South Broad Plaza

Goals:
- Provide Affordable Workforce Housing
- Create a communal meeting point for both the edge of downtown and the broad street cultures.
- Preserve existing movements through the site.
- Offer work spaces for smaller companies such as maker spaces and small firms.
- Have a central focus plan.

Site Plan - 1/32" = 1'-0"

Level 3 - 1/32" = 1'-0"

Level 4 - 1/32" = 1'-0"

N/S Rear Section - 1/16" = 1'-0"
NORTHERN BUILDING

SOUTHEASTERN BUILDING

WESTERN BUILDING

(A) TJI INTO BEARING WALLS AND ENGINEERED BEAMS GRAVITY SYSTEM

(B) PLANK AND GLULAM ROOF GRAVITY SYSTEM

(C) TWO-WAY CONCRETE SLAB GRAVITY SYSTEM

(D) TIMBER SHEAR WALL LATERAL SYSTEM

(E) CONCRETE SHEAR WALL LATERAL SYSTEM
The floor system for the residential areas will consist of a thin layer of 1-1/2" thick concrete sitting on plywood sheathing atop 11-3/4" TJIs that feed into bearing walls (Picture A).

The grocery's and parking's floor system will consist of a two-way slab in order to better resist the irregular bearing wall placements of the floors above (Picture C).

The roof system of the Western Building will house multiple planters as well as solar panels. In order to support these additional weights a higher grade of 11-3/4" TJ (360) will be required.

The roof system of the Northern Structure that houses the multi story residences above the parking garage will also be built up of engineered joists feeding into glulams that are carried down via timber bearing walls and columns to the structural two way slab that covers the parking and offices.

The roof system of the Southeast structure that houses the offices and restaurants consist of an exposed 2x6 plank system that is supported by glulam beams (Picture B). These beams feed into larger glulam girders that are held up by either columns or bearing walls.

The automated parking garage's gravity system will consist of cast in place 24" thick concrete shear/bearing walls (Picture E) that support the two way slab above and drop roughly 20' below grade. Being that most of the bearing walls will be below grade to hide the automated parking, the walls will have to be relatively thick and thus will also supply sufficient acoustic insulation to the sides.

The lateral systems of the building site combines two different systems; concrete shear walls (Picture E), and timber shear walls (Picture D).

The lateral system of the Northern and Western Buildings will feature a hybrid system of timber construction on the upper floors, and concrete into the lower floors.

The Southeastern Building's lateral system however will feature a solely timber shear wall system.

The timber diaphragms will consist of engineered joists, glulam beams for longer spans and collectors, and plywood sheathing.

The concrete diaphragms will be a 12" thick two way slab that will supply more than sufficient shear capacity.

The Western and Southeastern Buildings' foundations will be a mat foundation due to the extremely poor soil conditions that only yielded a 1000 psf bearing capacity.

The Northern Building's foundation supports the parking structure which will feature its own foundation that will be at the specifications of the automated parking structure manufacturer. From there a step foundation will need to be poured from the bottom of the parking area to the mat foundation of the offices.