Boston University Center for Computing & Data Sciences

Town Hall Meeting
Student Residence Focus

Project Briefing and Construction Management Plan
December 3, 2019
Today’s Agenda

Project Introduction
David Zamojski and Walt Meissner

Building Design
Luigi LaRocca, KPMB Architects

Sustainability and Climate Action Plan
Dennis Carlberg, Associate Vice President, Sustainability

Project Impact: What to Expect
  Overview/Project Schedule
  Walt Meissner, Project Executive

  Construction Management Plan
  Chris Kenny and Tom Spall, Project Manager and Superintendent

  Noise and Vibration
  Bryan Sweeney, GeoTech Engineer

Q&A
Center for Computing & Data Sciences

- New home for newly created Faculty of Computing & Data Sciences, Departments of Computer Science and Mathematics & Statistics, and Hariri Institute for Computing
- 19 stories, 345,000 square feet of classroom, lab, and collaboration space on Commonwealth Avenue; construction to begin in spring 2020
- A game changer for BU in the rapidly growing field of data science
Why Does Boston University Need It?

World is more interconnected and data-driven than ever before; rapidly increasing demand from students for relevant courses/majors

Emergence of AI and machine learning, as well as the use of data to boost research across all disciplines

Highly competitive landscape among institutions in this field – one where BU is well-positioned to lead

“Data Scientist” ranked hottest job in US four straight years; rise of data science needs expected to create 11.5 million new job openings by 2026
What the New Building Brings to BU

Enhanced capability for interconnected research by bringing together leaders and emerging scholars from multiple fields under one roof.

Physical capacity for strategic institutional growth in rapidly expanding fields.

Transformative design and sustainability on evolving Charles River Campus cityscape.
Building Design

Luigi LaRocca
Principal, KPMB Architects
A Vertical Campus

- Create spaces of collaboration and solitude
- Synergies of data and people
- Porosity, warmth and vibrancy
- Open ground floor & second floor
- Flexibility
- Develop Departmental Identity
Diagonal Louvers Along Double Bay Depth
A diagonal louver in front of 60% vision glazing is used in the deep floor plate zones to cut out the solar gain and drive daylight deep into the plan.

Saw Tooth Facade Along Single Bay Depth
A vertical sawtooth with 40% vision glazing is used on the shallow single bay depth floor plate zone where daylight does not need to penetrate as deep into the floorplate.
Diagonal Louver Facade Design

Sawtooth Facade Design
The shifted volumes break down the scale into vertical neighborhoods and create outdoor collaboration spaces on all sides of building.
View from Granby St. looking East to Laneway
Laneway view looking southeast to courtyard and interior atrium
View from Laneway looking south to courtyard and interior atrium.
View looking North to East Entrance, Passageway & Bike Shelter
View looking East along Commonwealth Avenue
Typical Tower Floor - Focused Collaboration Spaces
Fifth Floor Pavilion (Evening Event)
Interior view looking East along Commonwealth Avenue

17th Floor Multi-Purpose Event Space / Outdoor Terrace
Project in Context of City
Sustainability & Climate Action Plan

Dennis Carlberg
Associate Vice President, Sustainability
5 Reasons
This Building Will Be BU’s Most Sustainable Yet
Reason #1 Resilient Design

Prepare for Climate Change

First Floor set at 1.25 feet above BU Elevation of Resilience
Reason #2 Energy Efficiency

Diagonal Louver Facade Design

Building Enclosure

Sawtooth Facade Design

Energy Efficiency

Triple Glazing
Reason #2 Energy Efficiency

Ground Source Heat Pump
1. Enhanced HVAC System
2. Chilled Beams
3. 1,500 foot deep geothermal
Reason #3 Fossil Free, Carbon Free

De-carbonizing Energy

<table>
<thead>
<tr>
<th>Base Case</th>
<th>Efficiency</th>
<th>Electrification Geothermal (Fossil Free)</th>
<th>Renewables</th>
<th>Carbon Free</th>
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<tr>
<td>Electricity</td>
<td>Gas</td>
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<td>1,388,488 kg CO₂e</td>
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<td>988,901 kg CO₂e</td>
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<td>Zero kg CO₂e</td>
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Reason #4 Indoor Environmental Quality

Interconnected Spaces
### Reason #5 Climate Leadership

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<tr>
<th>Certification Level</th>
<th>Points Earned</th>
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<td>Certified</td>
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<tr>
<td>Silver</td>
<td>50-59</td>
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<tr>
<td>Gold</td>
<td>60-79</td>
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<tr>
<td>Platinum</td>
<td>80+</td>
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#### LEED Point Distribution

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<th>Category</th>
<th>Certified</th>
<th>Silver</th>
<th>Gold</th>
<th>Platinum</th>
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<td>Integrative Process</td>
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<td>Location &amp; Transportation</td>
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<td>Sustainable Sites</td>
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<td>Water Efficiency</td>
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<td>Energy &amp; Atmosphere</td>
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<td>Materials &amp; Resources</td>
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<td>Indoor Environmental Quality</td>
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<tr>
<td>Innovation in Design</td>
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<td>Regional Priority</td>
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<td><strong>TOTAL</strong></td>
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December 3, 2019
Reason #5 Climate Leadership

City of Boston Climate Action Plan

- Chief of Environment Energy & Open Space
- Sharing Lessons Learned through the Green Ribbon Commission
- Boston Planning & Development Agency Exemplary Project
Reason #1  Resilient Design

Reason #2  Energy Efficiency

Reason #3  Fossil Free, Carbon Free

Reason #4  Indoor Environmental Quality

Reason #5  Climate Leadership

Prepare for Climate Change

Building Enclosure
Building Systems

De-carbonizing Energy
Geothermal

Interconnected Spaces
Materials

Seeking LEED Platinum
City Climate Action Plan
Project Impact - What to Expect

Walt Meissner, Associate Vice President, Operation
Chris Kenney, Project Manager, Compass Project Management
Tom Spall, Project Superintendent, Suffolk Construction
Bryan Sweeney, GeoTech Engineer, Haley & Aldrich
Project Team – Lead Consultants

University Leadership
Jean Morrison, University Provost
Gary Nicksa, Senior Vice President, Operations

Project Management
Walt Meissner, Project Executive
Amy Barrett, Program Lead
Paul Rinaldi, Design Lead
David Flynn, Construction Lead

Government & Community Affairs
Stephen Burgay, Senior Vice President, External Relations
Jake Sullivan, Vice President, Gov & Community Relations
Ken Ryan, Director of City Relations

OPM – Owner’s Project Manager
Compass Project Management

Construction Manager
Suffolk Construction, Pre-Construction

Permitting Services
Fort Point Associates

Architecture / Structure / MEP / Landscape
KPMB Architects
Entuitive, Structural
Bard, Rao + Athanas (BR+A), MEP
Richard Burke Associates, Landscape

Sustainability Engineers
Transsolar Klima Engineering

Civil
Nitsch Engineering

Life Safety and Building Code Services
Jensen Hughes

Geotechnical Services
Haley Aldrich

LEED Consulting
The Green Engineer

Transportation
AECOM
# Construction Milestone Schedule

- **Work Sequence**
- **Activity Expectation**
- **Site Configuration Evolution**

<table>
<thead>
<tr>
<th>ID</th>
<th>Major Milestone Activities</th>
<th>Start</th>
<th>Finish</th>
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<tbody>
<tr>
<td>1</td>
<td>Support of Excavation/ Mass Excavation</td>
<td>3/23/20</td>
<td>10/31/20</td>
</tr>
<tr>
<td>3</td>
<td>Concrete Foundations/ Core Construction</td>
<td>11/1/20</td>
<td>2/28/21</td>
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<tr>
<td>4</td>
<td>Structural Steel/ Superstructure</td>
<td>3/1/21</td>
<td>9/30/21</td>
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<tr>
<td>5</td>
<td>Curtainwall/ Roofing/Building Enclosure</td>
<td>6/1/21</td>
<td>7/31/22</td>
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<tr>
<td>6</td>
<td>Interiors /Finishes</td>
<td>8/1/21</td>
<td>7/31/22</td>
</tr>
<tr>
<td>7</td>
<td>Final Hardscape/Landscaping</td>
<td>6/1/22</td>
<td>9/1/22</td>
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<tr>
<td>8</td>
<td>Construction Completion</td>
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<table>
<thead>
<tr>
<th>Year</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
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<tr>
<td>Excavation Support Complete</td>
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<tr>
<td>Steel Framing/ Floors Complete</td>
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<tr>
<td>Curtain Wall Complete</td>
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Most Disruptive Activities

Less Disruptive Activities

Least Disruptive Activities

*Boston University Data Sciences Center*  
*December 3, 2019*
November 2020 – February 2021

Concrete Foundations/Core Construction
FEB – SEP 2021
CONCRETE AND STEEL SUPERSTRUCTURE

MATERIAL HANDLING

LOADING DOCK DRAWBRIDGE

TO HOIST

H20 DECK

COMM. AVE

GT
JUN 2021 – JUL 2022
CURTAINWALL/ROOFING/SOFFITS

Boston University Data Sciences Center
December 3, 2019
JUN – SEP 2022
FINAL HARDSCAPE/LANDSCAPE

Boston University Data Sciences Center

December 3, 2019
Proposed Building Excavation
Building Excavation

- Fill
- Organics
- Support of Excavation
  - Steel Sheeting (typ.)
- Mat Foundation
- Sand
- Clay

(Odors)
Support of Excavation Sheeting Installation

- Vibratory Equipment
- Sheeting
- Continuous Interlocking Permanent Sheeting
Sheeting - Vibrations Generated vs. Distance

- JUMPING NEARBY
- DOOR SLAM NEXT ROOM
- WALKING NEARBY

DISTINCTLY PERCEPTIBLE TO HUMANS
BARELY PERCEPTIBLE TO HUMANS

WEST SIDE SARGENT BUILDING (VARIES ~20 FT. CLOSEST)
BSR BROWNSTONES (VARIES 50+-100+ FT)
BU BUILDING (SCIENCE LIBRARY)
Sheeting Installation

Limits of Sheeting Installation

Floor Vibration
- People jumping up and down
- Door slam next room
- Walking nearby
Design and Construction Mitigation Measures

- Shallow mat foundation (not driven piles)
- Drilled mini-piles (not driven)
- Pre-excavation along sheeting alignment
- Permanent continuous steel sheeting for excavation support to reduce groundwater drawdown during construction of excavation support (not removed)
- Organic odors ($H_2S$) during building excavation will be mitigated by spray-on odor control product, if necessary
- Instrumentation Program during construction
Communication

- **Project Management Office**
  - Morse Auditorium (602 Commonwealth Ave.) Basement

- **Compass Project Management – Owner’s Project Manager**
  - Chris Kenney – Senior Project Manager
    - (617) 671-8669
  - Luke Apone – Assistant Project Manager
    - (617) 448-9230
Online communications: Facilities website

Page on the Facilities website: www.bu.edu/facilities/

Where to find the page:
- bu.edu/facilities
- Projects
  - Research
    - Data Sciences Center

Information on site:
- Live Camera Feed
- Project Notifications
- Biweekly Schedule Updates
- Logistic Changes
- Deliveries
- High-Impact Activities
  - Example: Noise, closures
Closing Remarks
& Discussion