FEMA FIRM Special Hazard Flood Areas (SFHAs)

- 2009: Zone VE (Flooding with Waves), BFE 19 ft
- 2016: Zone X - Area of Minimal Flood Hazard

University Hall, UMass Boston

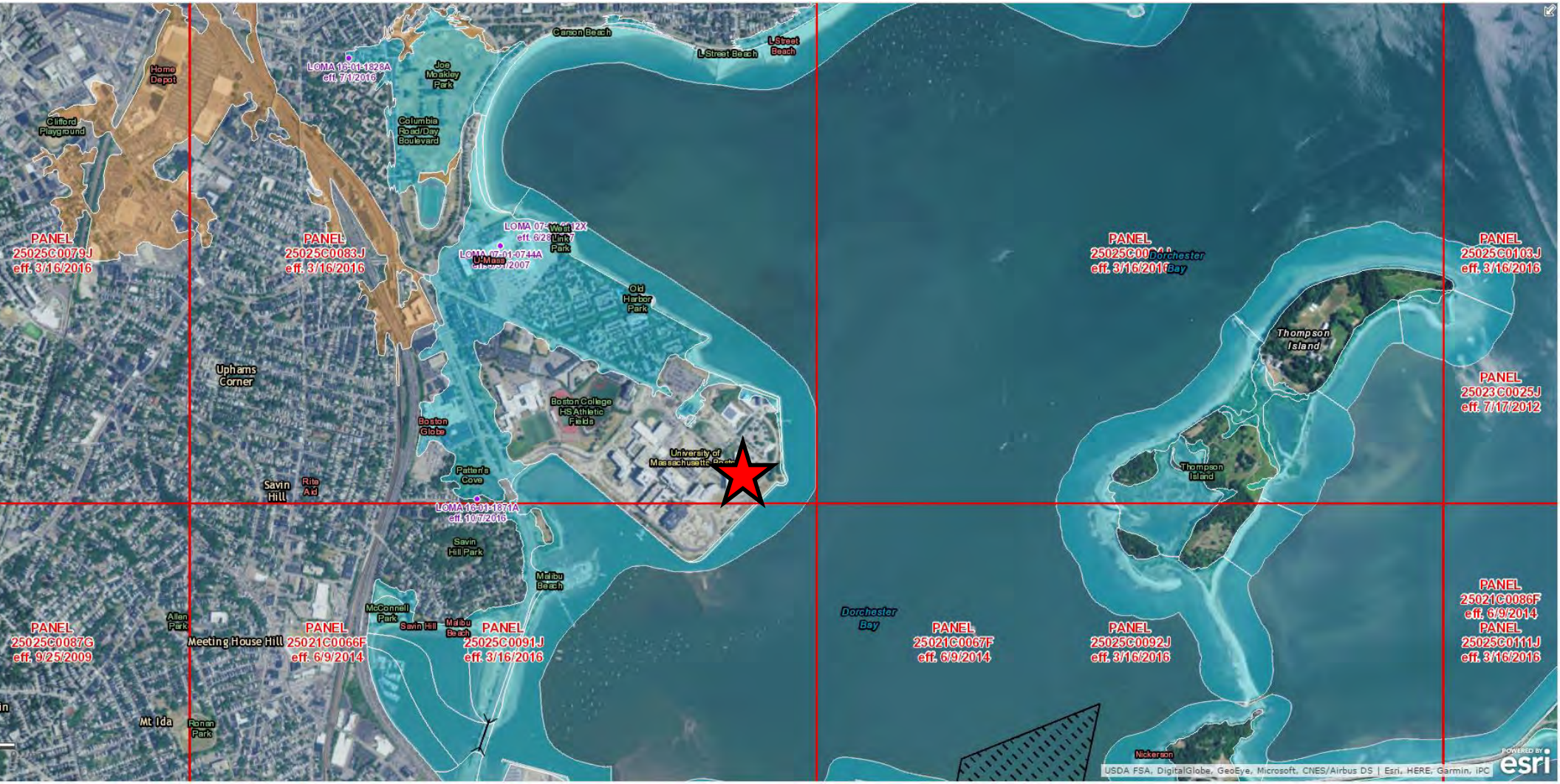
- FEMA BFE 19 ft + 7.5 ft Sea Level Rise

Resilient Design Strategies Implemented:

- Under-Slab Dry Floodproofing (gas & waterproofing membrane)
- Emergency generator and mechanicals in Penthouse
- Hurricane wind resistant structure and building envelope

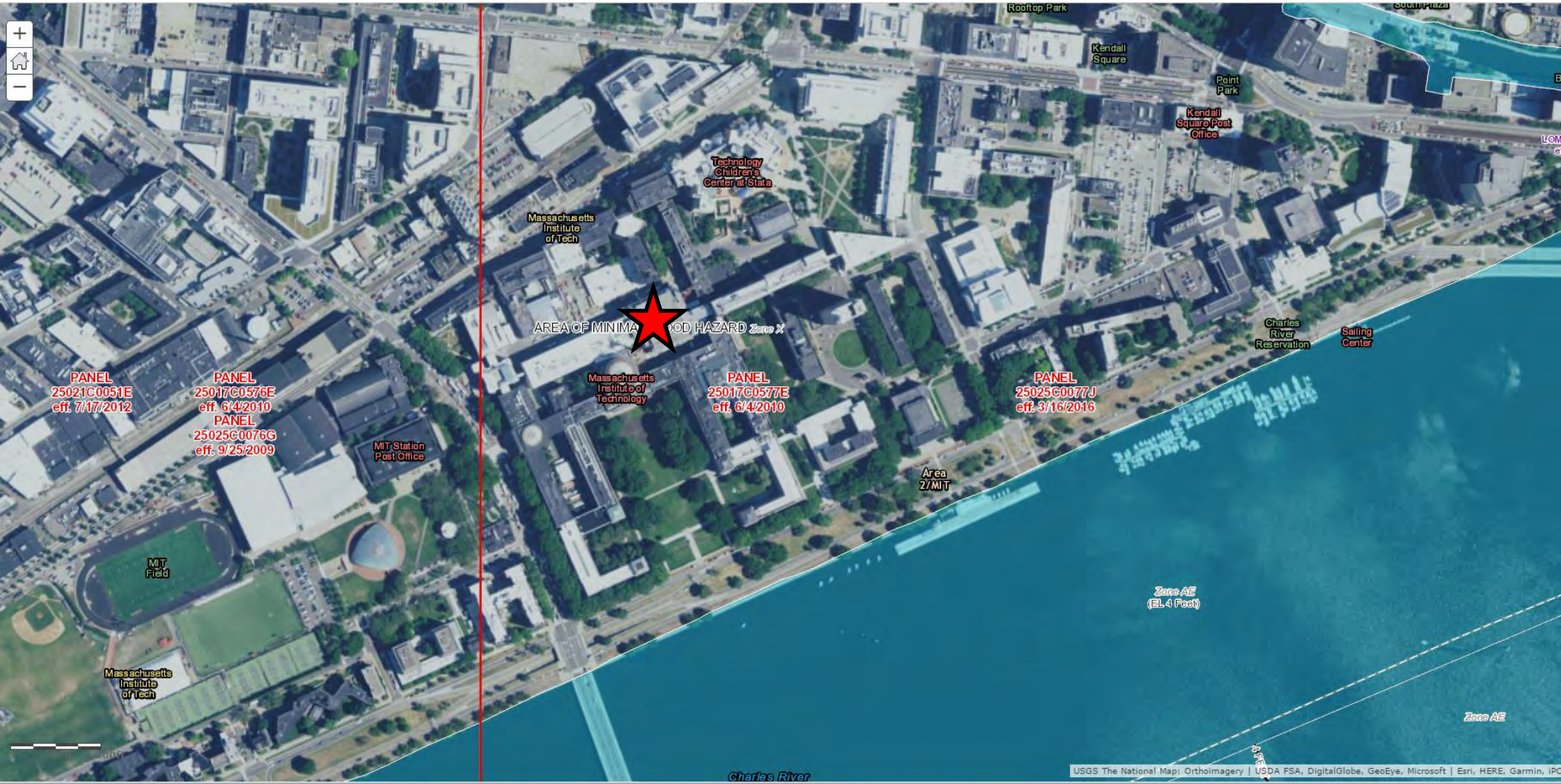
Dorchester Bay, FEMA FIRM Flood Map

- SFHA Zone AE Surrounds the UMass Boston Campus
- Will UMass Boston become an "Island of Resilience"?



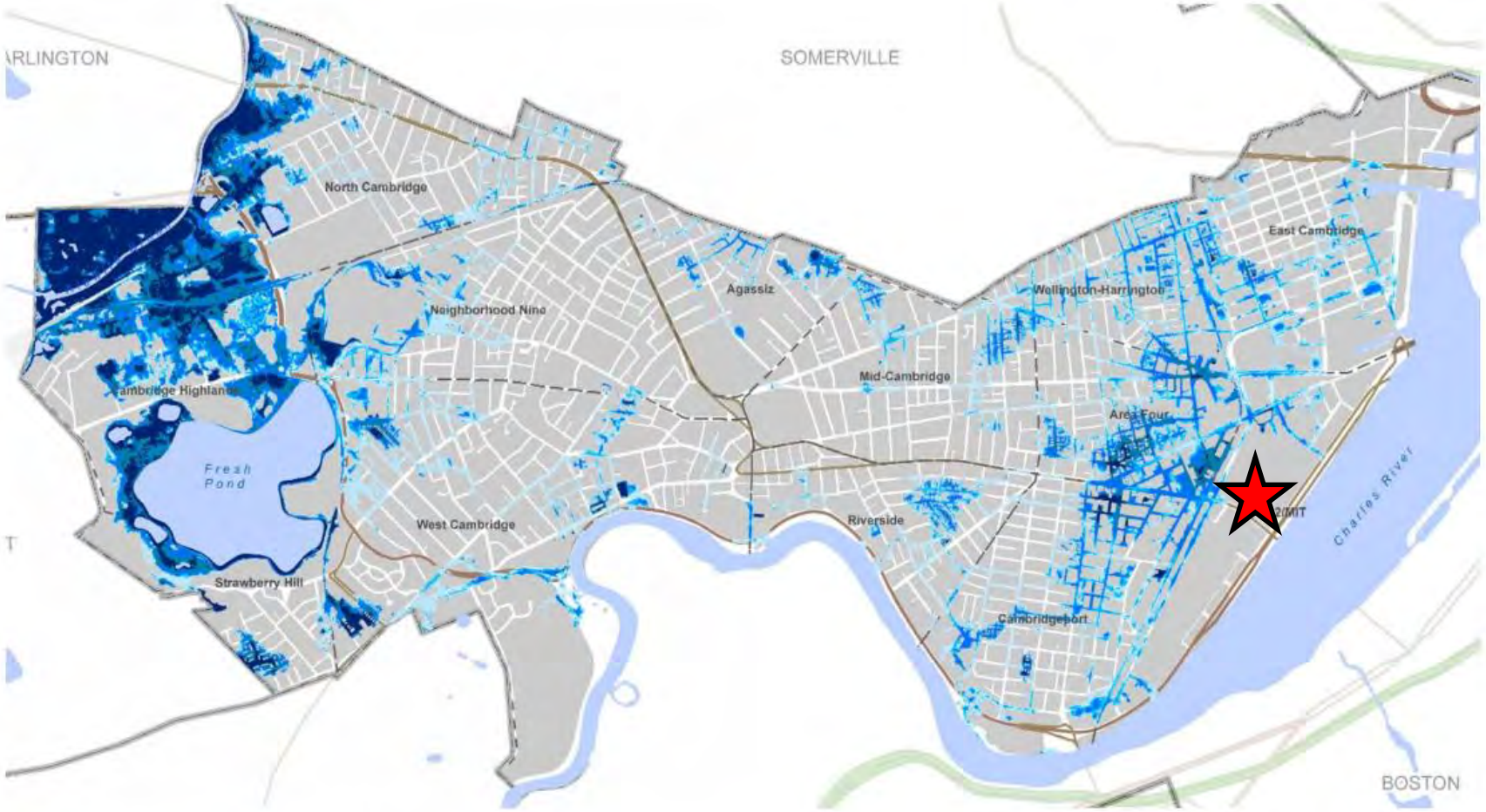
FEMA FIRM Flood Map SFHAs

- Zone X - Area of Minimal Flood Hazard
- Charles River Maintained at El. 12-13 ft.
- MIT Main Group (1916) Basement El. 17 ft. ("BFE +4 ft")



Precipitation Flooding – *2070*

INLAND FLOODING

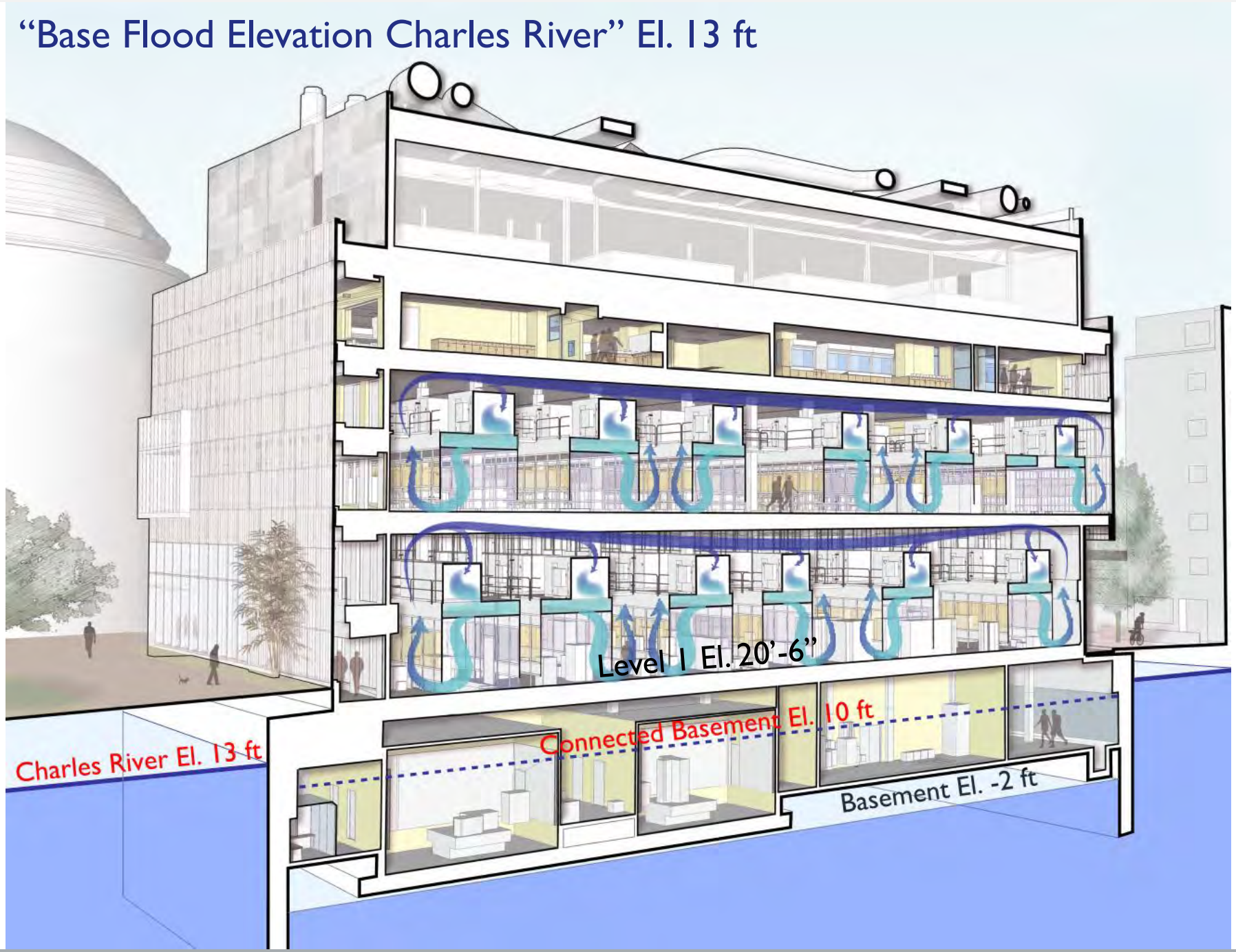


Depth of flooding above ground (ft)

- 0 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- 2.0 - 3.0
- > 3.0

100 year 24-hour storm
(11.7 inches over 24 hours)
Manhole flooding by MWH, Riverine flooding by VHB

The CCVA Report


"Base Flood Elevation Charles River" El. 13 ft
Level 1 El. 20'-6"
Connected Basement El. 10 ft
Charles River El. 13 ft
Basement El. -2 ft

Flood Mitigation Strategies Implemented:

- Dry floodproofing (slurry walls & waterproofing)
- Electrical substations moved up from Basement to L5 and L6
- Emergency generator fuel oil pump elevated 6 feet in Basement
- Emergency generator and mechanicals in L6 Penthouse and on Roof

IYRS School of Technology & Trades

New Structure for Marine Systems and Composites Programs

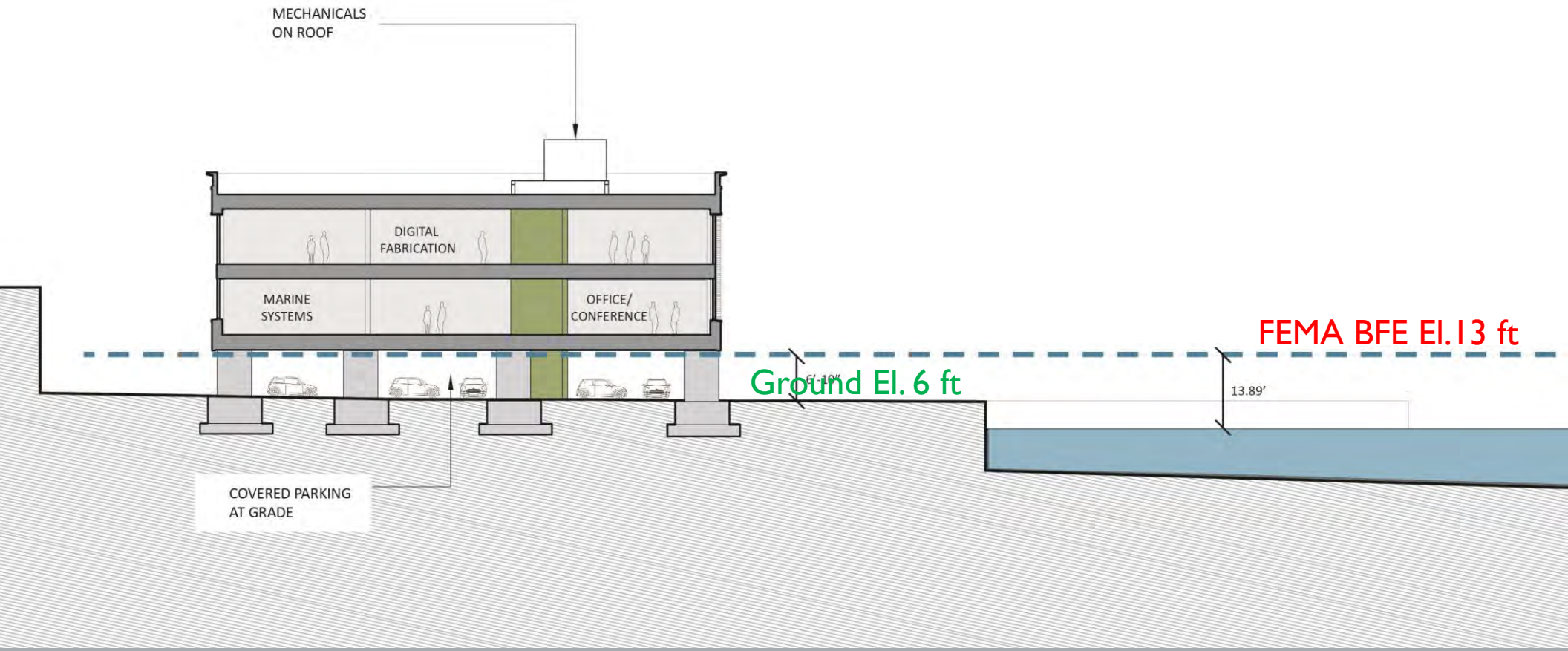
Spring Wharf, Newport, RI

FEMA FIRM Flood Map

- 2013: SFHA Zone VE (BFE 13 ft)
- Foundation Scour Depth 4.5 ft

IYRS New Structure, Spring Wharf, Newport, RI

- FEMA FIRM Zone VE (flooding with wave action)
- Base Flood Elevation (BFE) 13 ft
- First floor El. 16.75’ (BFE +3.75’)
- Mechanical equipment on roof
- Backflow preventer on sewer connection



Resilient Design Features:

- First floor FEMA BFE +3.75’
- Flood and wind resistant structure and exterior envelope

Resilient Design Features:

- Mechanical equipment on roof
- Backflow preventer on sewer connection
- Flood and wind resistant structure and exterior envelope