialty wall treatments and accents will be considered on a case by case basis. Any suggested materials shall be durable, cost effective, and easily maintained. Specialty materials shall carry a Class A fire rating or otherwise be approved by governing agency before use.*

#### **7.8.3 Wall Base**

- All walls in public areas and areas to be occupied by faculty or students shall be completed with a wall base as a transition from wall to floor.
- Basis of Design: Rubber Wall Base with cove profile for easy maintenance shall be the primary basis of design for NU projects. Specialty profiles may be considered as part of project design.
- Alternate acceptable Wall Base suggestions: Tile and Wood
  - » *Tile wall base may be used in wet locations such as restrooms, bathrooms, locker rooms, etc.*
  - » *Wood Base may be used in administrative areas or areas of high importance and low volumes of traffic such as offices and conference rooms. Wood shall be appropriately painted or sealed to ensure durability.*

#### **7.8.4 Ceilings**

Ceiling materials shall be durable and attractive. Acceptable materials shall be determined based on the use of the programmed space and department / end user preferences as they relate to the selected project design. Materials shall allow access to plenum spaces, light fixtures, mechanical equipment, etc. as required per project design. Acceptable materials include but are not limited to:

#### ► **Lay-in Ceiling System**

- » *In most spaces, the university prefers a lay-in ceiling system of acoustical tiles. The exact style of design will be determined by the programmatic need. Material light reflectance and noise ratio requirements are further described in the Technical Design Guidelines.*

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- » *In addition to acoustical ceiling tiles (ACT), lay-in materials may include tiles specially designed for laboratory spaces, or decorative tiles such as metal, wood, or another pattern. Selection to be determined with NU PM during design development.*
- » *Basis of Design / Preferred Manufacturer: 2'x2' Acoustical Ceiling Tile such as USG or Armstrong products.*
- » *Preferred areas of use:*
  - Administrative Offices
  - General Offices
  - Private Offices
  - Conference Rooms
  - Classrooms
  - Lobbies
  - Student Lounge Areas
  - Libraries
  - Corridors
  - General Public Spaces

### ► **Drywall Ceiling / Drywall Suspension System**

- » *Drywall ceilings may be considered in spaces where access to utilities is not a concern. Drywall ceilings may also be a part of existing buildings. Finishes of these ceilings shall be Level 4 or greater in smoothness and shall be painted with a flat finish ceiling paint.*
- » *Hard ceilings shall contain secured but accessible access panels for service of utilities that are contained within ceiling above.*

### ► **Specialty Ceiling System**

- » *NU does not have a basis of design or preferred manufacturer for specialty ceilings. Such systems shall be determined by the proposed project design scheme. Specialty systems shall be durable, easy to maintain, and allow access as needed to ceiling fixtures, structure, support, electrical, mechanical, and other items within the system, exposed above the ceiling or concealed within the plenum space.*
- » *Preferred areas of use:*
  - Lobbies
  - Lounges
  - Private Offices
  - Conference Rooms
  - Classrooms
  - Libraries
  - Corridors
  - General Public Spaces

## 7.8.5 Doors

- **Basis of Design / Preferred Material:** Solid Core Wood Stain Grade Doors are the preferred door for public areas when appropriate.
- **Alternates:** Metal Doors - for use as appropriate for programmed space and / or building design and for roll-up doors at garage and loading areas. Metal doors shall also be used for projects or spaces that need to achieve a

higher fire rating.

- ▶ All specified doors shall be code compliant and use specific.
- ▶ Refer to NU hardware specification located at: [Carpentry Standards\\*](#) (Updated for 2017)
- ▶ **Lites and Side Lites:**
  - » *Doors for public rooms and corridors other than doors specified for fire separation purposes shall contain a lite within the door to allow for visibility to adjoining spaces.*
  - » *All Classroom doors shall have a lite or side lite.*
  - » *Doors for private offices and residential spaces shall not contain lites within.*
  - » *Doors integrated within window systems and are abutted by side lites shall only contain lites if desired by end user or as part of particular design scheme.*
  - » *Lites and side lites for doors designated for higher fire ratings shall be sized appropriately per required codes.*

#### 7.8.6 Window Treatments

- ▶ **Basis of Design / Preferred Material:** Hand operable, fabric screen shade such as Mechoshade or approved equal for all spaces where appropriate. Such shades provide maximum protection with maintenance of view and visual connection to outside environment. Color to be coordinated with project design intent.
- ▶ **Alternates:** Aluminum Horizontal Blinds - hand operable, such as Hunter Douglass or approved equal. Color to be coordinated with project design intent.
- ▶ Provide specialty shades such as black-out shades in media centric spaces, or automated systems as program dictates.

#### 7.8.7 Acoustic Design

- ▶ Acoustic requirements of a space are impacted by the intended use of the space and the building construction and the completed finishes. Each shall be incorporated to achieve appropriate levels of design within the project spaces.

STC	DESIRED SPEECH BLOCKING EFFECT
20 - 25	Quiet speech is audible
25 - 30	Ordinary speech is audible and intelligible
30 - 35	Loud speech is audible and intelligible
35 - 40	Loud speech is heard but is rarely intelligible
40 - 50	Loud speech can be heard, faintly
50 - 60	Loud sounds can barely be heard

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- ▶ **STC - Sound Transmission Class Basis of Design:** is a building standard issued by the American Society of Testing and Measurement (ASTM) and has been incorporated into many specifications and regulations as a measurement of acoustic comfort for sound transmission. [ASTM - STC - E413](#)
- ▶ Consultant shall incorporate noise control information as part of all project documentation and building detailing.

### 7.9 SPECIFIC SPACE REQUIREMENTS

Below are a series of specific requirements for spaces typically programmed into facilities at university. These requirements are intended to highlight major points / elements and items relative to the design, performance and construction of these spaces. Specific project programming information may supplement these requirements. Additionally, spaces may exist in project programs that are not specifically addressed in these standards where supplemental program data may provide information for these spaces. These standards are to be used in guidance for design, construction, and performance of these spaces, and as general information for typical Northeastern University requirements.

#### 7.9.1. Offices and Administrative Areas

- ▶ Show furniture and equipment layout on floor plans at Schematic Design Phase. At Design Development and Construction Documents Phases, provide separate floor plans for furniture and equipment. Demonstrate ADA clearances in offices with furniture shown to scale.
- ▶ Indirect lighting is preferred for artificial light.
- ▶ Show data and power locations on plans. [Provide 6 outlets minimum per workstation, below the desk, with 1 quadruplex outlet next to the NUnet Quad Box and a separate 2.3 amp duplex outlet with two USBports placed at a reasonable distance from the quadruplex, allowing convenient power access throughout the workstation.](#)
- ▶ Corridors in office areas: double loaded corridors should terminate with natural light whenever possible. Doors should be offset across corridors (i.e. doors of spaces across a corridor should not align and should be fully offset for visual and acoustical reasons) to maximize privacy.
- ▶ Provide acoustical privacy in private offices. Preferable methods are through insulated walls and ceiling tiles / surfaces. Insulated / finished walls to bottom of deck may be used as well. Consideration of measures of acoustical privacy relative to building systems shall be considered as well (i.e. HVAC provisions and other.) Provisions for acoustical privacy shall have special consideration and measures (i.e. insulated and finished walls to bottom of deck, other

measures to meet performance criteria) at areas of high acoustical privacy, i.e. counseling rooms, HIPAA compliant spaces, spaces where matters of high privacy are discussed, etc.

- ▶ Audio-Visual Systems - Coordinate with university Project Manager and ITS Department for system requirements and parameters. Typical systems can include: visual systems / projection, audio systems, lecterns, and other considerations to support classroom use. Audio-visual systems and their performance is to be coordinated with building services, acoustical, lighting and other systems. Program budget to determine if systems and equipment are purchased and installed by project or purchased by university and installed by project or to be purchased at a later time.
- ▶ Access Control: Coordinate with university security protocols and conform to university hardware specification for space type.
- ▶ Special Considerations: Consider donor signage or potential for future signage applications in design.

### 7.9.2. Lobbies

- ▶ Main entries should have vestibules with built-in recessed walk-off mats in accordance with Northeastern University Guidelines for Sustainable Practices: [\*Sustainable Practices and Operations Guidelines\*](#)
- ▶ Lobbies should have direct access to toilet rooms that are visually screened.
- ▶ Wayfinding: Provide building directories, wayfinding / directional signage, code required signage (exiting, accessibility, and other), and other signage in construction budget. Building directories should be dynamic electronic signage wherever possible for new construction and renovated facilities. Signage that can be easily revised by the university sign shop should otherwise be provided.
- ▶ Provide a building directory in the main lobby and secondary entries as suitable.
- ▶ Stairs should be visible from the lobby and identified with appropriate and required signage.
- ▶ Passenger elevators should be convenient for the lobby and well signed for accessibility. Elevator finishes should be determined in accordance with the level of finishes selected for the entire building.
- ▶ Provide a location for university designated trash and recycling receptacles that is conveniently located within the typical path of travel to ensure visibility and use.
- ▶ Provide a location for news stands for campus publications. This should be adjacent to or near facilities for seating, vending, trash, and / or recycling.

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- ▶ Elements that should be considered when designing lobbies: donor wall, seating, screened trash / recycling receptacles, data and power for lobby users, campus phone, upgraded finishes for appearance and durability, monitors for building, information, specialty lighting, reception or security counter, natural lighting, display cases, bulletin boards, visibility and / or connectivity to circulation, and vehicle / bicycle parking.
- ▶ Additional potential areas near the lobby: concession area, and vending area.

### 7.9.3 Classrooms / Academic Facilities (Class Dry Labs / Computer Labs and Similar Spaces)

- ▶ As part of the programming phase consultation shall be coordinated with the Center of Advanced Teaching and Learning to determine the instructional format of the room.
- ▶ General: Classrooms (Including Class Dry Labs / Computer Labs and similar spaces) may be unique and custom designed spaces to support the activities and teaching methods that occur within them. These spaces may have unique requirements accordingly, and special needs for fixed furniture, equipment, building services, audio-visual equipment, HVAC service / tolerances / redundancy, access control, and other features. Below are some general guidelines to support the requirements of these spaces that are subject to refinement, validation and further definition based on the specific function, requirements, and activities of a particular space.
- ▶ Accessibility - Ensure accessibility standards are met in classrooms, including but not limited to audio-visual systems compliance, assisted listening systems, number, location and distribution of accessible seating locations, floor walks/ ramps / stairs, handrails, and other elements of accessibility. Integrate accessibility elements into the base design so that they are functional, meet requirements, and are integrated into the design to not appear / act as supplementary to the overall design. Integrate principals of universal design.
- ▶ Coordinate with university Project Manager and ITS Department for system requirements and parameters. Typical systems can include: visual systems/ projection, audio systems, lecterns, and other considerations to support classroom use. Audio-visual systems and their performance is to be coordinated with building services, acoustical, lighting, window treatments and other systems. Program budget to determine if systems and equipment are purchased and installed by project or purchased by university and installed by project or to be purchased at a later time.
- ▶ Sloped floors in classrooms need to be provided where size and configuration requires a sloped floor for sightlines and classroom function (i.e. typically over 50 students; subject to program verification). Ceiling configuration needs to be considered to work with floor configuration and support classroom and classroom systems functions (i.e. A / V systems, lighting, acoustics, service access, surface treatment, and other considerations for function).
- ▶ Access Control: Coordinate with university security protocols and conform to university hardware specification for space type.

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### 7.9.4 Wet Labs (Including Research, Teaching and other Wet Labs and Associated Spaces)

- ▶ The university has a desire to deploy open lab and shared lab concepts wherever practical to allow for maximum flexibility in use of the space.
- ▶ At the earliest stage of design, a formal equipment list is required from the PM that identifies all equipment (by make and model) that will be installed or operated in the lab. This will inform the design and layout of the space for all disciplines and systems.
- ▶ Laboratory design and layout shall be reviewed by and receive approval from Environmental Health and Safety.
- ▶ General: Wet Labs may be unique and custom designed to support the activities and research that occur within. It is typical that wet labs will have unique requirements accordingly, and special needs for fixed furniture, equipment, building services (i.e. power, water, RO / DI water, data, gas, compressed air, vacuum and other services), shielding, vibration tolerances, EMI resistance / levels, HVAC service / tolerances / redundancy, access control, structural requirements and other features. Below are some general guidelines to support the requirements of wet labs that are subject to refinement, validation, and further definition based on the specific function, requirements and activities of a particular wet lab.
- ▶ Floor / Base Finish: seamless surface, chemical, static, microbial or other resistance, other as required based on program, use, equipment requirements.
- ▶ Walls: Paint - Semi-gloss, min. Special / upgraded finishes to address chemical, static, microbial or other resistance, shielding requirements, or other as required based on program, use, and equipment requirements.
- ▶ Ceilings: Provide washable and chemical / stain resistant acoustical ceiling tile treatment - 2x2 lay-in with reflective tile min. Special / upgraded finishes to address chemical, static, microbial or other resistance, other as required based on program, use, and equipment requirements.
- ▶ Provide fixed furniture and equipment (lab benches, shelving / cabinets, carriers and other fixed systems) in labs and coordinate with end user program and building services (i.e. power, water, RO / DI water, data, gas, compressed air, vacuum, and other services) to provide all required building services in a modular and regular manner (i.e. 3' on center, 6' on center, other).
- ▶ Loose Furniture: Provide washable and chemical / stain resistant fabrics and finishes for all furniture within wet lab spaces.
- ▶ Provide all building services (HVAC, power, water, RO / DI water, data, gas, compressed air, vacuum, and other services) to support space use and to support equipment to be used in the space.
- ▶ Shielding: Provide shielding from electrical interference (EMI, RF and other types) or to contain any radioactivity or other items / activities requiring



containment in the space (e.g. shielded walls), to support the operational requirements of equipment and activities in wet labs.

- ▶ Vibration Resistance / Tolerances: Ensure vibration tolerances are met for equipment / instrumentation operation and to support research activities.
- ▶ Accessibility: Ensure accessibility standards are met in wet labs.
- ▶ Special Considerations:
  - » *Consider donor signage potentials and special signage for functional or warning purposes in design.*
  - » *Plan wet labs on a modular basis to work with furniture and equipment.*
  - » *Design with modularity to allow for future flexibility in space use, arrangement, assignment and provisions for furniture and equipment. This applies to many items in the wet lab design (structural bays, layout of bench and equipment areas, design of benches and their modularity/ adjustability (layout, height, etc...)) and other considerations.*
  - » *Lockable storage in furniture, equipment, and built-in casework should be provided based on the user needs.*
  - » *Management and disposal of biohazards must be addressed, per the requirements of the operations needs of clinical facilities.*
  - » *Provide analysis of and provision for any chemical storage and use provisions (fire separations / ratings, control areas, maximum allowable chemical storage, etc.)*
  - » *Provide for and coordinate all lab safety provisions and requirements.*
  - » *Provide eye-wash, emergency shower and other safety equipment in clinical areas where chemicals, fluids, pathogen carrying materials or other such items or activities warrant safety equipment and provisions.*
  - » *Although important for all aspects of the project, design and construction and construction administration / verification to support specific technical requirements for equipment and activities is particularly critical to wet lab performance and function.*

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### **7.9.5 Clinical Spaces (Clinical Research, Teaching, Service, and Other Similar Spaces)**

- ▶ Clinical spaces can be unique and custom designed spaces to support the activities and research that occur within them. It is typical that clinical spaces will have unique requirements accordingly, and special needs for equipment, building services (i.e. power, water, RO / DI water, data, gas, compressed air, vacuum and other services), shielding, vibration tolerances, HVAC service/ tolerances / redundancy, access control, privacy, structural requirements, and other features. Below are some general guidelines to support the requirements of clinical spaces that are subject to refinement, validation, and further definition based on the specific function, requirements, and activities of a particular clinical space.
- ▶ Floor / Base Finish - Seamless surface, chemical, static, microbial or other resistance, other as required based on program, use, and equipment requirements.

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- ▶ Walls: Paint - Semi-gloss, min. Special / upgraded finishes to address chemical, static, microbial or other resistance, shielding requirements, or other as required based on program, use, equipment requirements.
- ▶ Ceilings: Provide acoustical ceiling tile treatment - 2x2 lay-in with reflective tile min. May be required to be washable, and chemical / stain resistant based on specific space program / use. Special / upgraded finishes to address chemical, static, microbial or other resistance, other as required based on program, use, equipment requirements.
- ▶ Doors: Wood stain grade doors (w/o lite standard) 36" min. Larger as required.
- ▶ Special / Upgraded finishes and performance to address chemical, static, microbial or other resistance, shielding requirements, or other as required based on program, use, and equipment requirements. Lites in doors should be reviewed based on use.
- ▶ Provide fixed furniture and equipment (shelving / cabinets, other fixed systems) in clinical spaces and coordinate with building services (i.e. **power, water, RO / DI water, data, gas, compressed air, vacuum, and other services**) **to provide all required building services in a manner to service clinical spaces.**
- ▶ Provide all building services (HVAC, power, water, RO / DI water, data, gas, compressed air, vacuum, and other services) to support space use and to support equipment to be used in space.
- ▶ Shielding - provide shielding from electrical interference (EMI, RF, and other types) or to contain any radioactivity or other items / activities requiring containment in the space (i.e. shielded walls), to support the operational requirements of equipment and activities in clinical spaces.
- ▶ Vibration resistance / tolerances - ensure vibration tolerances are met for equipment / instrumentation operation and to support clinical activities.
- ▶ Accessibility - Ensure accessibility standards are met in clinical spaces.
- ▶ Provide access control to overall clinic area (i.e. clinical area access should be controlled to manage patient and visitor access), and provide locks as required to specific clinical spaces.
- ▶ Special Considerations:
  - » *Consider donor signage potentials and special signage for functional, safety, or warning purposes in design.*
  - » *Plan clinical spaces on a modular basis to work with furniture and equipment.*
  - » *Design with modularity to allow for future flexibility in space use, arrangement, assignment, and provisions for furniture and equipment.*
  - » *Address all HIPAA, OSHA, and other requirements for the operations of clinical spaces. This may include but not be limited to privacy, acoustical performance, records security, quality of finishes (ability to clean/disinfect, non-porous / resistant to bacterial growth, and other items), and other considerations relative to specialty function / requirements for clinical*

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*spaces.*

- » *Lockable storage in furniture, equipment, and built-in casework, should be provided based on the user needs.*
- » *Management and disposal of biohazards must be addressed, per the requirements of the operations needs of clinical facilities.*
- » *Provide analysis of and provision for any chemical storage and use provisions (fire separations / ratings, control areas, maximum allowable chemical storage, etc.)*
- » *Provide for and coordinate all clinical safety provisions and requirements.*
- » *Provide eye-wash, emergency shower, and other safety equipment in clinical areas where chemicals, fluids, pathogen carrying materials, or other such items or activities warrant safety equipment and provisions.*
- » *Although important for all aspects of the project, design and construction and construction administration / verification to support specific technical requirements for equipment and activities is particularly critical to clinical space performance and function.*

### 7.9.6 Audio / Visual Guidance

Special consideration must be given to spaces with audio / visual program components. Consultant shall coordinate closely with university IT and Facilities for power requirements and for equipment specifications. This coordination ensures that all components are compatible with university systems and programs. In parallel, use this resource: [Audio / Visual and Information Technology Requirements](#)

### 7.9.7 ITS Closets

- ▶ NU ITS department to be engaged at earliest stages of on-going projects to ensure exchange and integration of most current requirements and preferences to suit needs of proposed project to be successfully integrated into campus environment.

### 7.9.8 Toilet Rooms

- ▶ In addition to all public restrooms required by code, each university facility shall include (whenever possible as part of a major renovation / expansion and required in new facilities), at least (1) one gender neutral restroom. This room shall comply with all applicable codes and standards for a single occupancy public restroom.
- ▶ Sight lines should screen the toilet room interior from public view.
- ▶ Floors to be of a durable material; easy to maintain.
- ▶ Walls and wall base to be of a durable material, such as tile or terrazzo, to coordinate with wall and floor finishes.
- ▶ Provide at least one floor drain per toilet room and slope the floor to the drain.
- ▶ Ceiling hung toilet partitions (supported from the structure above the ceiling) are preferred. Floor mounted toilet partitions are acceptable if structural or

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budgetary constraints prevent the use of ceiling mounted partitions. Ceiling mounted partitions must be coordinated with the structural engineer. Partition material should be solid surface. Solid core, such as phenolic resin, can be used as a lower cost alternative, and is to be approved by university Project Manager. No metal or painted metal partitions should be specified.

- ▶ Countertop material to be solid surface or durable stone surface for long term ease of maintenance.
- ▶ Toilet room accessories - Northeastern Facilities Building Services will provide accessories for toilet areas, including:
  - » *Soap dispensers*
  - » *Paper towel dispensers*
  - » *Toilet paper dispensers*
  - » *Feminine product dispensers*
  - » *Trash receptacles (In-wall undesirable)*
- ▶ Provide accessory shelves / hooks for personal items to be stored during sink use. They shall be 1' deep min.
- ▶ Toilet stalls to contain flat shelf surface, integrated with accessories such as roll dispenser, or located behind toilet. Determination based on project space allowance and design preference to be discussed with NU PM during design development phase.
- ▶ Moisture resistant plywood backing is required in wet areas. (i.e. Dur-a-rock or equal). Provide a light fixture over each stall.
- ▶ A continuous recessed light fixture at the back wall of the stalls and over the mirrored wall of the sink area is preferred. Coordinate access and service provisions with university for ease of access.
- ▶ Lighting shall be carefully considered in toilet and restrooms to provide minimum required lighting levels per code and to be functional. Lighting shall also be specified and located for ease of access and maintenance.
- ▶ Drinking fountains (wall mounted electric water cooler type) should be in the proximity of the toilet rooms.

### 7.9.9 Lactation Rooms

- ▶ Northeastern University has both a federal and ethical responsibility to provide lactation space for nursing mothers returning to work, students returning to course work, and visitors to campus.
- ▶ The Patient Protection and Affordable Care Act (P.L. 111-148, known as the "Affordable Care Act") amended section 7 of the Fair Labor Standards Act (FLSA) to require employers to provide "reasonable break time for an employee to express breast milk for her nursing child for 1 year after the child's birth each time such employee has need to express the milk." Employers are also required to provide "a place, other than a bathroom, that is shielded from view

and free from intrusion from coworkers and the public, which may be used by an employee to express breast milk." See 29 U.S.C. 207(r). The requirement became effective when the Affordable Care Act was signed into law on March 23, 2010.

- ▶ Long-term goal is to have a small dedicated "wellness" room in every building on campus.
  - » *Strategy - Locate enough wellness rooms at various locations throughout the campus to allow accommodation in a building in close proximity to virtually anywhere on campus.*
  - » *Include wellness room space in existing project scope when possible.*
  - » *Secure funding for three renovations annually until goal is accomplished*
- ▶ **Scope**
  - » *Locking door and number combination on outside*
  - » *Signage and labeling as "Lactation" room unless space is provided within single sex bathroom suite*
  - » *Chair and small table*
  - » *Sink with counter top and base cabinet (ideal, but depends on location)*
  - » *Mirror over sink*
  - » *Paper towel dispenser*
  - » *Accessible electrical plugs*
  - » *White noise machine (depending on location)*
  - » *Privacy curtain (depending on location)*
  - » *Room Wizard for scheduling*

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### 7.9.10 Elevators

- ▶ Walls around elevators should be finished in a hard durable surface (i.e. wall tile to match or coordinate with floor surfaces / tile or ceramic tile, other options). The surface should be cleanable, stain resistant, and able to withstand impact from equipment.
- ▶ Equip elevators with an emergency telephone that connects directly to the university Police Dispatch.
- ▶ Emergency telephones installed in elevators and areas of refuge telephones must be "hands free" type and ADA accessibility compliant, including such accessibility items such as visual signaling indicators for the hearing impaired.
- ▶ Doors should be stainless steel.
- ▶ Floors shall be rubber with a non-skid raised pattern in service or exterior elevators (i.e. garages) or upgraded flooring (i.e. terrazzo tile, ceramic tile, other materials) in all other elevators.
- ▶ Interior cabs shall be of metal, solid surface, or other durable and high quality finishes that will discourage and hide vandalism and provide an attractive

elevator cab finish.

- ▶ Elevator controllers and door operators shall not be proprietary.
- ▶ Elevator equipment rooms, in addition to meeting all code requirements, shall have access to allow for equipment and technicians to reasonably service room and its equipment. Access to room shall be direct and shall be located in a discrete fashion to not appear as a publicly accessible room. Co-location of any non-elevator equipment (mechanical, electrical, data / telecommunications, facility / other storage, etc.) is not acceptable.
- ▶ Elevators may require access control, either for elevator access (outside the elevator) or for specific floor access (inside the elevator). Coordinate requirements with university.
- ▶ Coordinate requirements for elevator equipment rooms. This may include location, access off service corridors (similar to other service spaces), proximity to elevator chase, building service requirements (power, data, telephone, HVAC / venting, other items), and other considerations.
- ▶ Elevator ceiling shall be finished with vandal resistant coating and / or surface with sufficient lighting for visibility.

#### 7.9.11 Custodial Closets

- ▶ Provide minimum one per floor.
- ▶ Custodial closets shall be separate spaces not intended for joint use or any other purpose. Co-location of any non-custodial equipment (mechanical, electrical, data / telecommunications, facility / other storage, etc.) is not acceptable.
- ▶ Custodial closets shall be directly accessible from a corridor or service hallway.
- ▶ Custodial closets shall not be accessed through intermediary spaces (restrooms, electrical rooms, others) unless approved by university.

#### 7.9.12 Mechanical Spaces / Rooms

- ▶ Mechanical spaces shall have the floor painted with a two part urethane epoxy.
- ▶ Mechanical spaces shall be separate spaces not intended for joint use or any other purpose. Co-location of any non-mechanical equipment (custodial, electrical, data / telecommunications, facility / other storage, etc...) is not acceptable.
- ▶ Mechanical spaces shall be directly accessible from a corridor or service hallway.
- ▶ Mechanical spaces shall not be accessed through intermediary spaces (restrooms, electrical rooms, others) unless approved by the university. In some instances, mechanical spaces are preferable to be accessed through doors to the exterior or service yards. This shall be coordinated with the university Project Manager and Department Program requirements.

- ▶ Building HVAC controls should be located in these spaces, and not the electrical rooms or ITS rooms.
- ▶ Mechanical spaces and elements within shall be treated with sound, vibration and other attenuation measures to ensure they do not adversely impact the performance of the building and its spaces / elements / FF&E.
- ▶ All mechanical equipment is to be located in mechanical rooms. No mechanical equipment shall be located in rooms not specifically designated as mechanical rooms (i.e. storage areas and other areas.)
- ▶ Provide any standard or special building services to support mechanical room operations, conditions, and other factors for performance. This may include but not be limited to considerations for power, data, telephone, HVAC / venting, and other considerations to address unique issues and performance requirements.
- ▶ House keeping pads shall be provided for all equipment. When possible, conduit and piping penetrations into the mechanical space shall be made at the floor level and not the ceiling level. Floor sinks shall be located in appropriate areas and sized for full flow. Floor sinks shall be below the level of the surrounding area to allow for gravity flow.

#### 7.9.13 Electrical Spaces / Rooms

- ▶ Electrical spaces shall be separate spaces not intended for joint use or any other purpose. Co-location of any non-electrical equipment (custodial, mechanical, data / telecommunications, facility / other storage, etc...) is not acceptable.
- ▶ Electrical spaces shall be directly accessible from a corridor or service hallway.
- ▶ Electrical spaces shall not be accessed through intermediary spaces (restrooms, mechanical rooms, others) unless approved by the university. In some instances, electrical spaces are preferable to be accessed through doors to the exterior or service yards. This shall be coordinated with the university Project Manager and Facilities Department.
- ▶ Electrical spaces and elements within shall be treated with shielding, sound, vibration and other attenuation measures to ensure they do not adversely impact the performance of the building and its spaces / elements / FF&E.
- ▶ All electrical equipment and panels are to be located in electrical rooms. No electrical equipment shall be located in rooms not specifically designated as electrical rooms (i.e. storage areas and other areas.)
- ▶ ITS / Data rooms are separate rooms from electrical rooms / spaces and shall be addressed per the Owner's data / telecommunications standards for all aspects (i.e. building services / infrastructure, finishes, security / access control, and other items).
- ▶ Provide any standard or special building services to support electrical room operations, conditions and other factors for performance. This may include but not be limited to considerations for power, data, telephone, HVAC / venting, and other considerations to address unique issues and performance requirements.

### 7.9.14 Storage Spaces / Rooms

- ▶ Storage spaces shall have sealed concrete or resilient flooring unless an alternate flooring material is approved by the university Project Manager.
- ▶ Storage spaces shall be designed with module, sizing, and building services in mind for potential future conversion to office space. See office requirements for additional information.
- ▶ Storage rooms may have special requirements based on the contents to be stored in the room (i.e. security, temperature / humidity control, venting, etc.) Coordinate any special requirements with Owner.
- ▶ Provide built in storage items (i.e. casework, shelving, others) per university Project Manager and Department Program requirements.

### 7.9.15 Parking Structures

- ▶ Parking structure shall include minimum stall size and aisle width requirements to comply with local regulatory requirements unless otherwise approved by the university. Stall sizes shall not be less than 8'-6" wide by 18'-0" deep and aisle widths shall not be less than 24'-0" wide, with a total bay width of 60'-0", unless approved otherwise in writing by the university.
- ▶ Parking structures shall be designed to effectively move traffic in and out of the structure and surrounding access. Service levels for vehicle access and egress shall be coordinated with Owner.
- ▶ Floor / Ground Finish - Concrete with striping
- ▶ Interior Finish - Concrete: Pre-cast or cast-in place concrete with white or light colored Tnemec Paint. Paint shall be applied to all interior surfaces 4'-0" from lowest bottom edge of perimeter beam or spandrel minimum (e.g. to include ceiling beams, and 4'-0" down on columns from bottom edge of deepest perimeter beam or spandrel), including but not limited to interior sides of spandrel panels, beams, slab, columns, and other surfaces.
- ▶ Interior Finish - Masonry (CMU)
- ▶ Interior Finish : Other: All material finishes in a parking garage must be durable, low maintenance, and resistant to vandalism. They typically will be concrete (pre-cast or cast-in-place) or CMU masonry. Other materials are to be approved by the university Project Manager, whether they are significant in use or limited in use (i.e. upgraded finishes at circulation cores or other areas).
- ▶ Exterior Finish: Exterior finishes must be durable, low maintenance, and resistant to vandalism.
- ▶ Doors: Metal exterior paint grade doors. Glass lites in doors should be reviewed based on use and security.
- ▶ Provide all building services (HVAC, power, water, data, other services) to



support facility use and to support equipment to be used in facility. Where rooms / elements are required to support these items (i.e. ITS rooms, electrical rooms, mechanical rooms, elevators / elevator equipment rooms, security equipment rooms, etc.), address the standards / requirements for those rooms.

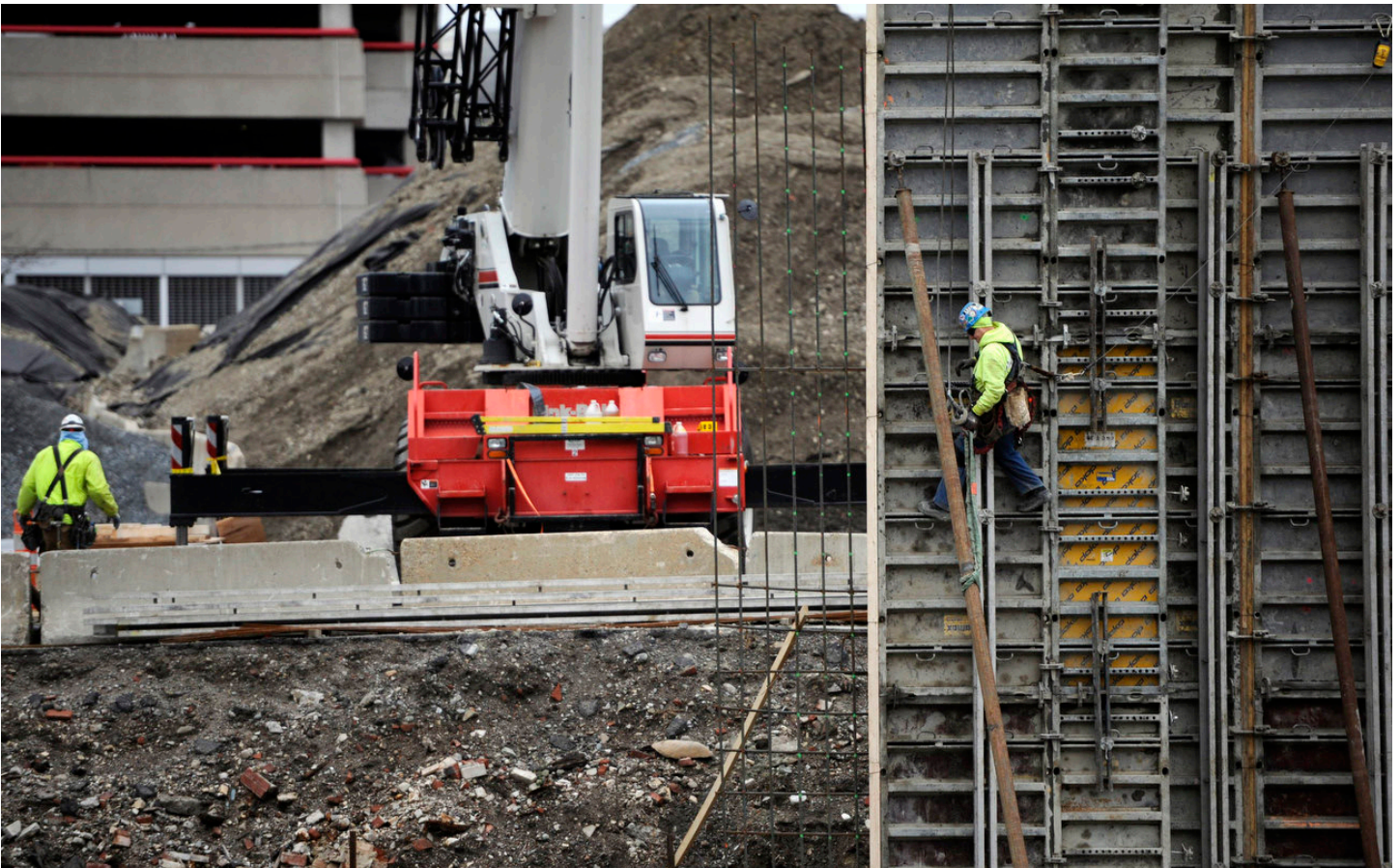
- ▶ Provide fixed furniture and equipment (security cameras, directional signage, other signage, etc.), and coordinate with building services.
- ▶ Provide provisions on exterior of structure, two sides minimum, for electronic signage to be mounted to exterior at upper levels of garage. Provide all directional signs, interior and exterior, for vehicles and pedestrians (i.e. entry signage, accessible signage, vehicle wayfinding / directional signage, pedestrian vehicle / wayfinding signage, other signage). Coordinate all signage with power and data services to support signage operations. Use of branding images and logo to be coordinate with university graphics and signage program.
- ▶ Accessibility - Ensure accessibility standards are met in parking garages.
- ▶ Campus parking and access system for locations, quantity, etc. All parking structures are to provide accessible parking.
- ▶ Security / Safety - coordinate all safety measures and precautions including camera systems and locations with NUPD and ITS **during initial** facility planning stages.
- ▶ Lighting, both exterior and interior, must be carefully considered to provide adequate lighting for safety, wayfinding, security camera operation in night conditions, and other considerations.
- ▶ Provide concrete pedestrian walkways from all parking structure exits to the exterior. Provide managed and safe pedestrian access and movement within and outside of parking structures that does not conflict with vehicular movement.
- ▶ Special Considerations:
  - » *Consider donor signage potentials and special signage for functional, safety, or warning purposes in design.*

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# 7

## Architectural Design Standards

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# 8

## Building Systems Design & Performance Requirements

Northeastern University  
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### 8.0 BUILDING SYSTEMS DESIGN AND PERFORMANCE REQUIREMENTS - ENGINEERING

#### 8.1 ENGINEERING AND BUILDING SYSTEMS STANDARDS

Northeastern University Facilities has developed guidelines for building systems, environmental controls, water and wastewater, life safety systems, electrical and lighting systems, acoustics, and controls. This document is located here: [NU MEP Design Standards](#)



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# 9

## Building Materials & Aesthetics

### Northeastern University Guidelines for Capital Project Design & Implementation

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#### 9.0 MATERIALS AND AESTHETICS

##### 9.1 ARCHITECTURAL DIVERSITY

Northeastern University would like to continue the existing trend of architectural and aesthetic diversity within the urban campus fabric while maintaining a cohesive campus framework. The exterior aesthetics of each new facility and major renovation program will be considered on an individual basis and is expected to reflect Northeastern's values for innovation and design excellence. Each facility is to be a unique extension of the programmed interior space and the selected project site. Refer to the Northeastern University Boston Campus Institutional Master Plan for further guidance on campus development: [\*NU Boston Master Plan\*](#)

##### 9.2 NU GLOBAL REGIONAL CAMPUS LOCATIONS

- ▶ For NU Global Regional Graduate Campus locations, the university respects, supports, and encourages the implementation of the architectural requirements of the host community and organization.
- ▶ Consultants shall comply with the host entity's aesthetic vision, sustainable design program, site planning, and engineering system programs whenever possible.

- ▶ Where no design goals exist for host locations, the goals and practices outlines within the NU Guidelines for Capital Project Design and Implementation, as well as the University Guidelines of Sustainable Practices and Operations Guidelines, shall provide the basis for design for all NU capital improvement and construction projects.
- ▶ Interior materials and furnishings shall comply with NU guidelines as much as possible and where the host / space allows.

## 9.2 PERFORMANCE CHARACTERISTICS

All materials shall be chosen, designed, and specified to address issues of constructability, appearance, durability, longevity of performance, and ease / efficiency of maintenance. The character of finish options for materials (especially, but not limited to exterior building materials) is to be selected based on its ability to provide a consistent and high-quality finish and selections; quality and characteristics must be coordinated with the university Project Manager.

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# 9

## Building Materials & Aesthetics

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# 10

## Furniture, Fixtures & Equipment

### Northeastern University Guidelines for Capital Project Design & Implementation

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#### 10.0 FURNITURE, FIXTURES, AND EQUIPMENT

##### 10.1 PURCHASES

- ▶ The university generally purchases furniture through cooperatives and programs that offer reduced pricing for educational facilities, including:
  - » *Massachusetts Higher Education Consortium* ([www.mhec.net](http://www.mhec.net))
  - » *The Boston Consortium* ([www.boston-consortium.org](http://www.boston-consortium.org))
  - » *Educational Institutional Cooperative* ([www.eandi.org](http://www.eandi.org))
  - » *US Communities* ([www.uscommunities.org](http://www.uscommunities.org))

##### 10.2 FIRE PROTECTION

All furniture shall meet the requirements of the City of Boston Fire Department REGULATION OF UPHOLSTERED FURNITURE: BFD IX-10 and any other Boston Fire Code requirements for upholstered furniture.

##### 10.3 PERFORMANCE

All materials shall be chosen, designed, and specified to address issues of constructibility, appearance, durability, longevity of performance, and ease / efficiency

of maintenance. The character of finish options for materials (especially but not limited to exterior building materials) is to be selected based on its ability to provide a consistent and high-quality finish and selections, quality, and characteristics must be coordinated with the university Project Manager.

**10.3.1 Preferred Materials** - Building interiors - Refer to [Section 7](#) for preferences for various interior materials and finishes.

## 10.4 FF&E PREFERENCES

The university seeks to purchase materials that offer consistent quality over the life of the product. The university procurement department has established relationships with manufacturers, vendors, and suppliers that understand this, and who work to supply these items in a timely manner, with preferred pricing, and excellent customer service and warranty support.

The Procurement Department is available to supply the NU PM and consultant with the most appropriate list of vendor contacts and preferences to suit the need of that project. The following list of vendor products and services can be a basis of design:

### 10.4.1 Furniture

- ▶ Basis of Design: Herman Miller - Office, administrative, workstations, seating, desks, tables, etc.
- ▶ Alternates: Steelcase, Knoll, OFS, Technion, Allsteel - equal quality of products and level of design innovation.
- ▶ Ergonomics: NU endorses the use of ergonomic systems that encourage the health and safety of faculty, staff, and students. Such items as adjustable height workstations, desks, tables, and chairs shall be strongly considered.

### 10.4.2 General Merchandise and Supplies

- ▶ Basis of Design: Staples - carries lower priced furniture and other merchandise for more general applications. Supplies products in a timely manner.
- ▶ Alternates: WB Mason - Similar product lines and delivery service.

**10.5** Northeastern University Procurement Department is available to provide support services in the early stages of each project. Procurement is available to manage the Request For Proposals (RFP) process for any project related FF&E items, and can work to coordinate purchase and install of said items during project completion if desired by NU PM.

**10.6** Consultant shall be able to review and comment on final selections and decisions related to FF&E items obtained through NU Procurement bids.

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# 10

## Furniture, Fixtures and Equipment

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# 11

## Campus Open Space Standards

### Northeastern University Guidelines for Capital Project Design & Implementation

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#### 11.0 CAMPUS OPEN SPACE STANDARDS AND REQUIREMENTS

The Northeastern University Boston Campus is unique. As part of the urban fabric of the City of Boston, the campus is accessible and integrated throughout the surrounding neighborhoods. Open space, once abundant and used for large surface parking areas has become increasingly sparse, reserved for ceremonial spaces and programmed support space. Creating an identity for these open spaces that complement NU structures has been accomplished through various treatments such as landscaping, paving, signage, graphics, and street furnishings, in addition to meticulous maintenance. The university endeavors that such consistent identity shall continue as new facilities develop and existing environments are upgraded.

Open campus areas must continue to be attractive, safe, and multi-functional, all while allowing for utilitarian purposes such as visual openness, free air movement, stormwater drainage or retention, and hidden utility corridors. Landscaping materials must be carefully considered for tolerance within the urban environment with little available sunlight and water, as well as exposure to hazards of urban life such as noxious fumes and residues. Open space and landscape design shall be an inherent part of meeting the university goals for a green and sustainable campus environment. This shall be accomplished through the use of native plant species and materials that are able to withstand the New England environment, harsh weather, varying temperatures, and wear and tear from coastal proximity. Guidelines for selections of landscape and open space materials are as follows:

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# 11

## Campus Open Space Standards

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### 11.1 LANDSCAPE - GROUND COVER / TREES / ACCENTS

- 11.1.1 Shall allow for safe public access, and shall visually connect existing architectural and site elements with the future buildings and parking facilities.
- 11.1.2 The design and selection of all landscape treatments should be integrated into the overall design approach for each site.
- 11.1.3 Special landscape treatments are recommended at primary building entrances and at pedestrian and roadway gateways.
- 11.1.4 Landscape treatments at primary building entrances shall be coordinated with architectural styles, materials, and color schemes.
- 11.1.5 All landscape treatments shall adhere to the principles of sustainable design to the fullest extent possible.

### 11.2 HARDSCAPE - MATERIALS AND METHODS / UTILIZATION

- 11.2.1 Shall allow for safe public access, and shall visually connect existing architectural and site elements with the future buildings and parking facilities.
- 11.2.2 The site shall feature pedestrian and bicycle access along all access points and adjacent roadways.
- 11.2.3 Pedestrian and bicycle mixed use paths shall be no less than 10'-0" wide and shall be separated from the edge of the vehicular roadway by landscape wherever possible.
- 11.2.4 Pedestrian paths not intended to accommodate bicycle traffic shall be no less than 8'-0" in width where possible.

### 11.3 SITE FURNISHINGS AND FIXTURES - MATERIALS / VENDORS

- 11.3.1 **Bicycle Parking** - Buildings shall offer bicycle parking facilities or spaces designated for secure bicycle parking. These spaces should be provided within the parking structure or adjacent to the building.
- 11.3.2 The location of bicycle facilities shall be convenient to academic and housing facilities, but not immediately in front of building and main entrances. Bicycle facilities shall not intrude upon quadrangle and other open spaces in a visually negative manner. Bicycle facilities shall be conveniently, yet unobtrusively located to main entrances in a safe and protected area.



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# 11

## Campus Open Space Standards

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**11.3.3** Seating shall be an integral part of open space design and may take the form of built-in seats or ledges or site seating and shall become part of the FF&E package for all projects where applicable.

**11.3.4** Site furnishings shall include seating, tables, trash and recycling receptacles, bicycle storage / parking, signage posts, and others as dictated by site location and building program. To be determined by university Project Manager.

### **11.4 WALKWAYS - SIZE / PLACEMENT / MATERIALS / SECURITY / COORDINATE**

**11.4.1** Shall allow for safe public access, and shall visually connect existing architectural and site elements with the future buildings and parking facilities.

### **11.5 ROADWAYS - PUBLIC VS. SERVICE / CITY REQUIREMENTS**

**11.5.1** Vehicular paths connect to City streets as required.

**11.5.2** Driveways, setbacks, and view corridors shall conform to City of Boston requirements.

### **11.6. PARKING - SURFACE LOT / ON-STREET**

**11.6.1** Surface parking lots for accessibility and building servicing should be located adjacent to new facility if possible.

**11.6.2** Surface parking areas shall conform to setback, screening and landscape requirements of the City of Boston.

### **11.7 WAYFINDING AND SIGNAGE**

**11.7.1** All wayfinding and signage shall conform to NU standards for graphics and signage.

**11.7.2** Wayfinding messaging shall conform to requirements of the City of Boston.

### **11.8. RECREATIONAL SPACE**

**11.8.1** Outdoor recreational space shall be included in appropriate building programs as space allows.

**11.8.2** Projects specifically programmed as recreational space shall be planned/ considered on a case by case basis.

**11.8.3** Site requirements for active recreational space shall be coordinated with the appropriate campus department for the program.

## **11.9. LIGHTING**

**11.9.1** Site lighting shall be restricted to that required for safety and function, and shall be shielded from adjacent properties and from the sky. Site lighting shall incorporate appropriately selected cut-off light fixtures that meet or exceed the sustainability initiatives, policies, and requirements as outlined in these Design Guidelines.

## **11.10 SECURITY**

**11.10.1** Refer to [Section 5](#) for security and Crime Prevention Through Environmental Design (CPTED) principles.

## **11.11 SNOW REMOVAL / STORAGE**

**11.11.1** Coordinate with University policy for snow removal and storage to ensure adequate storage of snow pile up.

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# 11

## Campus Open Space Standards

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## Document Links

Northeastern University  
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### DOCUMENT LINKS

- [ASTM - STC - E413](#)
- [Audio / Visual and Information Technology Requirements](#)
- [Branding and Logo Guidelines](#)
- [Carpentry Standards\\* \(Updated for 2017\)](#)
- [Educational Institutional Cooperative](#)
- [Facilities Division - Project Controls](#)
- [Green Colleges](#)
- [LEED Registration](#)
- [Marketing and Communications Guidelines](#)
- [Massachusetts Higher Education Consortium](#)
- [NU Boston Master Plan](#)
- [National CAD Standards - V6.](#)
- [NU MEP Design Standards](#)
- [NU MEP Design Standards - Web Page](#)
- [Presidential Climate Commitment](#)
- [Sustainable Practices and Operations Guidelines](#)
- [The Boston Consortium](#)
- [US Communities](#)





Northeastern University

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## Guidelines for Capital Project Design & Implementation

Campus Planning and Development

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Guidelines for Capital Project Design & Implementation

# Northeastern University

Campus Planning and Development

360 HUNTINGTON AVENUE, BOSTON, MA 02115