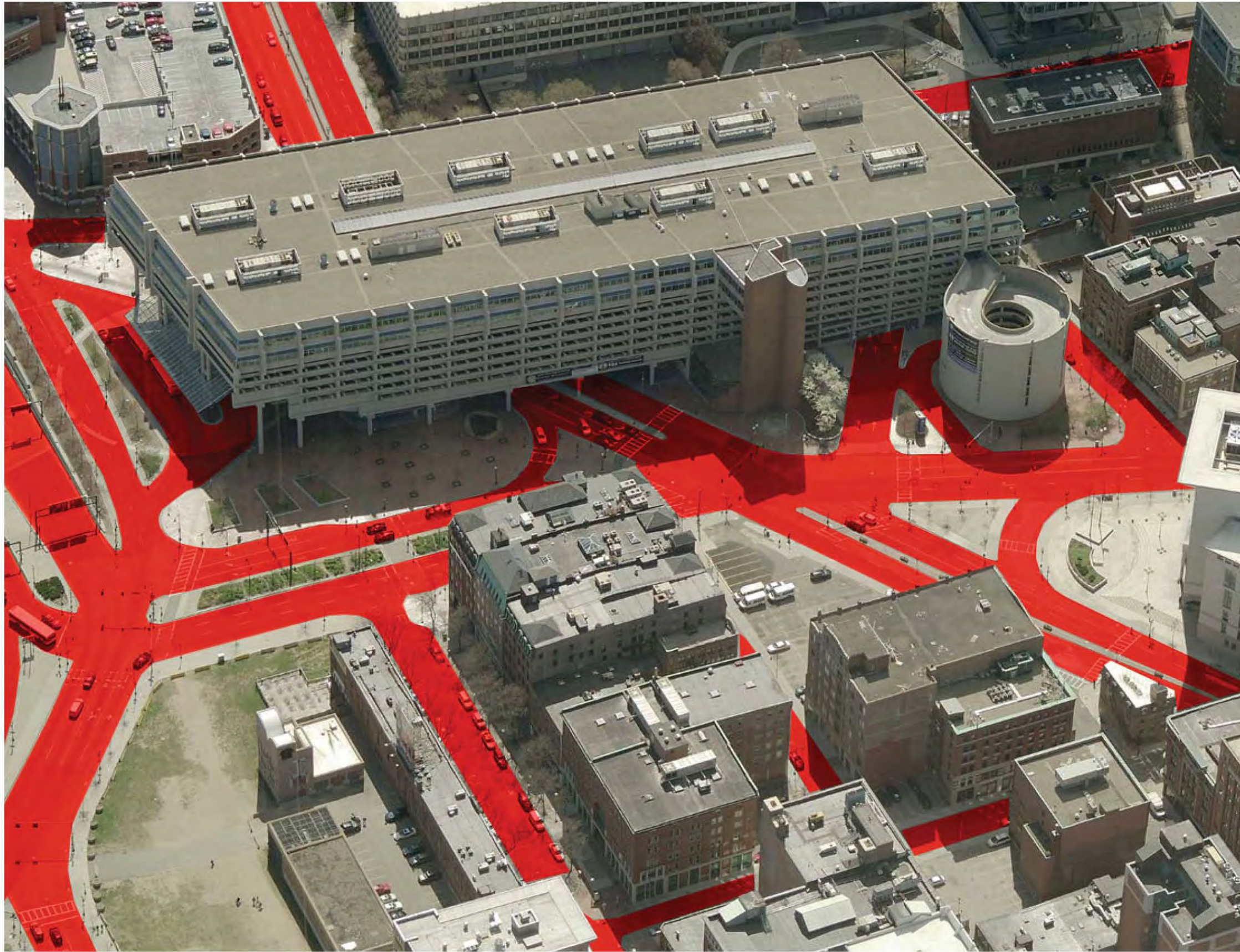




One Congress Redevelopment - BCDC Design Package
Boston, MA

CONTEXT PHOTOS



Aerial View



View from Congress Street

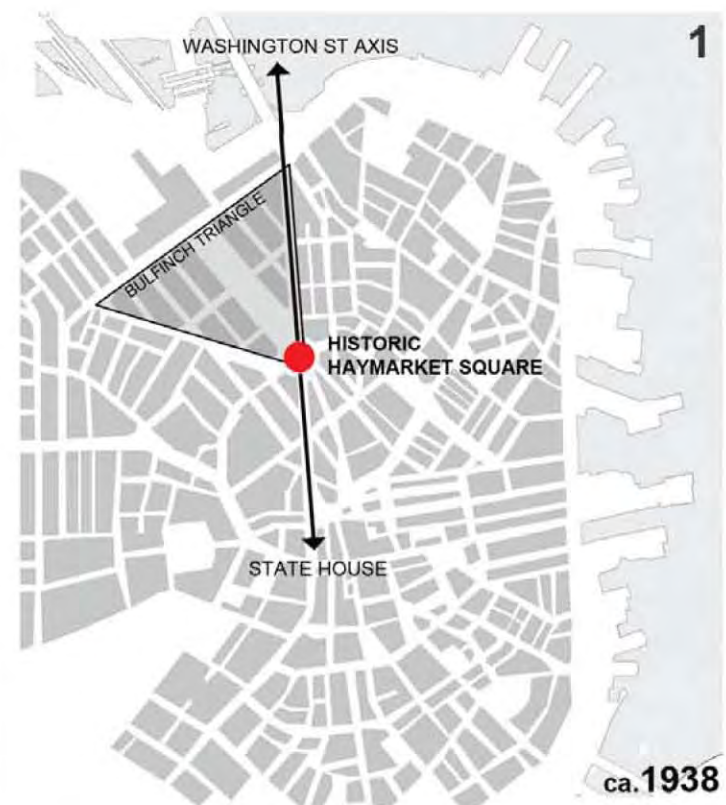


View from New Sudbury Street

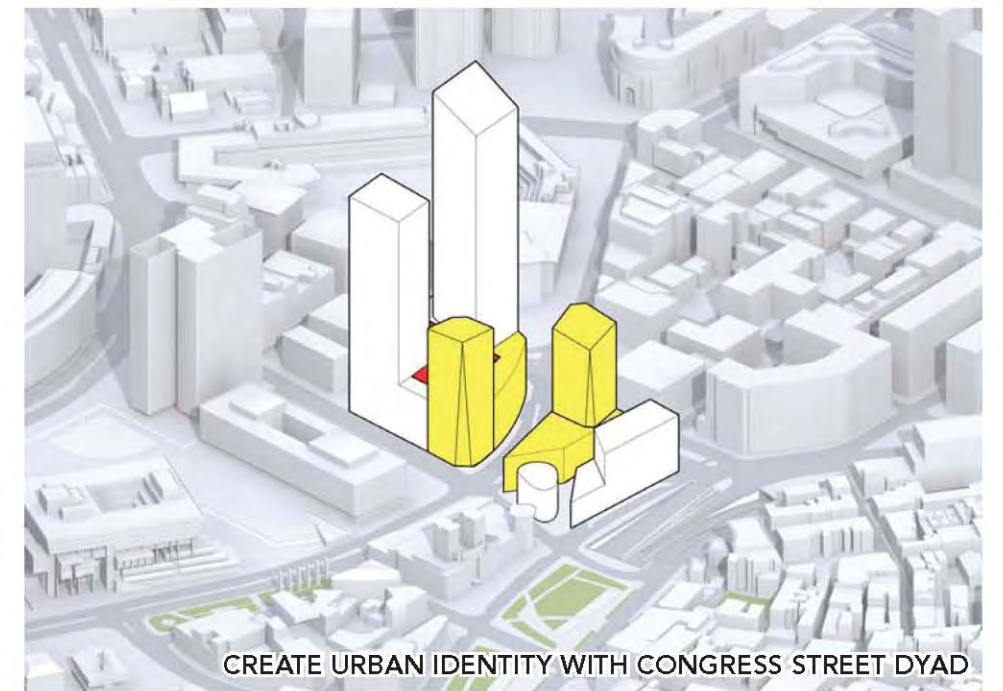
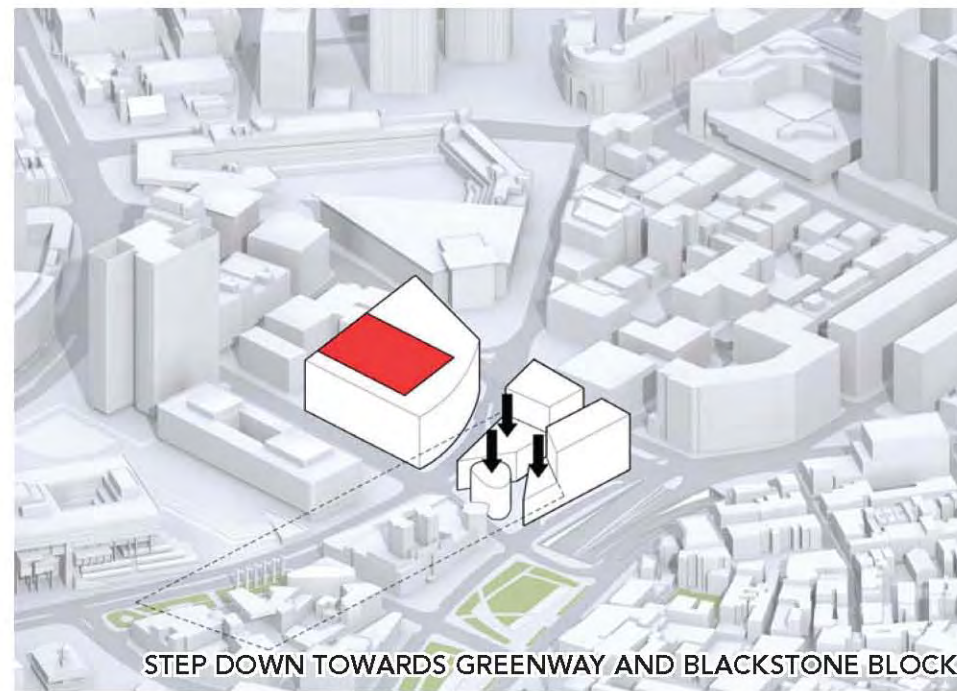
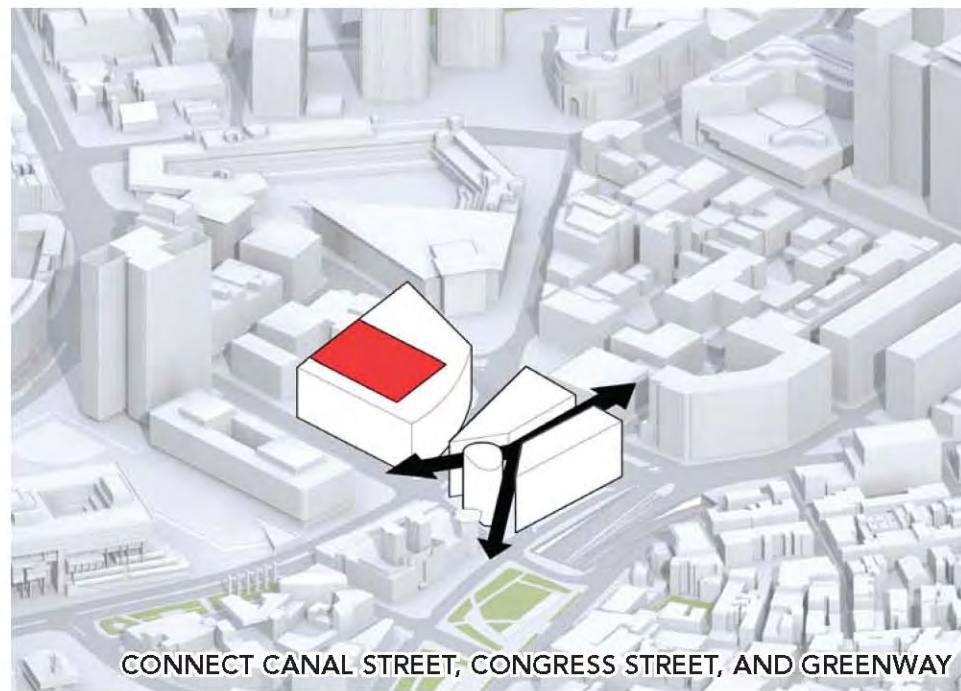
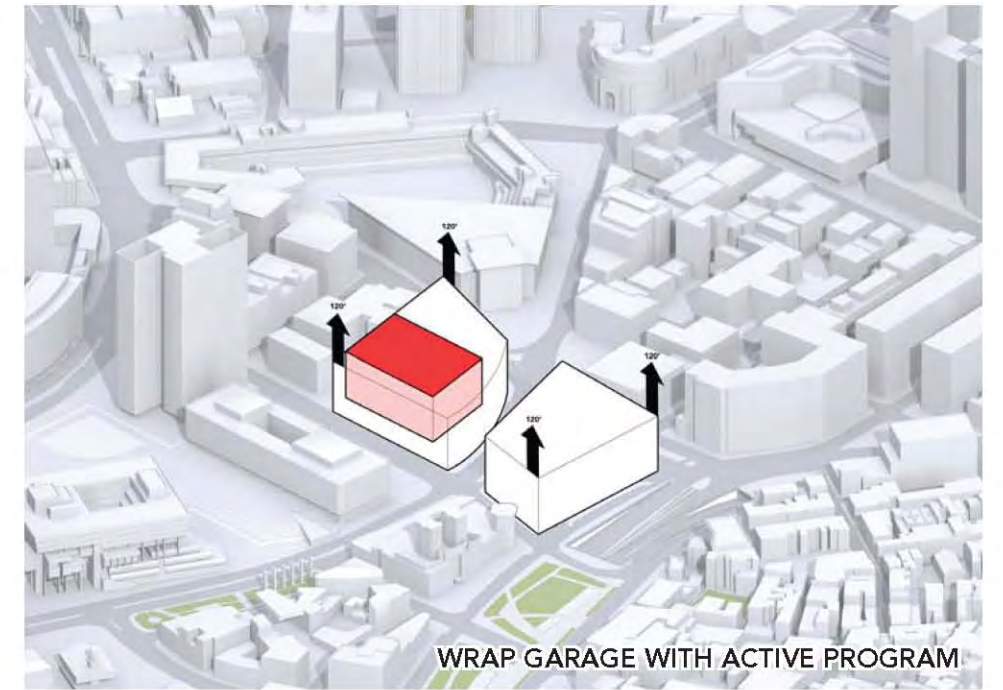
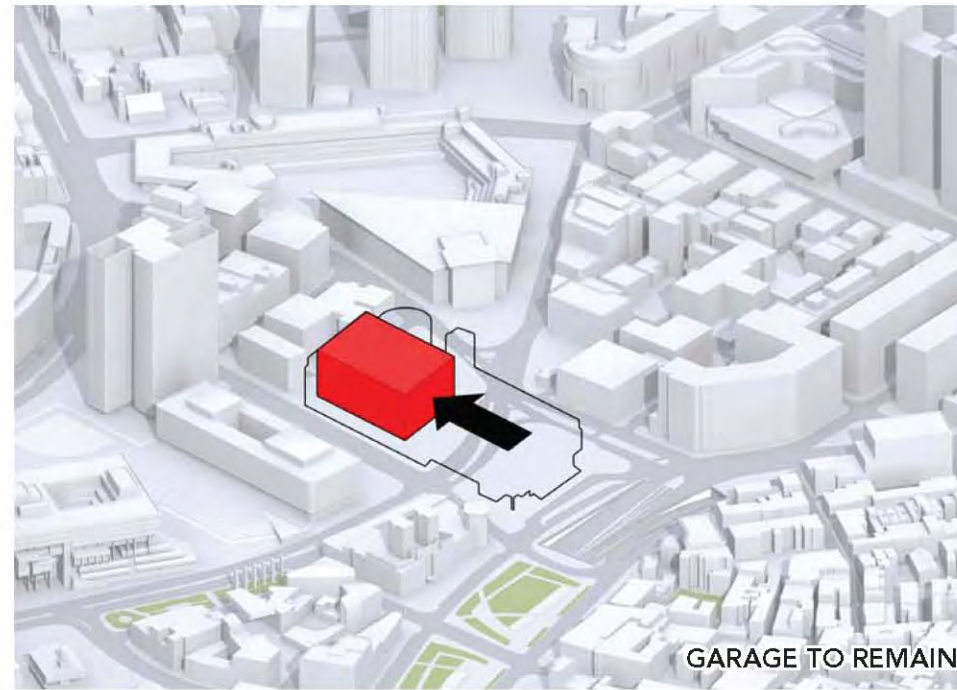
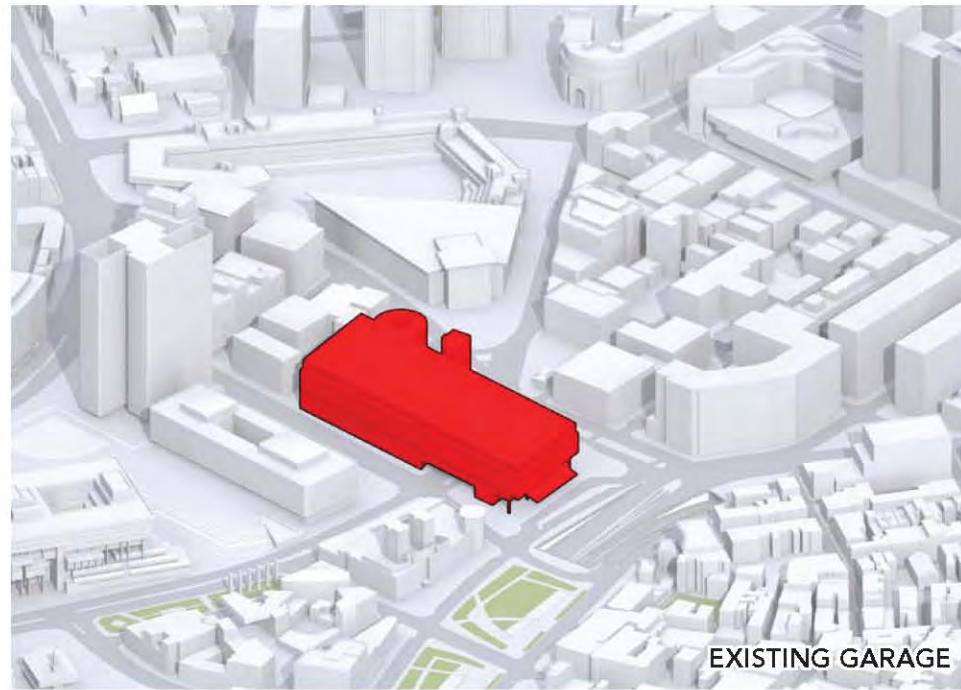


View from Canal Street extension

SITE ORIENTATION AND HISTORY



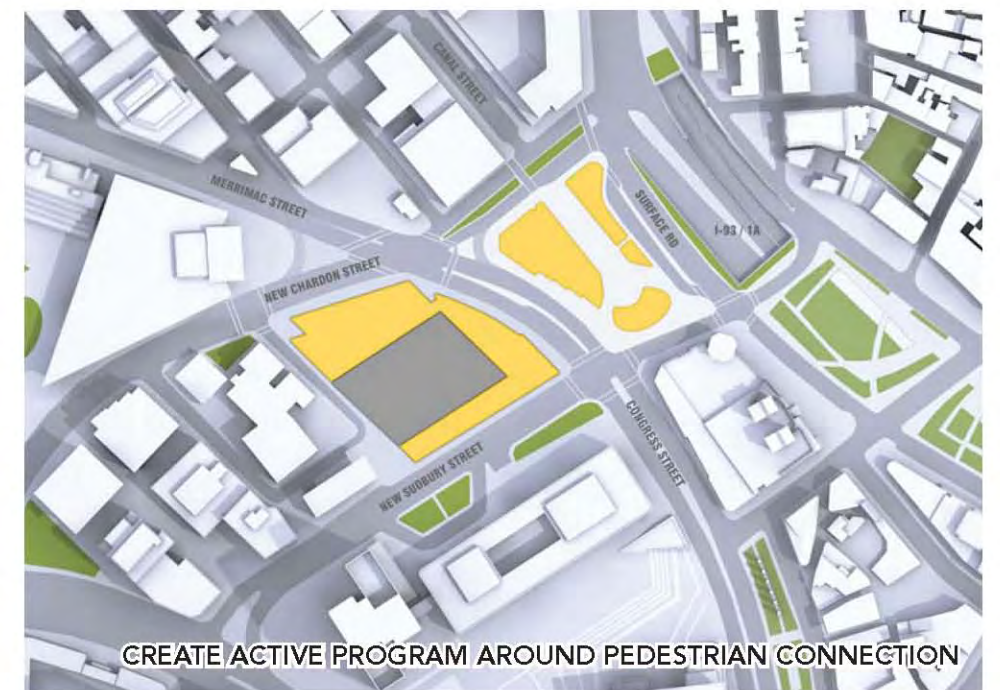
MASSING STRATEGY



OVERALL MASSING



SITE STRATEGY



PUBLIC REALM PLAN



- PARKING
- BACK OF HOUSE
- HOTEL
- RESIDENTIAL
- OFFICE
- RETAIL

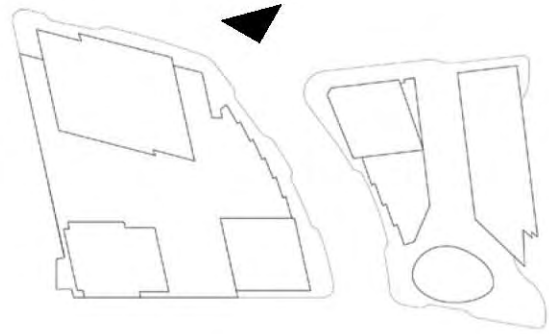
ROOF PLAN



TRANSFORMATIVE PUBLIC REALM



APPROACH

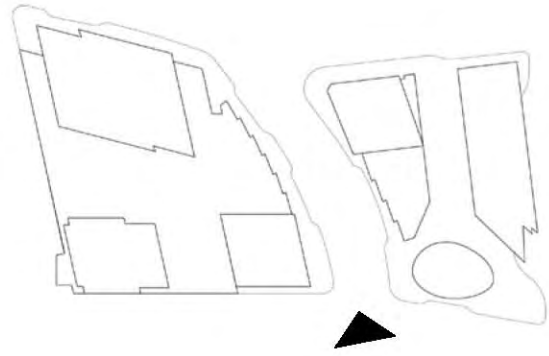


Before



After

APPROACH

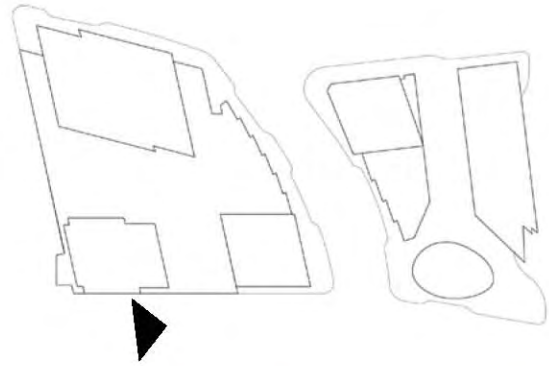


Before



After

APPROACH

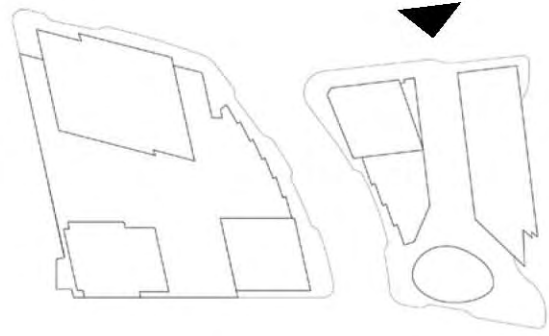


Before

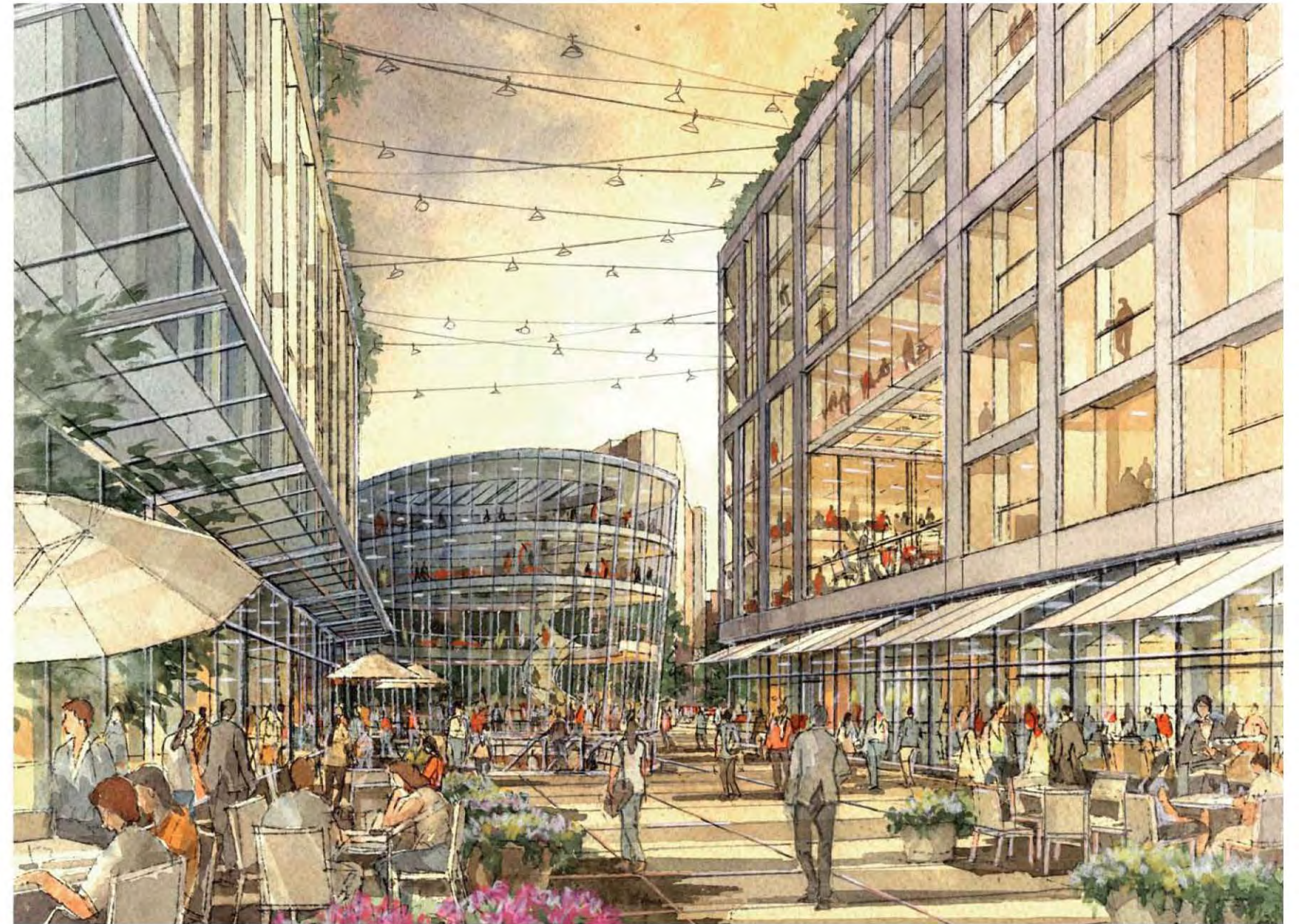


After

APPROACH



Before



After

SKYLINE



Before

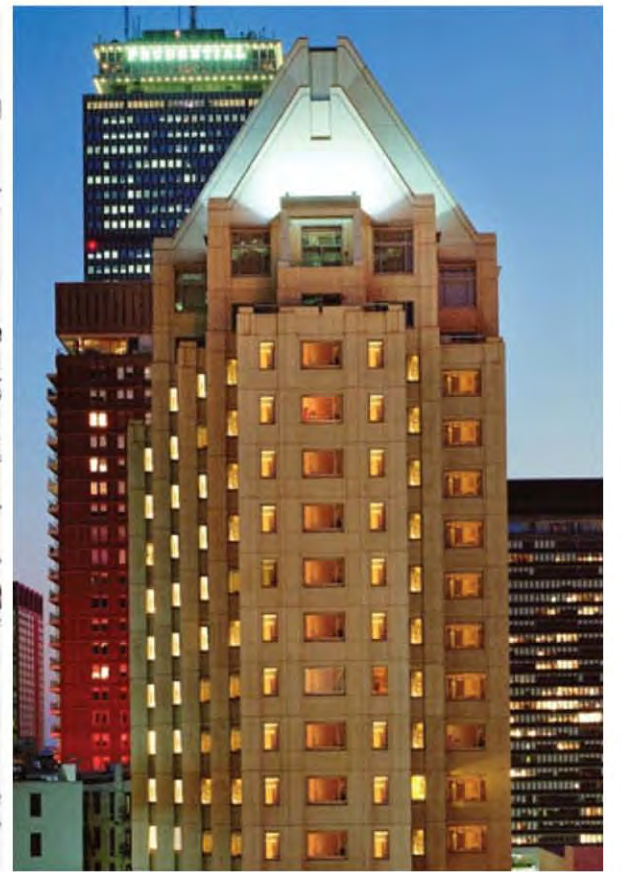


After

PRECEDENTS - SLENDER BUILDINGS



PRECEDENTS - MASSING GEOMETRIES



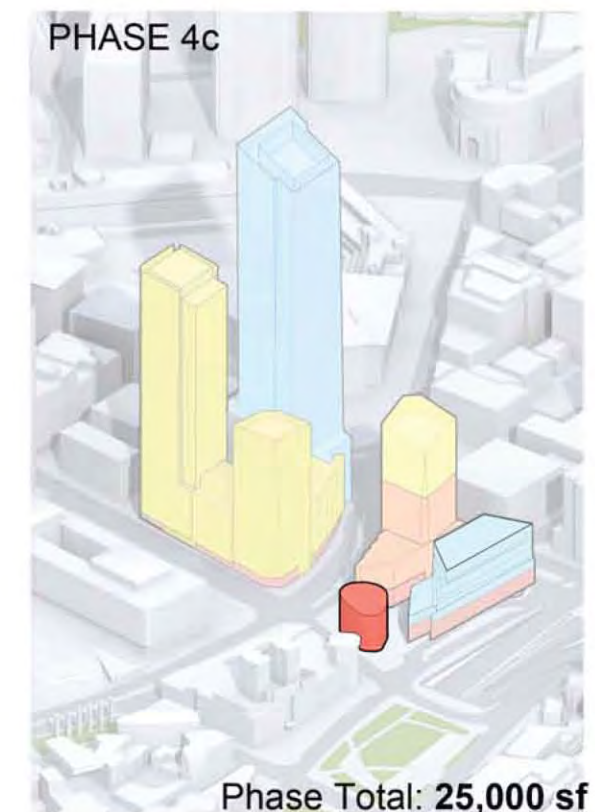
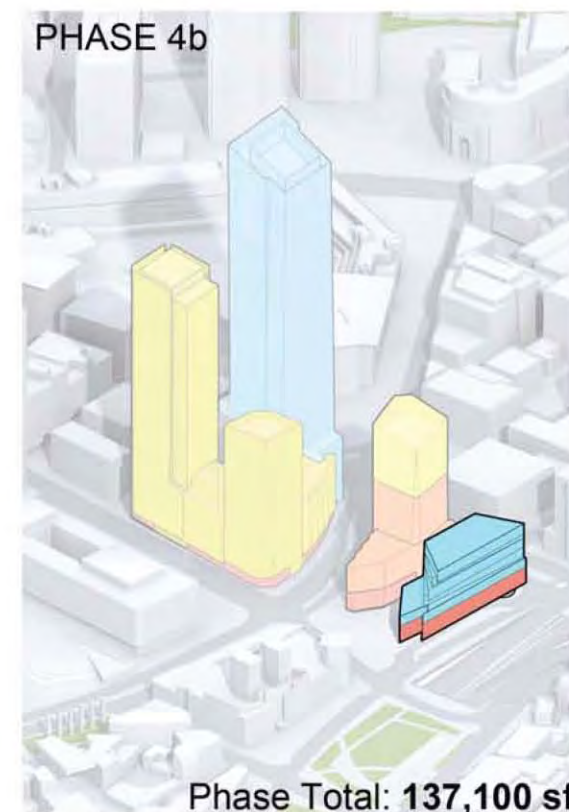
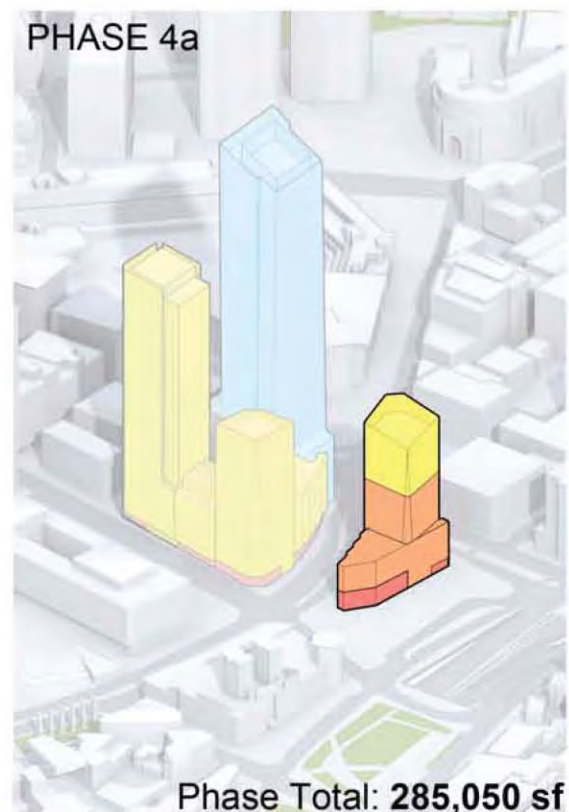
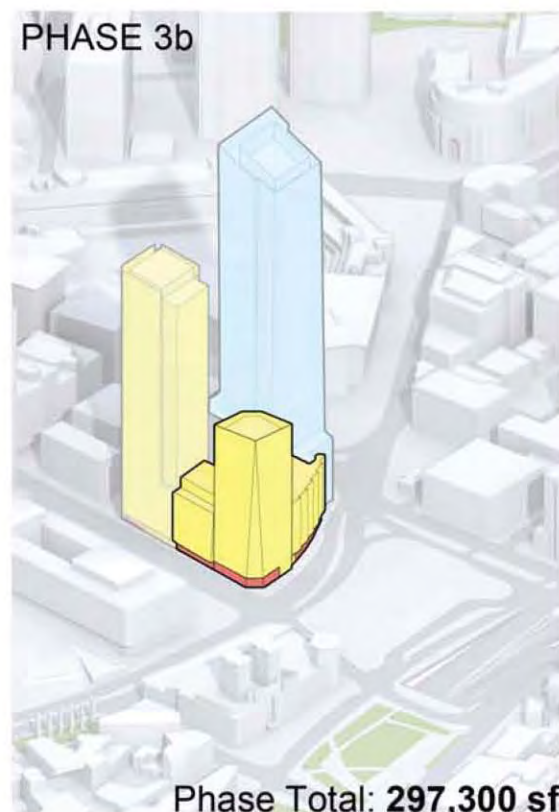
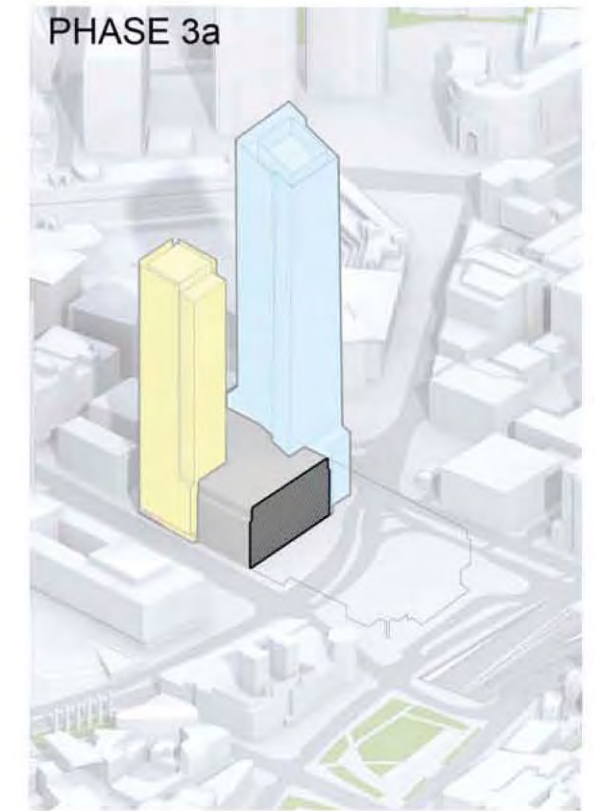
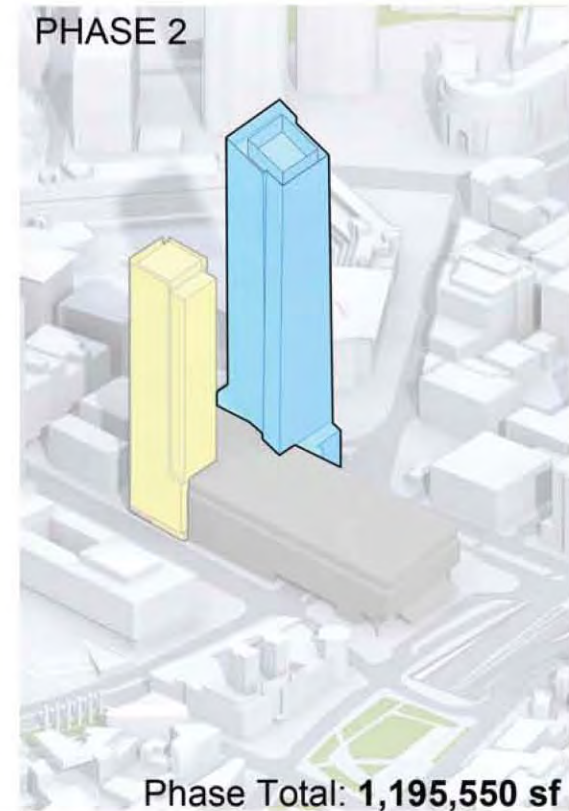
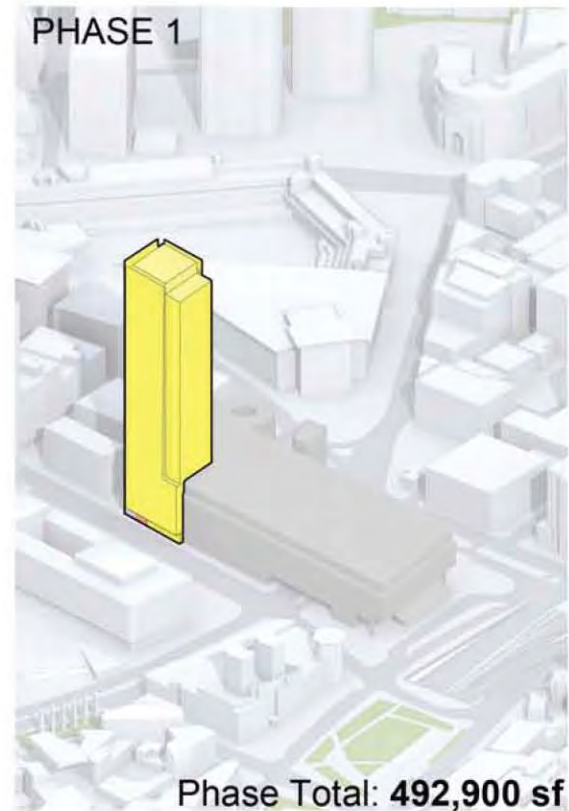
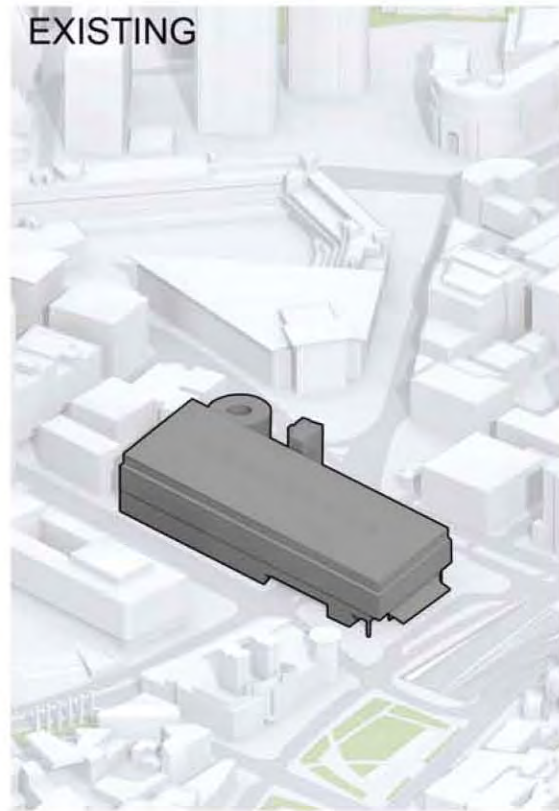
PRECEDENTS - FENESTRATION



PRECEDENTS - GROUND PLANE ACTIVATION



PHASING



residential office retail hotel existing garage

PHASING



Phase 1



Phase 3



Phase 2



Phase 4

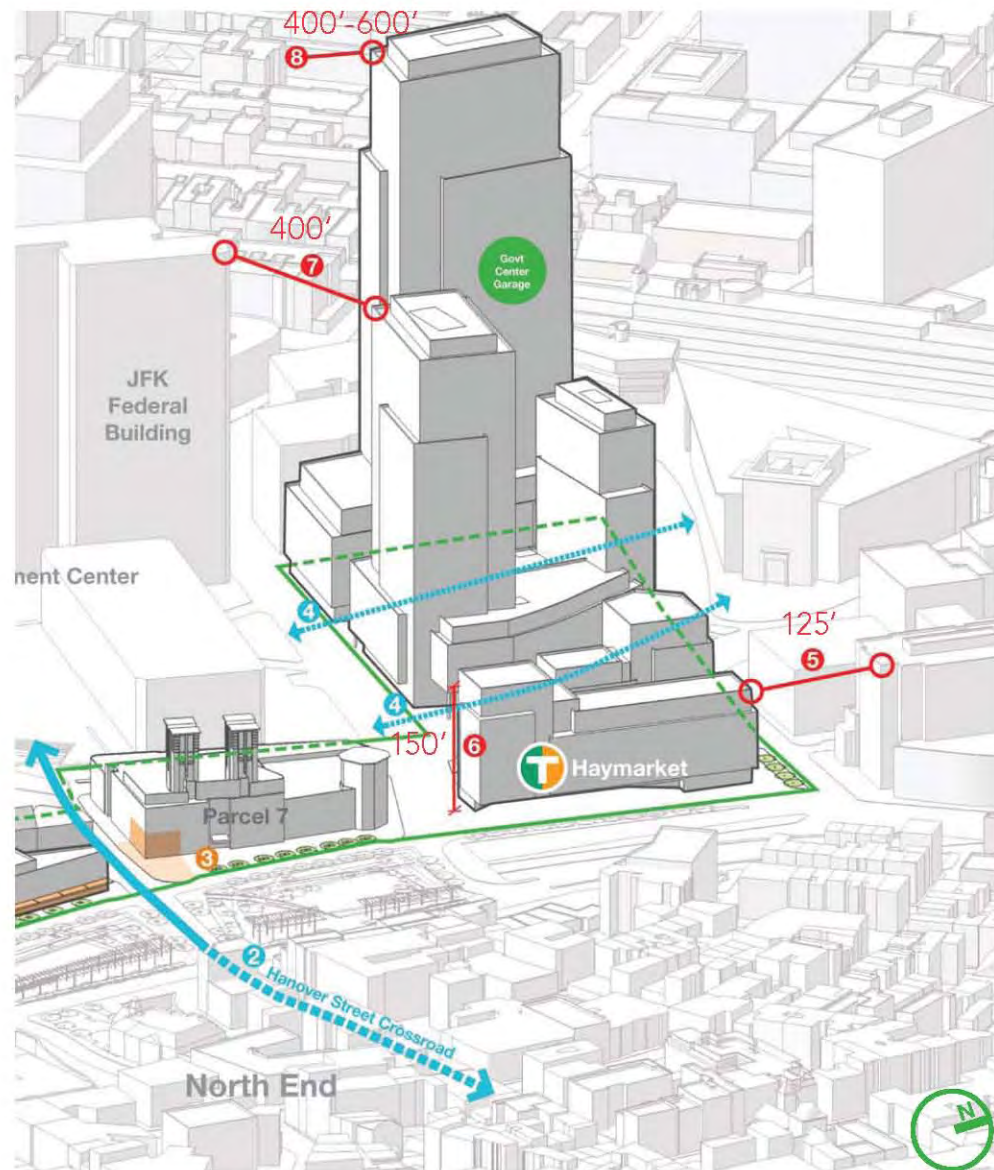
GREENWAY DISTRICT GUIDELINES

Dimensional Criteria

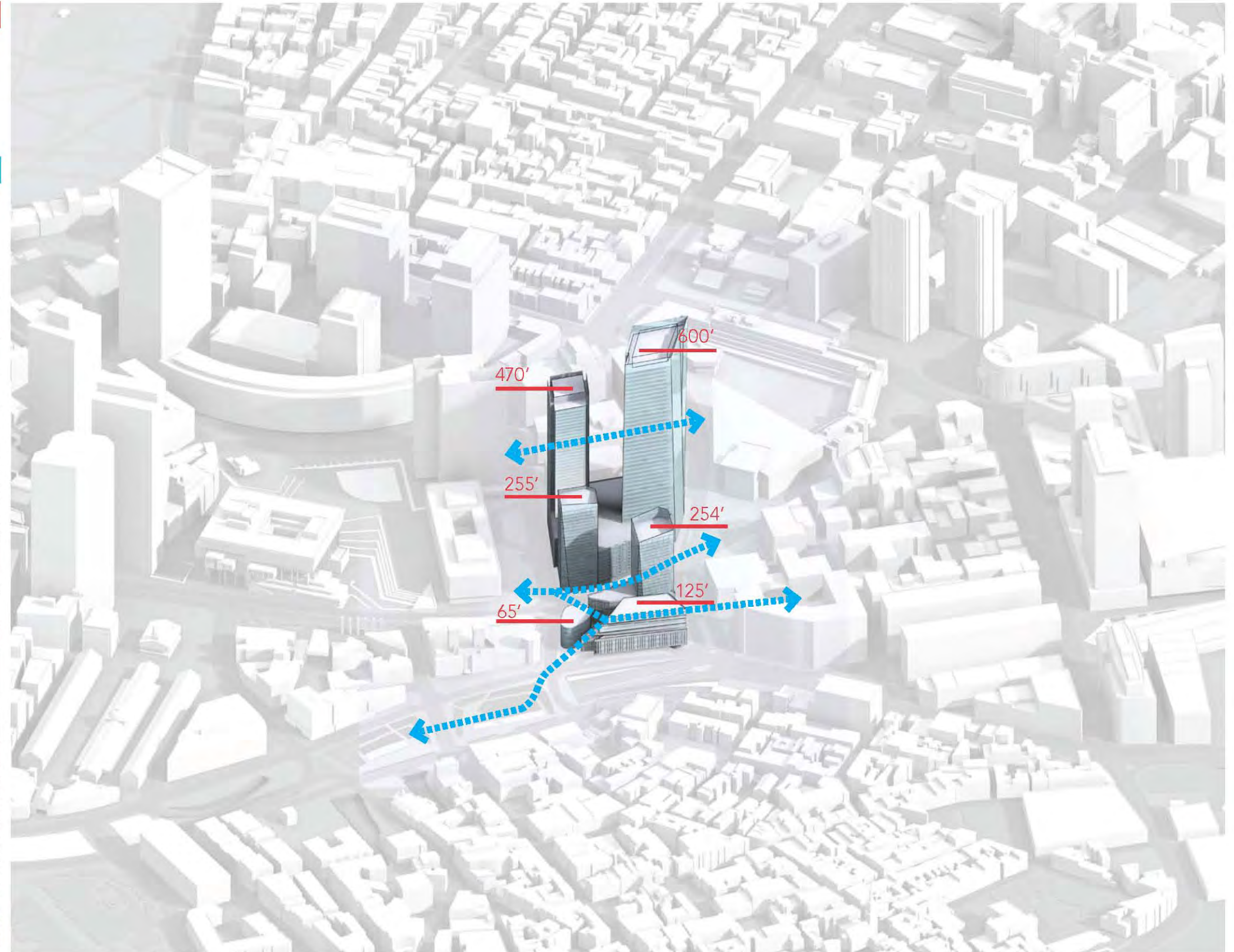
- 5 125' to correspond with the heights in the Bulfinch Triangle.
- 6 150' at the New Sudbury Street corner of the existing Government Center Garage.
- 7 400' or approximately aligned with the taller portion of the JFK Federal Building.
- 8 400-600' matching the tallest buildings in the Downtown.

Connectivity

- 4 North-South connections between the Government Center Garage site and the Bulfinch Triangle will link the Market District to this important mixed-use and entertainment zone, and to the critical transportation hubs at Haymarket and North Station.

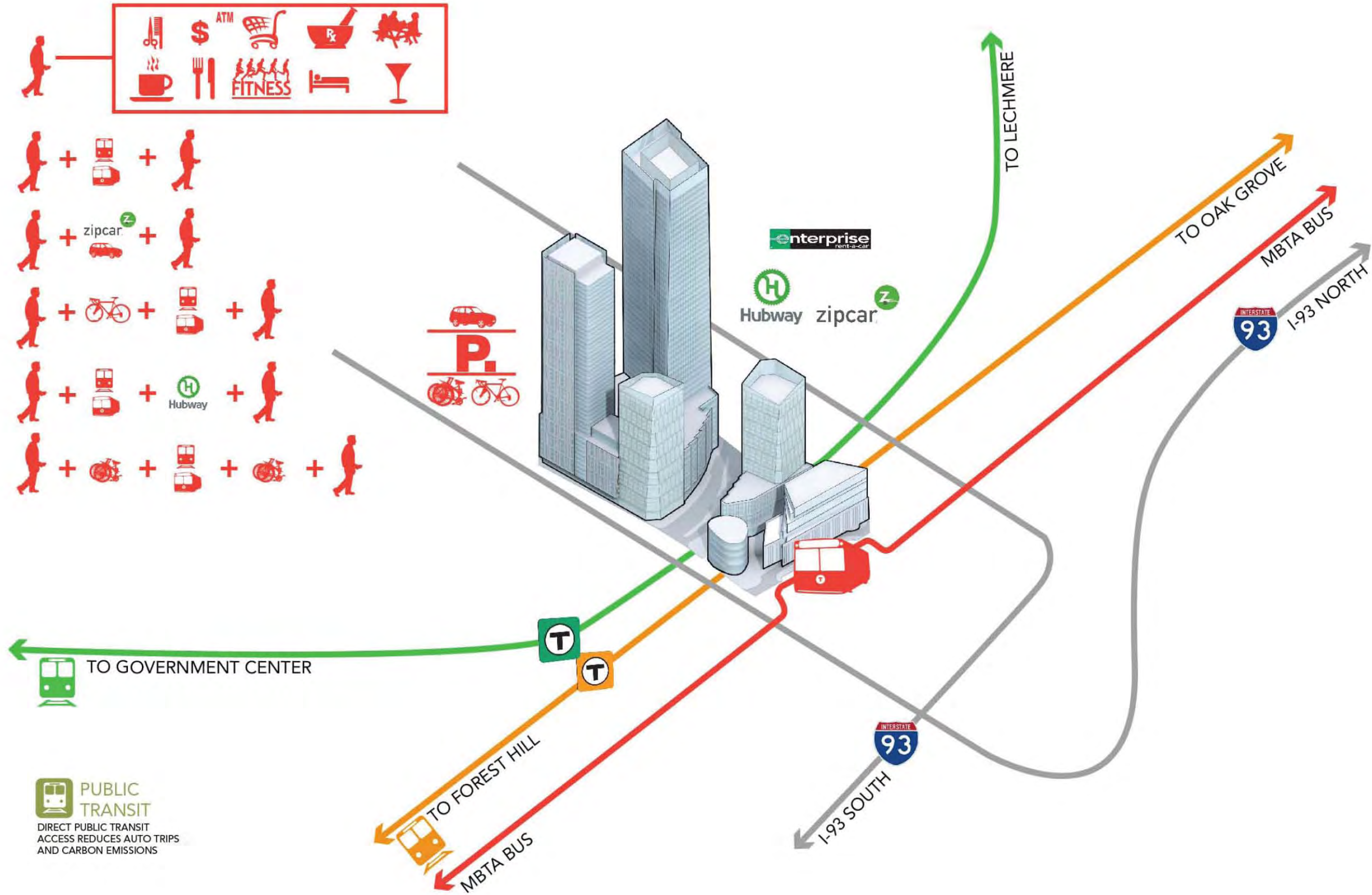


BRA Greenway Study & Guidelines



Proposed

SUSTAINABILITY - MOBILITY HUB



SUSTAINABILITY - ACTIVE AND PASSIVE BUILDING SYSTEMS

ENERGY RECOVERY VENTILATION

ENERGY RECOVERY PROCESS OF EXCHANGING THE ENERGY CONTAINED IN NORMALLY EXHAUSTED BUILDING OR SPACE AIR AND USING IT TO TREAT THE INCOMING OUTDOOR VENTILATION AIR IN HVAC SYSTEMS.



TRANSPIRED SOLAR COLLECTORS

EXPLORING USE OF TRANSPIRED SOLAR COLLECTORS AT INTAKES TO PREHEAT FRESH AIR AND THEREFORE, REDUCE THE NEED FOR ENERGY TO PREHEAT THE AIR.

DEMAND CONTROLLED VENTILATION

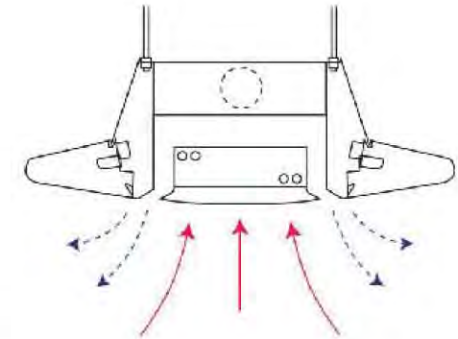
THE FAN SPEED IS CONTROLLED BY THE PERCENT OF CO2 IN THE EXHAUST STREAM: THE MORE THE CO2, THE FASTER THE FAN RUNS ON THE FRESH AIR SIDE TO SUPPLY MORE FRESH AIR.

NATURAL VENTILATION

HIGH AND LOW LEVEL OPERABLE OPENINGS IMPROVE NATURAL VENTILATION FOR RESIDENTIAL TOWERS

ACTIVE CHILLED BEAM SYSTEMS

A CHILLED BEAM SYSTEM IS A HYDRONIC (I.E. WATER) INDUCTION SYSTEM AND TYPICALLY USES LESS ENERGY THAN AN 'ALL-AIR' SYSTEM (I.E. VAV). IT'S SIMILAR TO A FIN TUBE RADIATOR PERIMETER HEATING SYSTEM JUST USED FOR COOLING AND LOCATED IN THE CEILING. ACTIVE CHILLED BEAM SYSTEMS CONSIST OF WATER COOLED FINNED TUBE CONVECTORS WITH A LOW AIR SUPPLY TO GET THE HIGHEST COOLING CAPACITY. THE ENERGY SAVINGS ARE REALIZED THROUGH HIGHER CHILLED WATER TEMPERATURES USED AND LOWER AIR SUPPLY RATES / FAN ENERGY.



LOW PRESSURE FANS

BALANCE FAN PRESSURE WITH DUCT SIZING TO OPTIMIZE VENTILATION SYSTEM AND LOWER ENERGY USE.

VARIABLE SPEED DRIVES

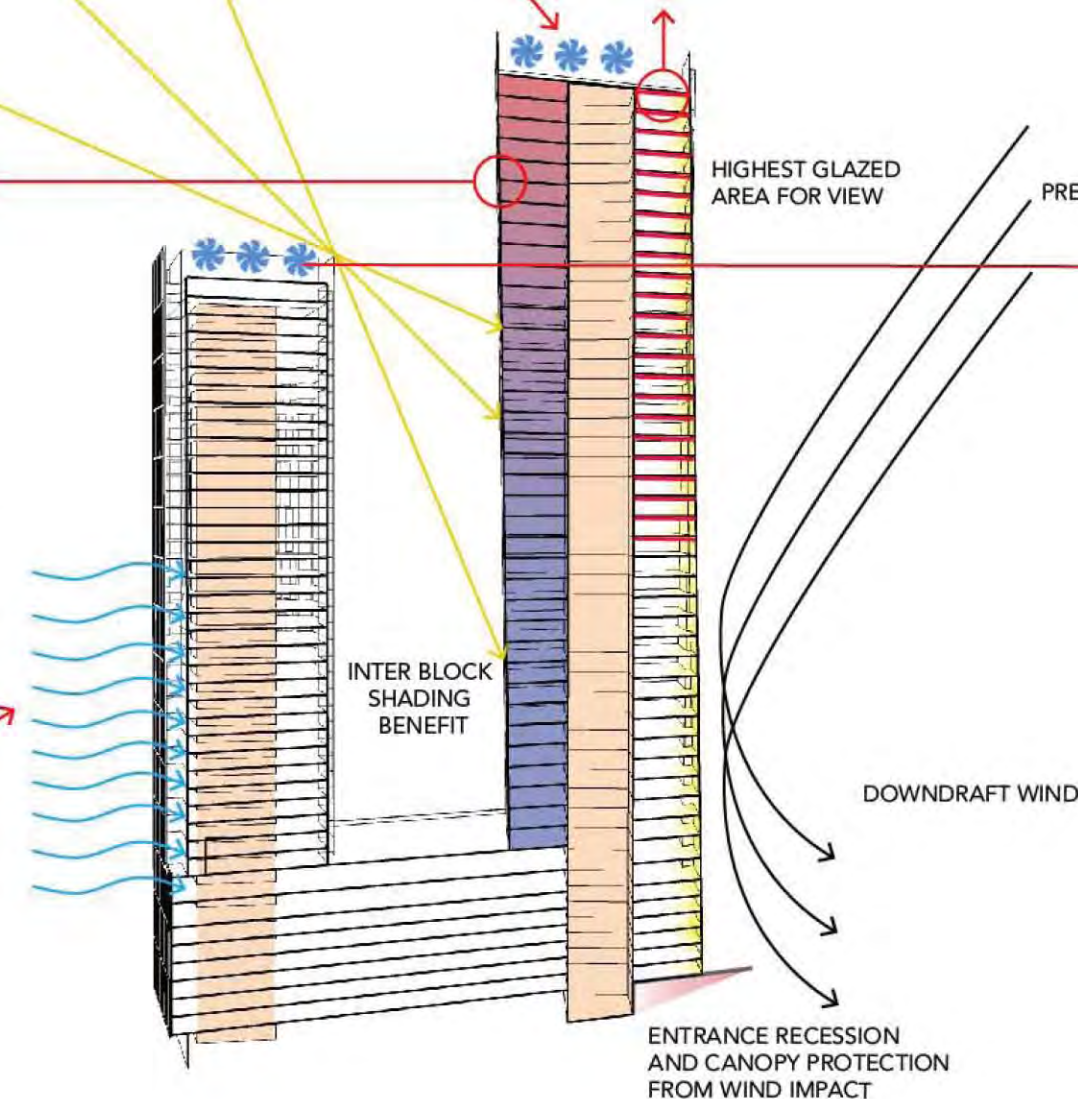
VSDS ALLOWS SYSTEMS TO RESPOND TO DEMAND AND SAVE ENERGY.

WATER

RAINWATER COLLECTED AND REUSED FOR COOLING TOWER MAKE-UP WATER.

LIGHTING CONTROL

ENERGY EFFICIENT LIGHTING CONTROLS. PHOTOSENSORS WITH DIMMABLE SWITCHES IN DAYLIGHT ZONE AND OCCUPANCY SENSORS THROUGHOUT.



SUSTAINABILITY - BUILDING ENVELOPE



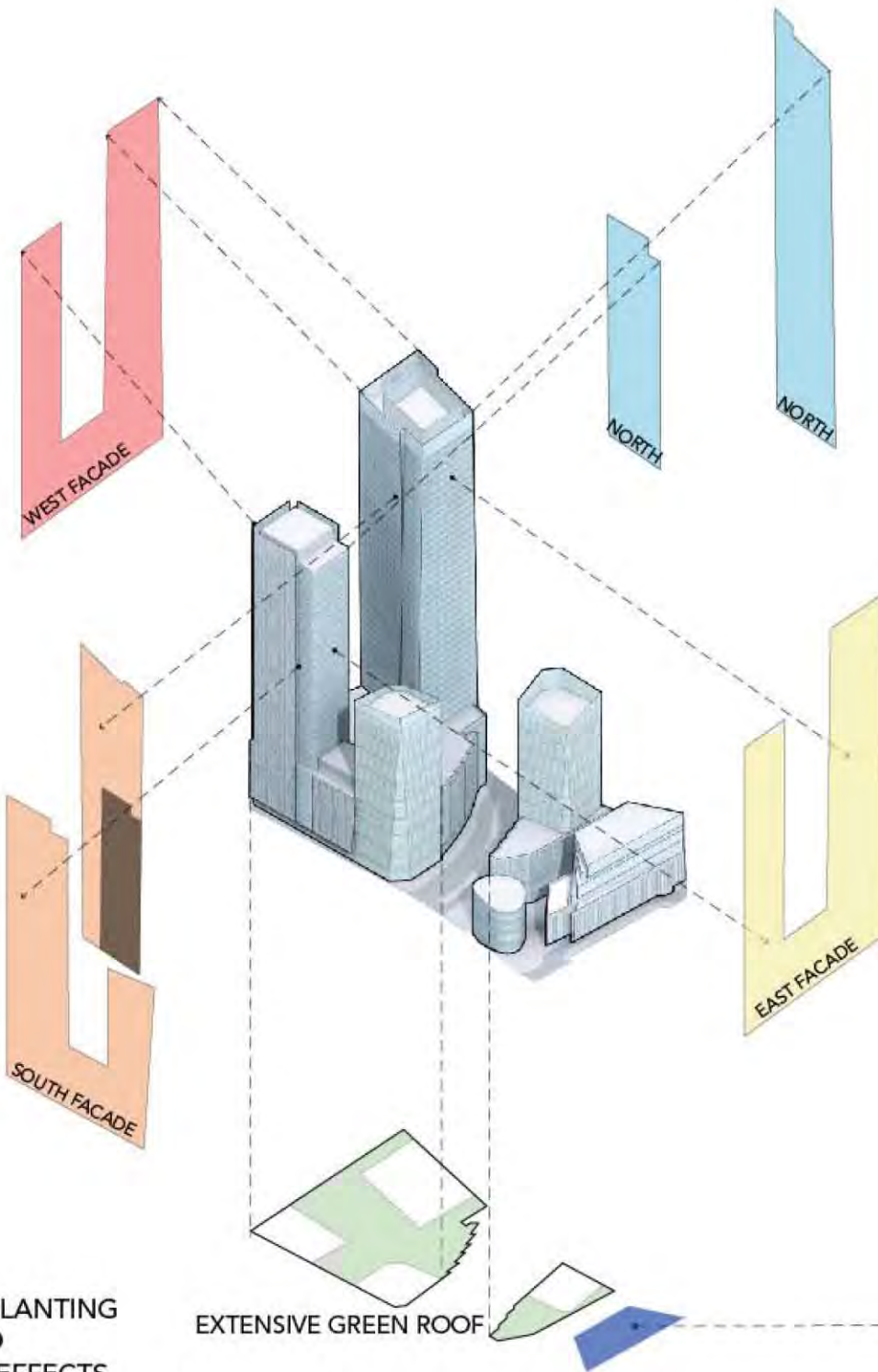
SHIELD
 WEST FACADE:
 HIGHEST PRIORITY
 AFTERNOON TO SUNSET
 SOLAR EXPOSURE
 MANAGE GLAZED AREA
 FOR SOLAR HEAT GAINS

SOUTH FACADE:
 HIGHEST PRIORITY
 LATE MORNING TO LATE
 AFTERNOON SOLAR EX-
 POSURE
 MANAGE GLAZED AREA
 FOR SOLAR HEAT GAINS

INTER BLOCK SHADING
 BENEFIT



GREEN ROOF
 NATIVE AND ADAPTED PLANTING
 LOWER WATER DEMAND
 REDUCED HEAT ISLAND EFFECTS
 REDUCED STORM WATER GENERATION
 REDUCED PEAK RUNOFF
 IMPROVED THERMAL PERFORMANCE
 IMPROVED ACOUSTIC PERFORMANCE
 IMPROVED BIODIVERSITY



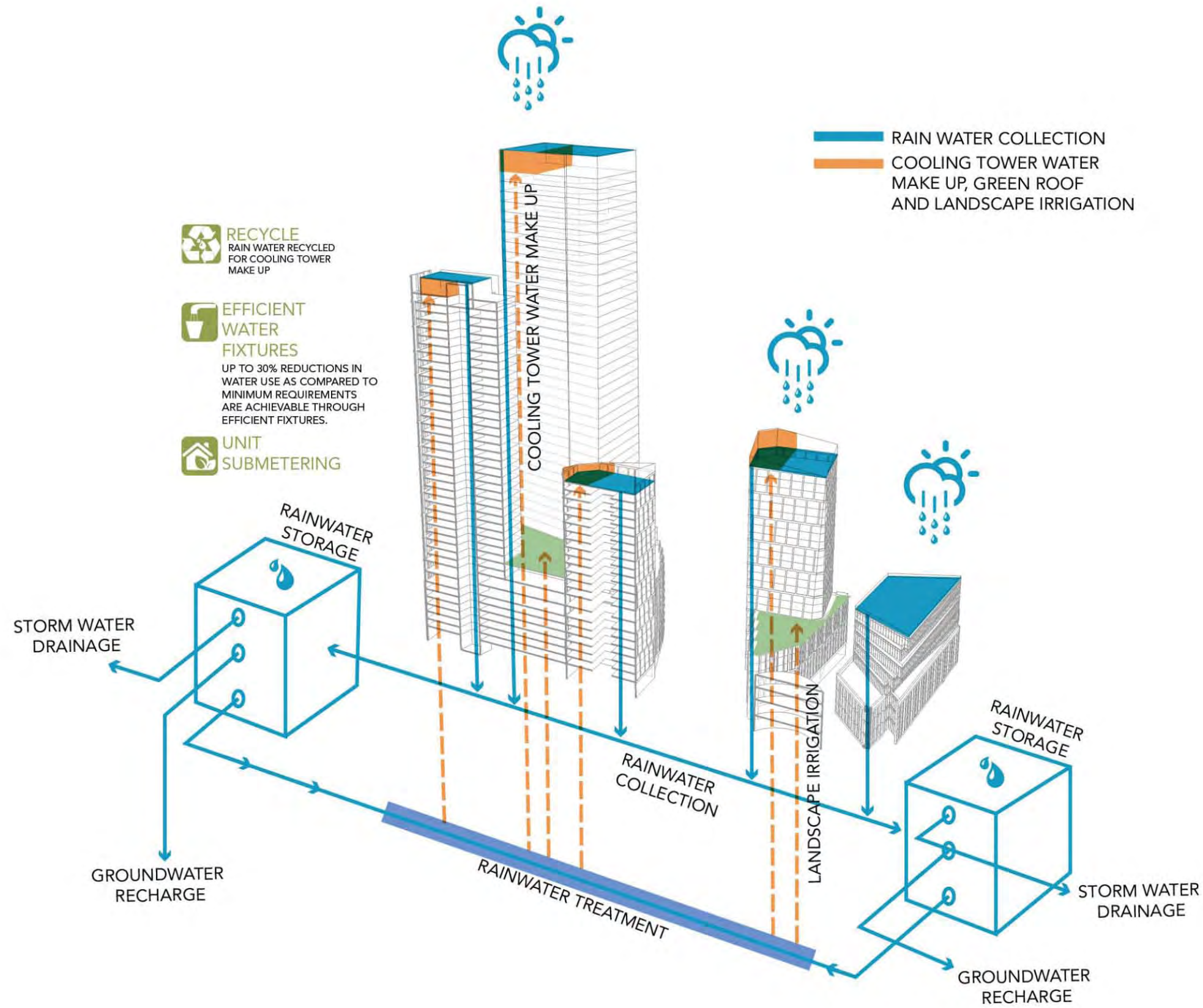
SHIELD
 NORTH FACADE:
 LOW PRIORITY
 LEAST SOLAR EXPOSURE
 HIGHEST GLAZED AREA
 FOR VIEW
 NATURAL DAYLIGHT AND
 LOW SOLAR HEAT GAINS

EAST FACADE:
 HIGH PRIORITY
 MORNING SOLAR EXPOSURE
 MANAGE GLAZING AREA FOR
 SLOAR HEAT GAINS

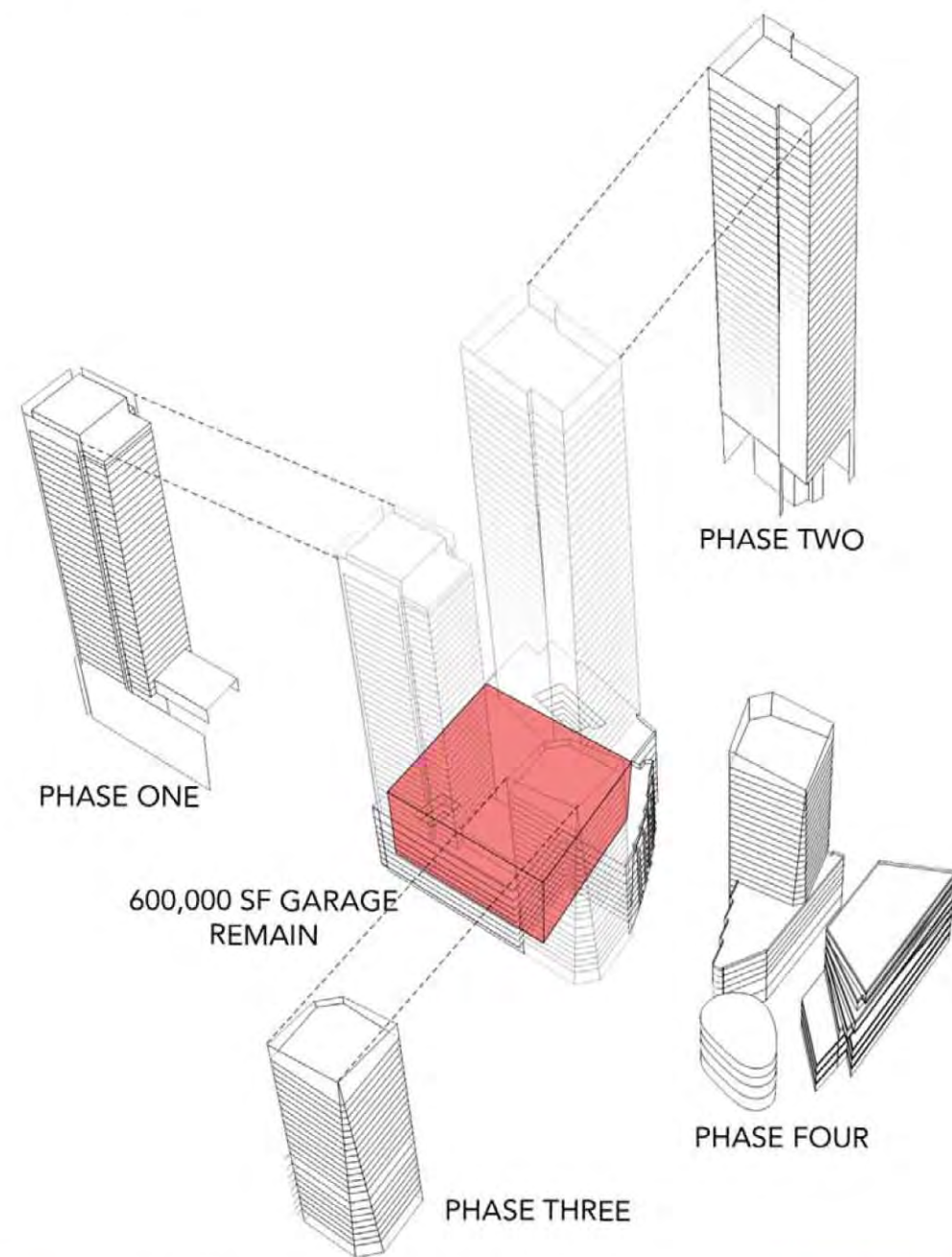


SOLAR PV
 90KW SOLAR PV ARRAY TO
 PRODUCE ELECTRICITY FOR
 PUBLIC PLAZA SITE
 LIGHTING

SUSTAINABILITY - WATER COLLECTION, CONSERVATION, AND RE-USE



SUSTAINABILITY - REDUCING EMBODIED ENERGY



TO DEMOLISH THE 476,000 SF GARAGE:
TO REBUILD THE 476,000 SF GARAGE:
TOTAL EMBODIED ENERGY SAVED:
AMOUNT OF GAS EQUIVALENT:

6,300,000 MILLION BTU
462,000,000 MILLION BTU
468,300,000 MILLION BTU
4,072,174 GALLONS

SOURCE: www.thegreenestbuilding.org