COURTYARD DEVELOPMENT

AS PRESENTED ON JANUARY 9, 2015
COURTYARD DEVELOPMENT

CURRENT DESIGN - MODEL PHOTOS
CURRENT DESIGN - SKYLIGHT SECTION

- Zipper truss, S.S.D.
- Interior wood ceiling system
- 4" concrete slab
- 3/4" plywood
- 5-ply CLT
- 6" min. R-35 poly-iso roof insulation
- Wood decking on wood framing on pedestals
- Built up curb @ 288' 0"
- Skylight
- Third floor 288' 0"
PRECEDENT: LED STRING FIXTURE LIGHTING ABOVE MAIN GATHERING AREA AT COURTYARD
VIEW OF COMMONS AREA LOOKING EAST
AS PRESENTED 09 JANUARY 2015

ZIPPER TRUSS & INTERIOR SPACE

LEERS WEINZAPFEL ASSOCIATES
24 APRIL 2015
CURRENT VIEW OF COMMONS AREA LOOKING EAST

ZIPPER TRUSS & INTERIOR SPACE
Our design is intended to take cues from, and work harmoniously with, the space. It originates from the plan of the Integrated Learning Building, and is designed to enhance the space, making it more interactive and active. This will certainly brighten a design student’s long day in the studios.
Possible Glass Patterns Views

The cafe design for the new UMass IDB is focused on translucent glass patterns. A precedent study of different types of glass patterns that mirrored the tree-like forms seen on the exterior of the IDB. These patterns of glass are secured in place by an L-shaped steel cantilever. The cantilever was inspired by a cantilever form taken on the design for the cafe. The angled form of the steel structure was inspired by the cantilever design form seen in the given design for the cafe IDB. The angled form is cantilevered from the wall behind the IDB. Because the steel frame does not actually touch the ground, it is given three supports which attach it to the wall behind it. Each steel structure consists of two 3/4" steel members that hold a total of seven units that secure the glass. Beneath the glass will be three lights in the floor projecting upwards. There will also be three lights positioned above that will shine down. The purpose of these lights is to highlight the translucent glass pattern and create a play of light and shadow.

Precedents

Views

Exploded Axonometric
The wood cloud café utilizes a curving shape to reflect the organic circulation of the café. This will be done with 2x4's wood elements with a large section over-lapping a smaller one. The variations in size address the scales of both the overall space and of the users.  

Two orientations were experimented with; one being a perpendicular orientation and the other an angled version that echo’s Aalto’s work and it’s use of both the cloud concept. The wooden elements also act as the filter to the soft white lighting feature.  

The café surface design was created through the integration of two screens using either the same or different materials. The idea came from looking at rock walls that were held together by wire mesh boxes and how two metal screen at a distance would react with each other to create a moiré effect.

The first concept is two metal screens, one with a consistent pattern and the other with a non-repeating pattern. This concept utilizes the shadow that is created from the bending of movement as the person walks by. The wooden clouds in turn the sun washes through the clouds, creating subtle movement to the screen on screen, but with an added material quality.
AS SLATS BECOME MORE DENSE, BOARDS BECOME MORE NARROW
AS SLATS BECOME LESS DENSE, SPACING BECOMES WIDER

OPERABLE SECURITY SCREEN
CABLE BASED LIGHTING GRID
ENTRY DOOR
The security screen and seating become a beacon. The screen is actuated by a conventional overhead door operator. The seating mechanism includes fixed pin connections at the top and bottom, rails and motor to be concealed, access panel for safety/repairs, slats pinned individually along the curve, pin connection rests on hooks, and slats pinned at the joint. The z-axis range of motion is also highlighted.
PRECEDENT: REGIONAL TOBACCO BARNS WITH WOOD SLATS
AWNING SECURITY STRATEGY

BI-FOLD SECURITY STRATEGY

CLEAR MODULE
STACKED AND PAINTED MODULES
LIGHTING INTEGRATED INTO PANEL RETURN
ENTRY DOOR
INTRODUCE CELL DIFFERENTIATION (PER PROGRAM)

INTRODUCE COLOR DIFFERENTIATION

INTRODUCE HEIGHT FIELD DIFFERENTIATION

holger lippmann - NoiseGrid
herzog and de meuron - Technical School Library, Eberswalde
END WALL GLAZING INVESTIGATIONS

DESIGN AS OF 60% CD
OPTION A: PERFORATED SCREEN WITH INSULATED WALL
OPTION A: PERFORATED SCREEN WITH INSULATED WALL
OPTION A: PERFORATED SCREEN WITH INSULATED WALL
OPTION B: PV GLAZING WITH SHADOW BOX AND INSULATION
END WALL GLAZING INVESTIGATIONS

OPTION B: PV GLAZING WITH SHADOW BOX AND INSULATION
SOUTH CURTAIN WALL ELEVATION
TOTAL CURTAIN WALL AREA: 2042 SF
~5' HIGH SOLID WALL AREA: 620.5 SF
30.4% REDUCTION IN GLAZING
OPTION B
WEST CURTAIN WALL ELEVATION

TOTAL CURTAIN WALL AREA: 1670 SF
~5' HIGH SOLID WALL AREA: 448 SF
26.8% REDUCTION IN GLAZING
END WALL GLAZING INVESTIGATIONS

NORTH COURTYARD ELEVATION
TOTAL CURTAIN WALL AREA: 1752 SF
3' HIGH SOLID WALL AREA: 125 SF (ABOVE CURRENT 1'6" SILL)
7.1% REDUCTION IN GLAZING

WEST COURTYARD ELEVATION
TOTAL CURTAIN WALL AREA: 777 SF
3' HIGH SOLID WALL AREA: 50 SF (ABOVE CURRENT 1'6" SILL)
6.4% REDUCTION IN GLAZING

ALUMINUM CURTAIN WALL
ANODIZED ALUM. PANEL
RAINSCREEN: EA-W1
AREA OF 60% COVERAGE REVERSE DOTTED FRIT @ IGU
FRIT ABOVE EYE LEVEL

B.4 C C.5 D D.5 E E.5 F F.5
12'-10" 24'-0" 23'-0" 10'-0" 26'-0" 26'-0" 24'-0"

5'-10"
6'-0"
10'-0"
23'-0"
5'-10"
5'-10"
5'-10"