Team MEMBERS
Project Scale U.S.

WISCONSIN, U.S.

DANE COUNTY, WI
Site Conditions CLIMATE

Heating Dominated

-14°F to 89°F
99% Design Condition

36-55°F
Average Temperature Range

Heating 83% of Year
Hours Temperature < 70°F

Cooling 10% of Year
Hours Temperature > 75°F
Wind Conditions

7-11 mph
Average Wind Speed

North West Wind
From Lake
36% of the Year

South Wind
From Hill
36% of the Year
Project Scale SITE
UW-M Union Theater
UW-M Bascom Hall
To collaborate is to converse, understand, co-create. Collaboration is all about the connection.
Context Elements

Lake Mendota + Forest + Integrated Community
Diagramming the Idea

Ode to nature + Outreach Building = Connection
Outreach
Ground Level Axonometric View
Ground Level Plan

- Auditorium
- Elevator
- Lavatories
- Loading Area
- Lounge
- Mechanical Room
- Restroom
- Storage Room
- Vertical Shaft
First Level Axonometric View
Second Level Plan

- Circulation
- Department Chair's O
- Elevator
- Faculty Lounge
- Faculty Office
- Lounge
- Corridor
- Private Work
- Reference
- Restroom
- Semi Private
- Senior Administrative
- Small Classroom
- Stairs
- Vertical Shaft
Third Level axonometric View
Third Level Plan

- Balcony
- Elevator
- Faculty Office
- Instructional Lab
- Restroom
- Stairs
- Vertical Shaft

theCONNECTION
Interdisciplinary Connection

Section A

Section B
Site Conditions & Building Loads

**UW Madison Soil Considerations**

**Soil Profile**
- Bearing Capacity 4 KSF
- High Water Table

<table>
<thead>
<tr>
<th>Building Area</th>
<th>Uniform Load [psf]</th>
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</thead>
<tbody>
<tr>
<td>Classroom</td>
<td>40</td>
</tr>
<tr>
<td>Office</td>
<td>50</td>
</tr>
<tr>
<td>Roof</td>
<td>20 (100*)</td>
</tr>
<tr>
<td>Stairs</td>
<td>100</td>
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<tr>
<td>Auditorium</td>
<td>100</td>
</tr>
<tr>
<td>Corridors</td>
<td>100</td>
</tr>
<tr>
<td>Storage</td>
<td>250</td>
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<td>Snow</td>
<td>30</td>
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<tr>
<td>Wind</td>
<td>21</td>
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</table>
Structural Alternatives

Architectural Structure
- Concrete & Steel
- Exposed structure at perimeter
- Anchored Diaphragm Wall
- Delta beams & Hollow core slabs
- Diagrid

Camouflaged Structure
- Concrete & Steel
- Structure offset from facade
- Reinforced Retaining Wall
- Precast Prestressed Slabs
- Moment Frames and Shear Cores
2ft Anchored Diaphragm Wall

Protects excavation pit during the construction phase, serves as a retaining wall afterwards

Dywidag Permanent 3x0.6’ Strand Anchors

Length: 42ft
21ft Free + 21ft Bonded

Angle: 15°

Spacing: 7ft

Prestressed

---

Adjusted Prestress = 20% Moment Reduction
Considered 3 alternatives:

a) **Regular W12 & Composite Slab**

b) **Castellated W12 & Composite Slab**
c) Delta Beams & Hollow Core Concrete Slab

Chosen alternative: Delta beams (alternative C)

Reasons:
- Long spans that allow open and flexible spaces
- Fire resistance
- Very thin floor system (easy integration with MEP systems)
- Reduced construction time (5 workers, prefabrication)
Floor System: Mezzanine

Steel:
- W12 Slanted Column
- W12 Column
- W14 Column
- Delta Beam D30-300 [Intermediate]
- Delta Beam DR32-310 [Edge]
- W8/28

Concrete:
- 8" RC wall [acoustics]
- 18" RC Column
- 8" Hollow Core Slab
Diagrid, Auditorium & Truss

Diagrid (HSS 12x8x1/2)
- Gravity + Lateral
- Axial Action
- Redundancy
- Prefabrication
- Stability
- Integration with facade

Truss Evolution:

Joist Girder 28VG [2L 5x5x3/8]
- 50ft span
- MEP integration
Camouflaged Structure

Architectural Requirements
- Offset From Facade
- Develop Characteristic Volume

Outcome: Use of Natural Topography for Support
Gravity System  
Moment Frames

- Grid: Same 4 by 4 with 30’ Spans
- Max Beam Span: 40’
- Columns: W14*211
- Beams: W18*60
- Girders: W27*84
- Slabs: 10” Hollow Core (Prestressed)
Gravity System Multistory Truss

Span: 80’ (3 Bays - 28’, 24’, 28’) , Height: 28’

Top and Bottom Chord: W 16 * (89)
Webs: 2L 4*4*(⅜)
Moment Angle: 50 degree
Shear Angle: 35 degree

Study of Optimized Load Path
Lateral System Earth and Wind

Wind
- 8” Concrete Shear Walls

Lateral Earth Pressure
- Cellular Concrete
- 12” Retaining Wall
- Geotextiles
Ground Level Plan

- Elevator
- Lavatories
- Mechanical Room
- Lounge
- Restroom
- Private Work
- Quick Work
- References
- Circulation
- Semi Private
- Seminar Room
- Shaft
- Small Classroom
- Storage
- Stairs

10 by 10 architectural grid
First Level Axonometric
Second Level Axonometric
Night View
Structural Alternatives

**Natural Structure**
- Timber
- Glulam Columns and Beams
- CLT Walls and Floor Slab
- Tapered Beams
- Hybrid Members [increased stiffness]
- Modern Connections

**Industrial Structure**
- 3D Printed Concrete Shell
- Precast Frames and Slabs
- Structural Glass
- 3D Printed Steel Connections
- 3D Printed Sensors
- Tuned Mass Dampers
3D model
Cantilever retaining wall designed to resist lateral load induced by the hill.
1st Floor CLT Walls

CLT walls, Southern Pine

5 layer (6 7/8"")
CLT walls (E4 Grade)

Concealed connection systems:
- Aesthetics
- Fire Resistance
Glulam Columns and Beams

Glulam Columns, Southern Pine
- 6 3/4 x 6 7/8
- 8 1/4 x 8 1/2
- 10 1/2 x 11
- 10 1/2 x 19 1/4

Glulam Beams, Southern Pine
- 6 3/4 x 15 1/8

Connections:
- Pitzl HVP plug-in connectors

Timber - Timber
Timber - Concrete

Constructability ☑
Aesthetics ☑
Fire Resistance (R60) ☑
CLT Floor Slabs

CLT slabs, Southern Pine

5 layer (6 7/8"
CLT slab (E4 Grade)

Orthotropic slab

Self tapping screws forming a rigid connection between CLT slab and Glulam beam
2nd Floor

Glulam Columns, Southern Pine
- 6 3/4 x 6 7/8
- 8 1/4 x 8 1/2
- 10 1/2 x 11
- 10 1/2 x 19 1/4

Glulam Beams, Southern Pine
- 6 3/4 x 15 1/8
- Flitched Beam
  - 2 1/2 x 13 3/4
  - + 1' Steel Plate

Reduced deflections
\[ u_{\text{max}} = -1.14'' \]
\[ u_{\text{max}} = -0.36'' \]
Roof

Glulam Columns, Southern Pine
- 6 3/4 x 6 7/8
- 8 1/4 x 8 1/2
- 10 1/2 x 11
- 10 1/2 x 19 1/4

Glulam Beams, Southern Pine
- 10 1/2 x 20 5/8
- 10 1/2 x 35 3/4 [tapered]
- Braces (1.5“ High Strength Ties)

Moment Resisting Connection
- SWG’s ZD plate [ten. – comp.]
- Full Thread Screws

Prefabrication ✓
Easy Assembly ✓
Optimisation ✓
Openings in CLT slabs provide enough space for MEP integration.
Porosity Industrial Alternative

Natural Porous Microstructures
“High Strength and Lightweight”

3D printing Production
- Optimization through Customization (Micro and Macro Scale)
- Net Zero Waste and Efficient Production
Structural Subsystems **Gravity**

Similar 4 by 4 Grid, Spans: 30’
Beams: 18”*27”
Columns: 24”*24”
Slabs: 10” - 8”
Shell Thickness: 6”

Structural Glass:
Membrane 1 ⅛”*8’*10’ (10 lb/panel)
Non Membrane 1”*15”*12’
3D Printed Compression Shell

Form Finding Process

- Employ Geometric Stiffness
- **108** Pieces: 10’*10’*6”
- Assembled as **3 Domes**

On time, In Place Construction
Glass Connections are **Custom Designed**

**Metal Foam** Connections:
- Lower Self Weight
- Increase glass in plane stiffness
Horizontal Tuned Mass Dampers

Tuned Modal Frequency: 3 Hz
Dimensions: 28”*5”*11”
130 kip total wind load
Location in red

3D Printed Sensors: Redundancy
- Strain Gauges
- Structural Health Monitoring

Local: Cellular Concrete Wall
Challenge Cold Climate

Dry Bulb Temperatures [°F]

- Hours
- Comfort Range

- [-30, -25]
- [-25, -20]
- [-20, -15]
- [-15, -10]
- [-10, 5]
- [5, 10]
- [10, 15]
- [15, 20]
- [20, 25]
- [25, 30]
- [30, 35]
- [35, 40]
- [40, 45]
- [45, 50]
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- [55, 60]
- [60, 65]
- [65, 70]
- [70, 75]
- [75, 80]
- [80, 85]
- [85, 90]
- [90, 95]
Solution Maximize Heat Gain

LAKE

LAKE

theCONNECTION

POROSITY

HILL

HILL
Solution Simultaneous H/C

PRIMARY Heating & Cooling Systems

Campus CoGen Facility Steam & CHW Supply

GeoExchange Field 2 - Closed/Open Loops
SECONDARY Heating & Cooling Systems

Radiant Floors + Radiant Ceilings
Solution Simultaneous H/C

SECONDARY Heating & Cooling Systems

Variable Refrigerant Flow (VRF): 2-Pipe
Solution Simultaneous H/C

SECONDARY Heating & Cooling Systems

Active Chilled Beams (ACB)
SECONDARY Heating & Cooling Systems

Variable Air Volume with Reheat (VAVR)

*ASHRAE Baseline (CZ 6A - Commercial)
## Challenge A/E/C/O Constraints

<table>
<thead>
<tr>
<th>ARCHITECT</th>
<th>STRUCTURAL ENGINEERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aesthetics + Space Quality</td>
<td>Space Efficiency (Ceilings)</td>
</tr>
<tr>
<td><em>Space Efficiency (Program)</em></td>
<td>Shaft Utilization + Openings</td>
</tr>
<tr>
<td><em>Space Efficiency (Ceilings)</em></td>
<td></td>
</tr>
<tr>
<td><strong>Zero Roof Utilization</strong></td>
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<table>
<thead>
<tr>
<th>CONSTRUCTION MANAGERS</th>
<th>OWNERS</th>
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<tbody>
<tr>
<td>Low Initial System Cost</td>
<td>Individual Comfort Variability</td>
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<tr>
<td>Installation Risk + Delays</td>
<td>Energy Efficiency</td>
</tr>
<tr>
<td></td>
<td>Life Cycle System Cost</td>
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<tr>
<td></td>
<td>Operational Reliability</td>
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# Solution Decision Matrix

<table>
<thead>
<tr>
<th>Heating + Cooling Primary</th>
<th>Closed Loop Geo-Exchange + WSHPs</th>
<th>Cogeneration Plant Supply + Steam HX</th>
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<tbody>
<tr>
<td></td>
<td>[ACB] Active Chilled Beams</td>
<td>Variable Air Volume with Zone Reheat</td>
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<tr>
<td></td>
<td>Natural Ventilation</td>
<td></td>
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<tr>
<td>Renewable Primary</td>
<td>Solar Photovoltaic Array + Glass</td>
<td>Integrated Façade Microturbines</td>
</tr>
</tbody>
</table>

## Evaluated On These Criteria

- Connection (with Nature)
- Aesthetics + Space Quality
- Individual Comfort Variability
- Space Efficiency (Program)
- Space Efficiency (Ceilings)
- Shaft Utilization + Openings
- Energy Efficiency
- Low Initial System Cost
- Installation Risk + Delays
- Life Cycle System Cost
- Operational Reliability

## Multiplied By These Weighting Factors

- 2.0
- 1.0
- 2.0
- 1.5
- 1.5
- 1.0
- 1.0
- 1.0
- 2.0
## Decision Matrix

### MEP-1: CoGen + Radiant
- **Cogeneration Plant**
- **Radiant Floors + Ceilings**

### MEP-2: GeoX + VRF
- **Closed Loop GeoExchange + WSHPs**
- **Variable Refrigerant Flow**

### Energy Recovery Ventilators + Dehumidification Unit
- **Solar PV Array**
- **Integrated Façade Microturbines**

---

### theCONNECTION

<table>
<thead>
<tr>
<th>Decision Matrix</th>
<th>MEP-1: CoGen + Radiant</th>
<th>MEP-2: GeoX + VRF</th>
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</thead>
<tbody>
<tr>
<td><strong>Cogeneration Plant</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Radiant Floors + Ceilings</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Decision Matrix: POROSITY

#### MEP-3: CoGen + Radiant
**Cogeneration Plant**  
Radiant Floors + Ceilings

#### MEP-4: CoGen + VRF
**Cogeneration Plant**  
Variable Refrigerant Flow

**Energy Recovery Ventilators + Dehumidification Unit**  
Hybrid (24% Natural) Ventilation

**Solar PV Array**
## Summary Alternatives

<table>
<thead>
<tr>
<th>theCONNECTION</th>
<th>MEP-1</th>
<th>MEP-2</th>
<th>MEP-3</th>
<th>MEP-4</th>
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<tbody>
<tr>
<td>GeoExchange</td>
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<td>x</td>
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<tr>
<td>Cogeneration</td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>VRF</td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Radiant</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>ERVs + Dehum.</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Hybrid Vent.</td>
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<td>x</td>
<td>x</td>
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<tr>
<td>Solar PV</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Microturbines</td>
<td>x</td>
<td>x</td>
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</tbody>
</table>
MEP-1 Level 0 Plan

HX Manifolds

Displacement Ventilation

HX Manifolds
MEP-1 Level 1 Plan

Auditorium

ERVs

3.6 kW

Radiant Ceilings
MEP-1 Level 2 Plan

ERVs

Simultaneous Heating/Cooling
MEP-1 Level 3 Plan

Facade
Integrated
Microturbines
MEP-2 Floor Sandwich

GeoExchange
36 Boreholes
6x6 Array

*Representative. Not Actual Section.
MEP-2 Level 0 Plan

6x6 Array @20’ Spacing
2 - Closed-Loop GeoExchange Field
MEP-2 Level 0 Plan

WSHP + BC Controller

ERV
MEP-2 Level 1 Plan
MEP-2 Level 2 Plan

Simultaneous Heating/Cooling
MEP-2 Level 3 Plan
Primary Beams

Radiant Ceiling

HX Manifolds

POROSITY
Simultaneous Heating/Cooling
MEP-4 Level 2 Plan

High Capacity VRF
MEP-3 & 4 Natural Ventilation
MEP-3 & 4 Natural Ventilation

Section A

Section B

POROSITY
MEP-3 & 4 Natural Ventilation

Month for Natural Ventilation

24% of the Year

POROSITY
Performance Net Zero Energy

Energy Use

MWh/yr

- **MEP-1**: CoGen + Radiant
  - Consumption: 142
  - Solar Gen.: 100
  - Wind Gen.: 42
  - Net: 14

- **MEP-2**: GeoX + VRF
  - Consumption: 126
  - Solar Gen.: 116
  - Wind Gen.: 10
  - Net: 14

- **MEP-3**: CoGen + Radiant
  - Consumption: 14
  - Solar Gen.: 10
  - Wind Gen.: 4
  - Net: 10

- **MEP-4**: CoGen + VRF
  - Consumption: 10
  - Solar Gen.: 10
  - Wind Gen.: 4
  - Net: 10
Performance Net Zero Energy

Site Energy Use Intensity

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<tr>
<th></th>
<th>Consumption</th>
<th>Renewables</th>
<th>Net</th>
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<td>13.1</td>
<td>11.6</td>
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<td>MEP-2: GeoX + VRF</td>
<td>2.4</td>
<td>1.6</td>
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<tr>
<td>MEP-3: CoGen + Radiant</td>
<td>11.6</td>
<td>2.4</td>
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<tr>
<td>MEP-4: CoGen + VRF</td>
<td>1.6</td>
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</table>
Performance STV Analysis

![Diagram showing performance analysis for different materials and systems.](image-url)
Performance STV Analysis

Sustainable Target Value

% of Target Max

- Connection Conc+Steel Radiant: 46%, 28%, 28%
- Connection Conc+steel GeoX+VRF: 47%, 28%, 17%
- Porosity Timber Radiant: 29%, 17%, 16%
- Porosity Conc+3Dp VRF: 33%, 18%, 17%

Legend:
- Carbon
- Energy
- Water
Site EQUIPMENT

CAT Excavator 336D2
Maximum digging depth: 25 ft.
Maximum reach at ground level: 36 ft.
Price: $2500/month

John Deere Dump Truck 410E
Rated payload: 82
157 lb.
Price: $1500/month

GROVE Crane TMS700B
Fixed Boom Extension: 35-110
ft.
Tele Boom Extension: 32-56 ft.
360*
Price: $8000/month

CAT TH514C
Maximum lift height: 45 ft.
Load at max height:
down/up: 7000lb./4000lb.
Maximum forward reach: 30,25 ft.
Price: $600/month
Site LAYOUT
Site LAYOUT

Mobile Crane

Phase 1

Phase 2
### Schedule

**theCONNECTION**

#### Wide Flange Steel Construction

<table>
<thead>
<tr>
<th>Milestone 1</th>
<th>Milestone 2</th>
<th>Milestone 3</th>
<th>Milestone 4</th>
<th>Milestone 5</th>
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<tbody>
<tr>
<td>Site prep.</td>
<td>Substructure</td>
<td>Shell enc.</td>
<td>Interiors</td>
<td>Project C.</td>
</tr>
<tr>
<td>21 Sept.</td>
<td>16 Nov.</td>
<td>21 Mar.</td>
<td>3 July</td>
<td>31 Aug.</td>
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</table>

**Project Duration**: 54 weeks

### Delta Beams/HC Concrete

<table>
<thead>
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<th>Milestone 1</th>
<th>Milestone 2</th>
<th>Milestone 3</th>
<th>Milestone 4</th>
<th>Milestone 5</th>
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<tr>
<td>21 Sept.</td>
<td>16 Nov.</td>
<td>28 Mar.</td>
<td>11 July</td>
<td>31 Aug.</td>
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</table>

**Project Duration**: 55 weeks

#### Snowfall

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<th>Snowfall</th>
<th>0 inch</th>
<th>0.1-3 inch</th>
<th>3.1-6</th>
<th>6.1-9</th>
<th>9.1-12</th>
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</tbody>
</table>
Cost Estimate

Delta Beams/Hollow Core Slabs

- Building Sitework: $693,000.00, 7%
- Equipment and Furnishings: $195,000.00, 2%
- Specialty Construction: $286,000.00, 3%
- Interiors: $1,050,000.00, 10%
- Shell: $2,750,000.00, 27%
- General Conditions: $1,250,000.00, 12%
- Substructure: $420,000.00, 4%

Total Costs: $3,500,000.00, 35%

Wide Flange Steel Construction

- Building Sitework: $450,000.00, 4%
- Equipment and Furnishings: $195,800.00, 2%
- Specialty Construction: $280,500.00, 3%
- Shell: $2,560,000.00, 26%
- Interiors: $1,050,000.00, 11%
- General Conditions: $1,250,000.00, 13%
- Substructure: $390,000.00, 4%

Total Costs: $3,670,000.00, 37%
Cost Estimate

Delta Beams/Hollow Core Slabs

Total - $10.1 Mil

Wide Flange Steel Construction

Total - $9.8 Mil
Cost Estimate

Concrete/3D Printing

Total - $8.3 Mil

Glulam/CLT

Total - $8.6 Mil
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<thead>
<tr>
<th>Duration</th>
<th>Cost</th>
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<tbody>
<tr>
<td>55 Wks</td>
<td>$10.1 Mil</td>
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<tr>
<td>54 Wks</td>
<td>$9.8 Mil</td>
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<tr>
<td>41 Wks</td>
<td>$8.6 Mil</td>
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<tr>
<td>43 Wks</td>
<td>$8.3 Mil</td>
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Summary Decision Matrix

<table>
<thead>
<tr>
<th>Stakeholder Opinion Weighted</th>
<th>To Develop These Weighting Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupant Well-Being</td>
<td>11.2</td>
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<tr>
<td>Innovative Design</td>
<td>9.8</td>
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<tr>
<td>Space Efficiency</td>
<td>9.2</td>
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<tr>
<td>Integration With Nature</td>
<td>8.1</td>
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<tr>
<td>Educational Transformation</td>
<td>7.8</td>
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<tr>
<td>Community Collaboration</td>
<td>7.7</td>
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<tr>
<td>Sustainable Materials</td>
<td>7.2</td>
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<tr>
<td>Low Life Cycle Costs</td>
<td>4.8</td>
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<td>Rent Revenue</td>
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<td>Low Construction Risk</td>
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<td>Low Operational Complexity</td>
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<tr>
<td>Low Capital Costs</td>
<td>2.9</td>
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<tr>
<td>Team</td>
<td>40%</td>
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<tr>
<td>Owners</td>
<td>40%</td>
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<tr>
<td>User</td>
<td>20%</td>
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</table>
Summary: Concept Performance

**theConnection**
Conc + Steel + CoGen + Radiant

**Porosity**
Timber + CoGen + Radiant

**theConnection**
Conc + Steel + GeoX + VRF

**Porosity**
Conc + 3Dprint + CoGen + VRF
<table>
<thead>
<tr>
<th>theCONNECTION</th>
<th>POROSITY</th>
</tr>
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<tbody>
<tr>
<td>Conc + Steel</td>
<td>Timber</td>
</tr>
<tr>
<td>CoGen + Radiant</td>
<td>CoGen + Radiant</td>
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<td>Conc + Steel</td>
<td>Conc + 3Dprint</td>
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<td>GeoX + VRF</td>
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</tr>
<tr>
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<tr>
<td>63%</td>
<td>83%</td>
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<tr>
<td>62%</td>
<td>72%</td>
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</tbody>
</table>
Summary WINNER

POROSITY

Coming New and Improved on May 12th
Team Values

CORE VALUES

- Coordinated Design
- Innovation through Collaboration
- Empathy in Teamwork
- Celebrate Diversity
- Stakeholder Oriented

TEAM GOALS

- Collaborative Resonance
- Natural Communication
- Share experiences between disciplines

PROCESS

- Shared vision to achieve a common goal

Vision

We envision a culturally globalized future where urban spaces are integrated to natural spaces. Our future city will provide an engaging user experience by promoting sensible user interfaces where occupants with diverse backgrounds and preferences get to connect with their environment.
Team Tools

Informal Conversations:
WhatsApp
Cat Images:
WhatsApp

Currently Working On...:
WhatsApp
Coordinated Pull Planning:
IPD (Google Sheets)
Assigning Tasks:
IPD (Google Sheets)
Work Tracking:
IPD (Google Sheets)
Enforcing Schedule:
IPD (Google Sheets)

One-on-one Conversation:
Slack (direct messaging)
Subgroup Discussion:
Slack (subgroup channels)
Scheduling Meetings:
Slack (subgroup channels)
Subgroup Meetings:
Terf / Span

Group Discussion:
Slack (various channels)
Scheduling Meetings:
Slack (#meetings)
Group Meetings:
GoToMeeting / Terf / Span

File Sharing:
Google Drive (Atlantic AEC)

All Time Statistics

Total Messages
11K
77% public channels, 0% private channels, 23% DMs

Storage Used
0.8GB
For 431 files.

 CHANNELS (33)
# actionitems
# arch-cm
# arch-mep
# arch-se
# bigidea
# bim
# cognet
# concept-l-shaped
# concept-square
# conceptdevelopment
# feedback
# firstconcept
# general
# meetings
# mep-cm
# mep-cm
# oneuropm
# presentation-ideas
# random
# saveprofession
# se-cm
# se-mep
# squareconcept
# statusandraz
# statuscurtis
# statusflorent
# statusjeanarlos
# statusjulia
# statusuara
# structuraldesign
# teamprocess
# websites
Team Process

Input

- Idea!
- Sketch
- Slack

Output

- More Sketches
- BIM
- Review
- Feedback

Reality!
Thank You!

Team MEMBERS