IAN O'CAIN 2013

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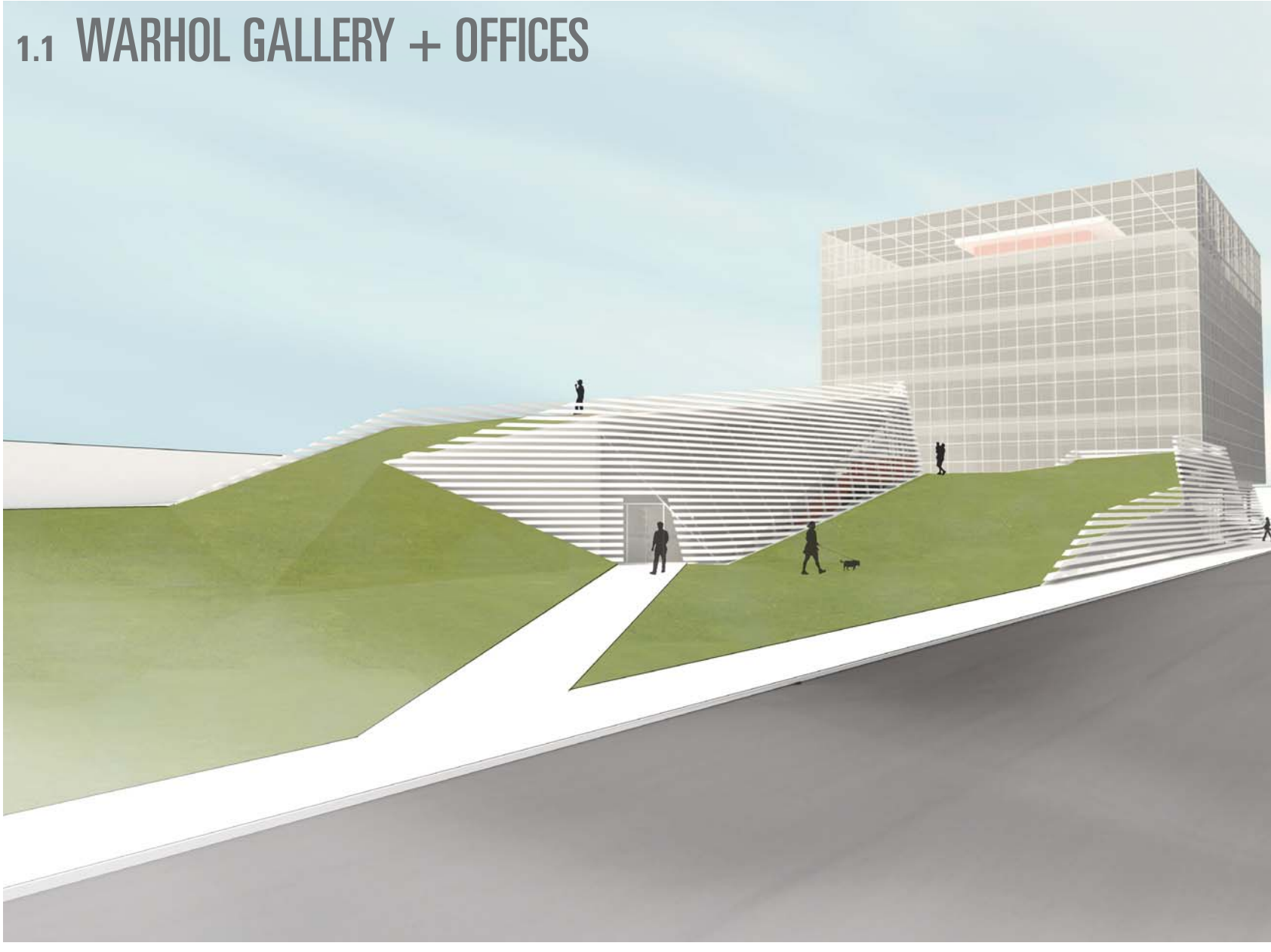
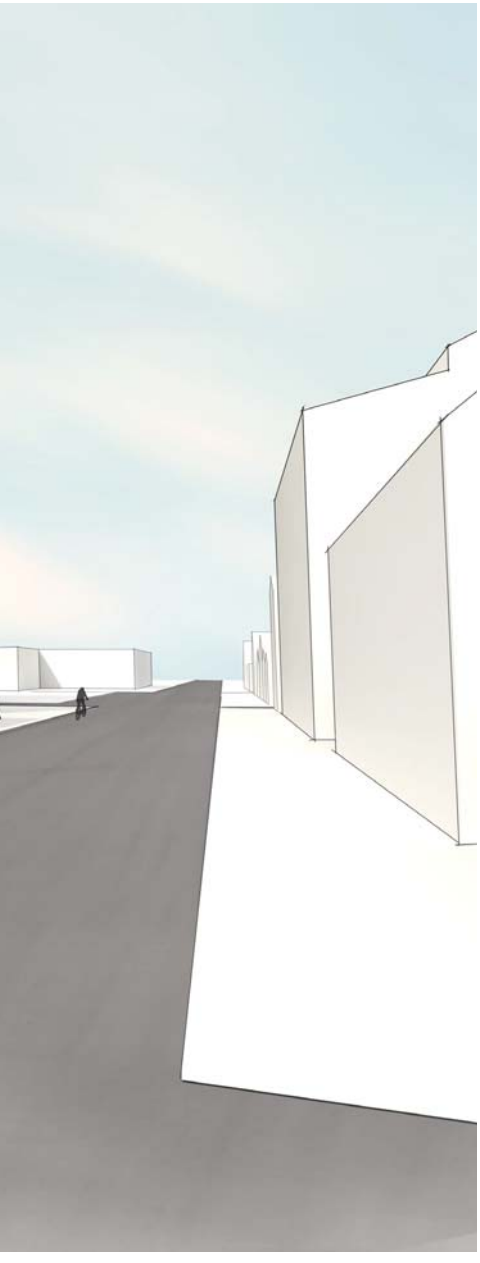
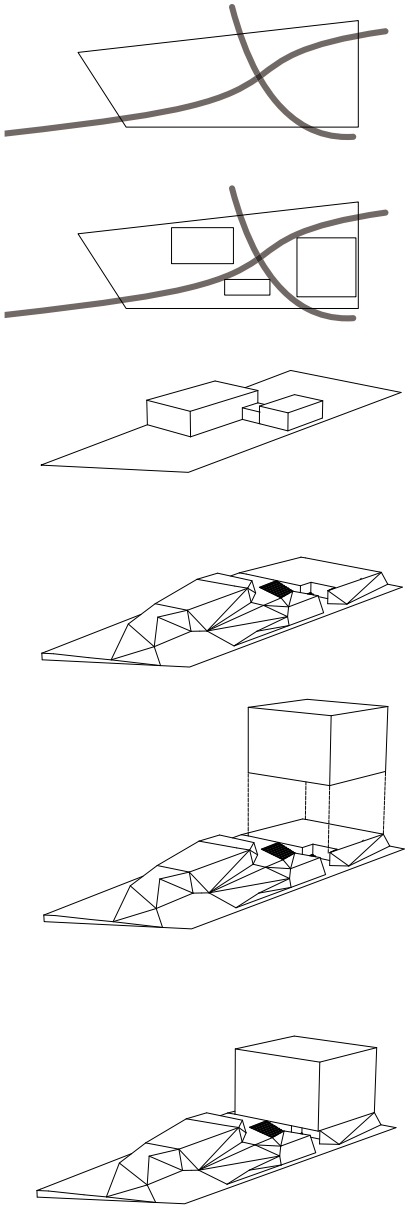
1.1 WARHOL GALLERY + OFFICES







Spring 2011
Third Year Studio

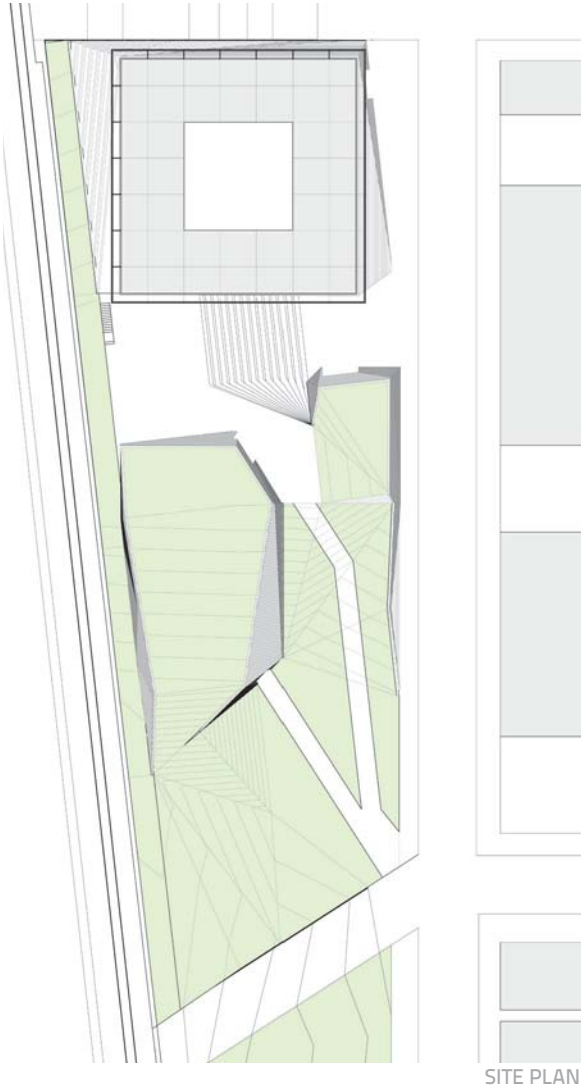
[site] Bywater Neighborhood
New Orleans, Louisiana

The Warhol Gallery and Office was a study in the duality of program type. Faced with a program requiring spec office space alongside a public gallery and auditorium, the project sought to define the vastly different entities as separate while still having them coexist harmoniously on site and tie in to the proposed Reinventing the Crescent liner park plan that the site is situated on.

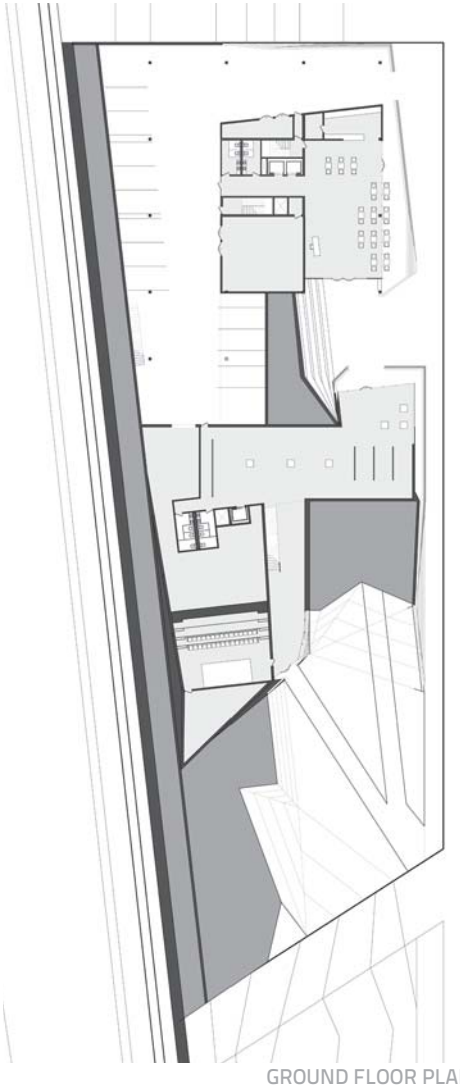
The resulting massing followed the idea of an object in a field. The public gallery and auditorium occupy the ground level of the site and act as an extension of the park itself. They are formed under a triangulated landscape as objects that emerge to greet guests. Where the landscape becomes too steep to support vegetation growth, concrete louvers screen glass facades to allow light in for the "underground" spaces.

The office itself sits as a pure glass cube on top of this created landscape. A fritted glass rain screen is applied to assist in cooling efforts for the building. Frit density changes across the facade in response to sun movement and views out to the river and city.

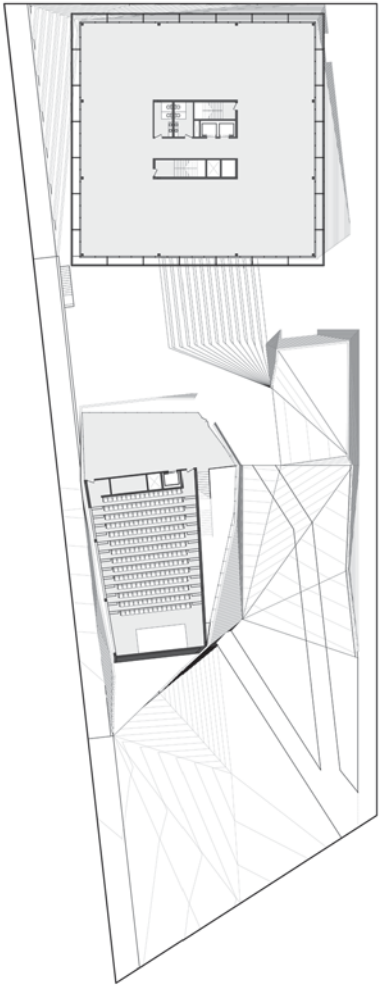
1.1 WARHOL GALLERY + OFFICES



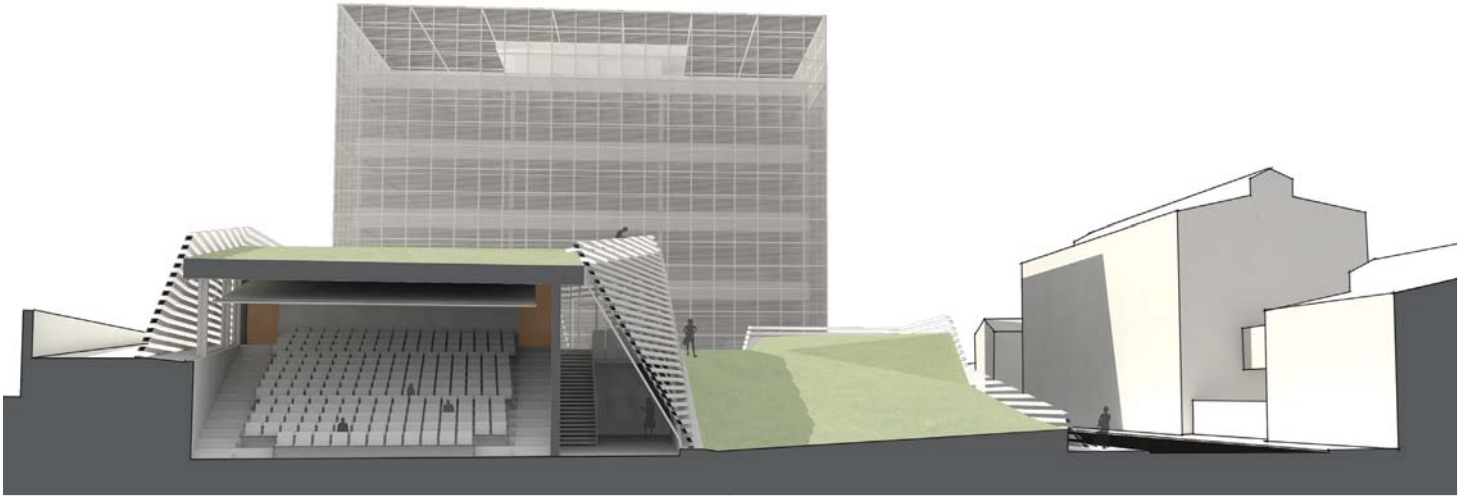
SITE PLAN



GROUND FLOOR PLAN



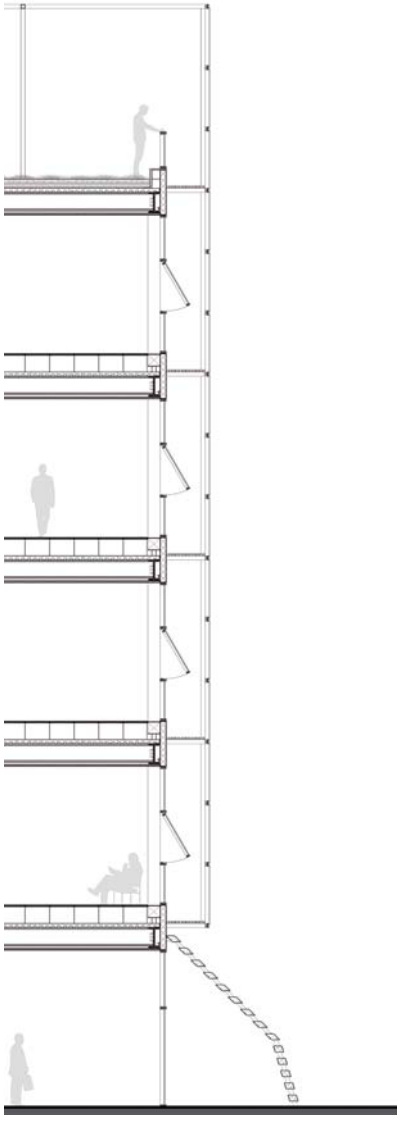
SECOND FLOOR PLAN
[OFFICE TYPICAL]



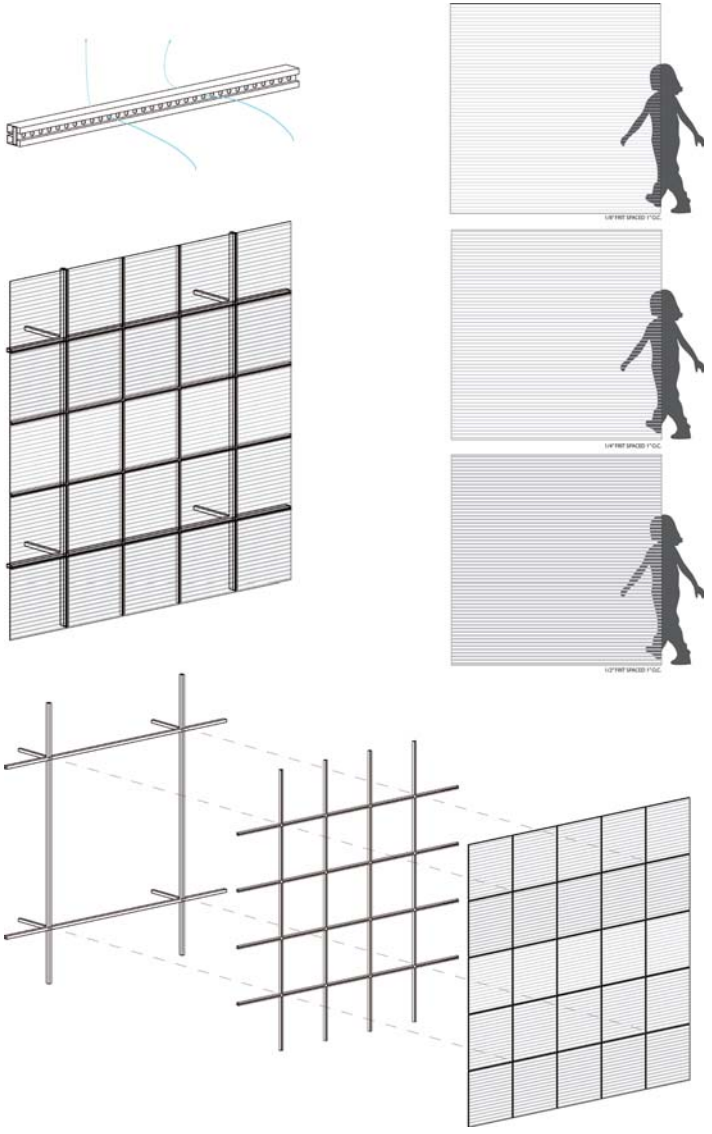
AUDITORIUM SECTION

LONGITUDINAL SECTION

1.1 WARHOL GALLERY + OFFICES



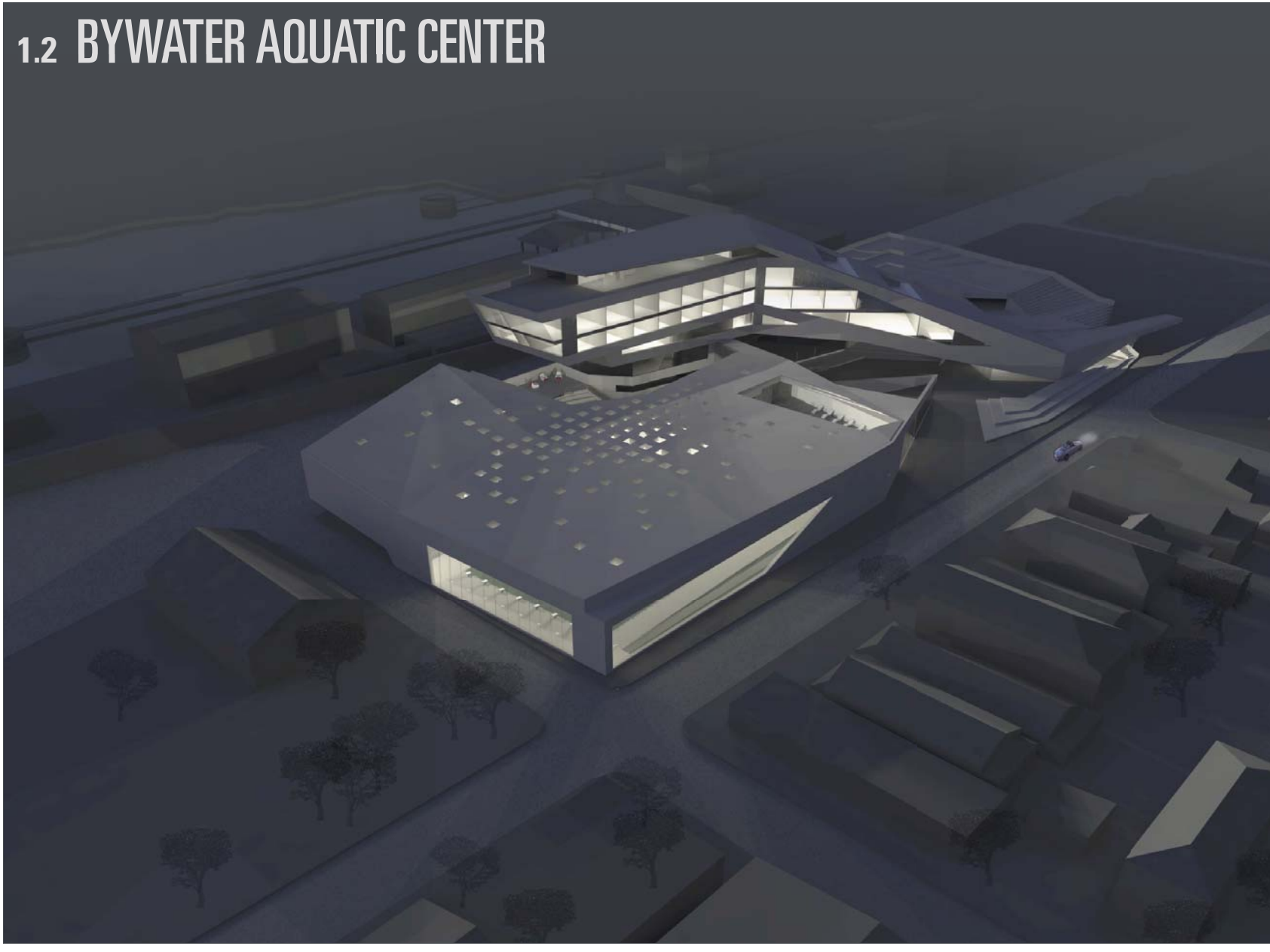
OFFICE BUILDING WALL SECTION

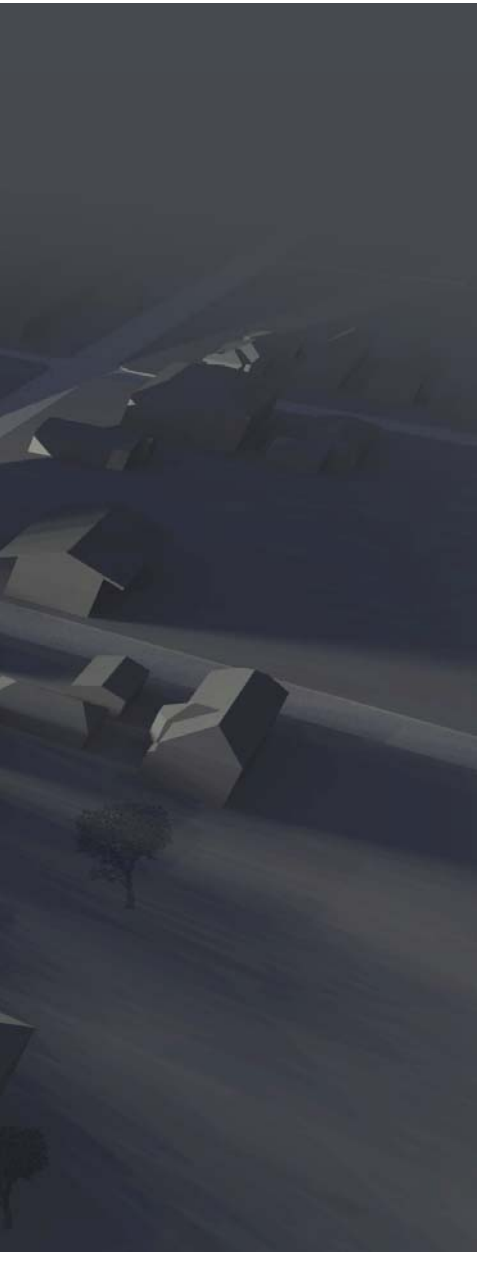


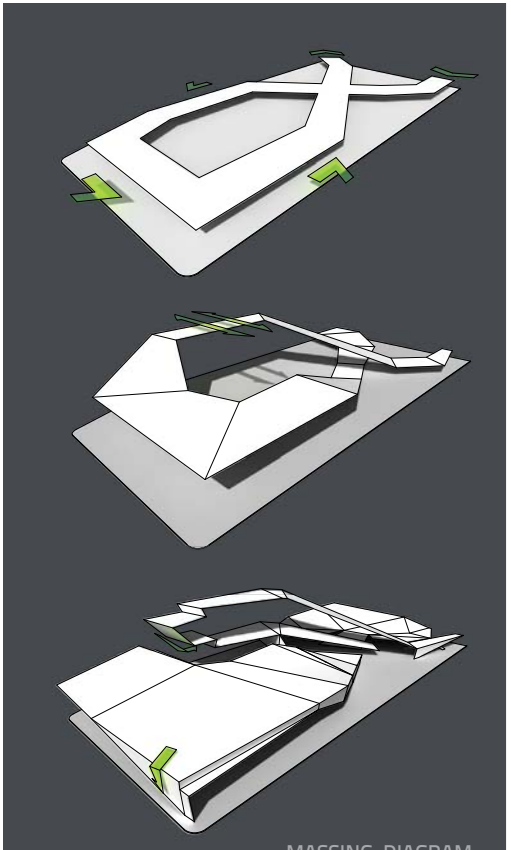
RAIN SCREEN DETAIL

LONGITUDINAL SECTION

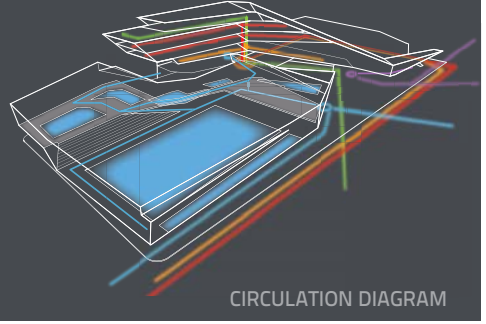
1.2 BYWATER AQUATIC CENTER







MASSING DIAGRAM



CIRCULATION DIAGRAM

Fall 2012
Fifth Year Studio

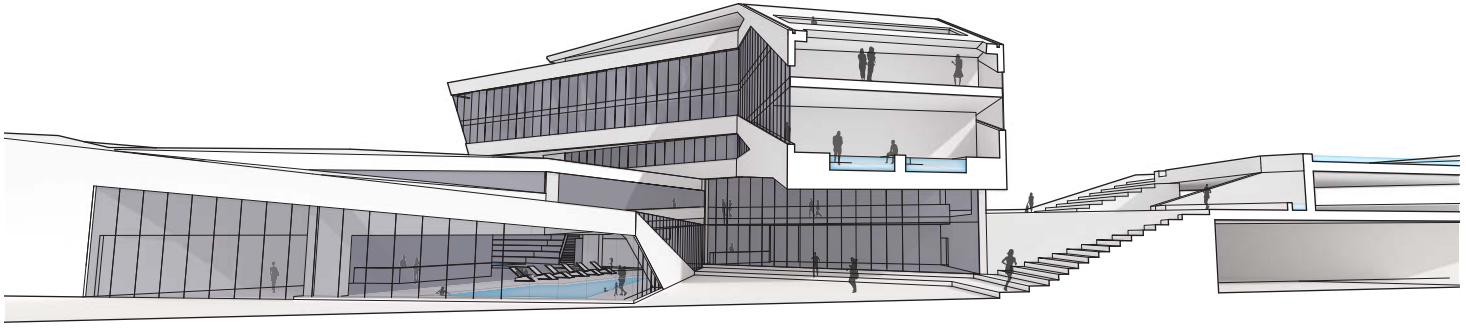
[site] Bywater Neighborhood
New Orleans, Louisiana

Tasked with combining an aquatic center with a hotel, spa, restaurant, and commercial spaces into one complex on a post-industrial site, this proposal sought to string the program elements together in a linear fashion which is wrapped back on itself to create dynamic exterior courtyard spaces. Through this manipulation, all of the activity on the site is funneled through the center of the site to allow for greater interaction between visitors to the site. Furthermore, the wrapping of the program creates visual programmatic relationships across all of the program elements.
Organizationally, the program is situated in a way to encourage pedestrian use of the site, allowing the aquatic center and retail space to have the most interaction with the surrounding neighborhood. Parking is accommodated towards the back of the site. The ground plane was lifted up to allow for a public park space with views of the industrial canal from it.

Project Team : Marcus Allen, Ian O'Cain

1.2 BYWATER AQUATIC CENTER

SOLARIUM PERSPECTIVE

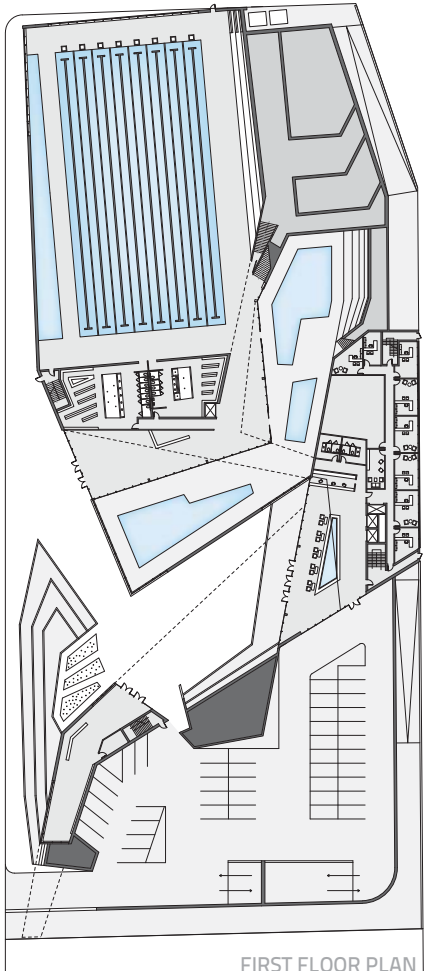


SECTIONAL PERSPECTIVE

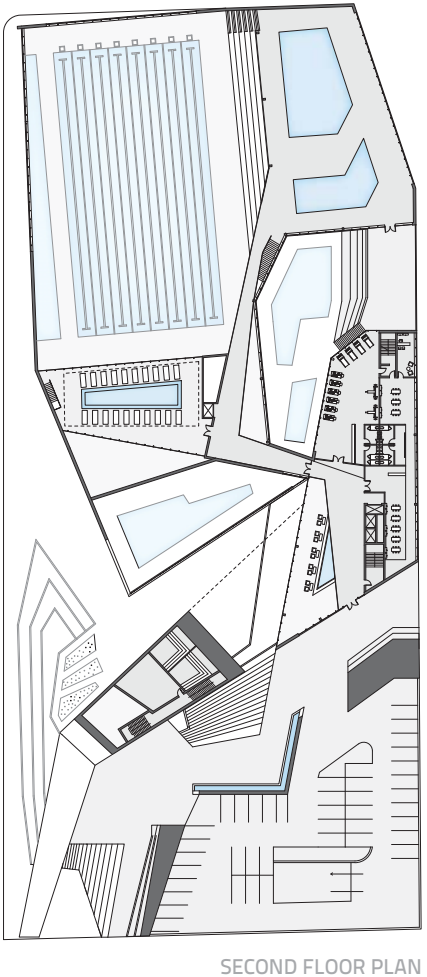
OLYMPIC POOL PERSPECTIVE

COURTYARD PERSPECTIVE

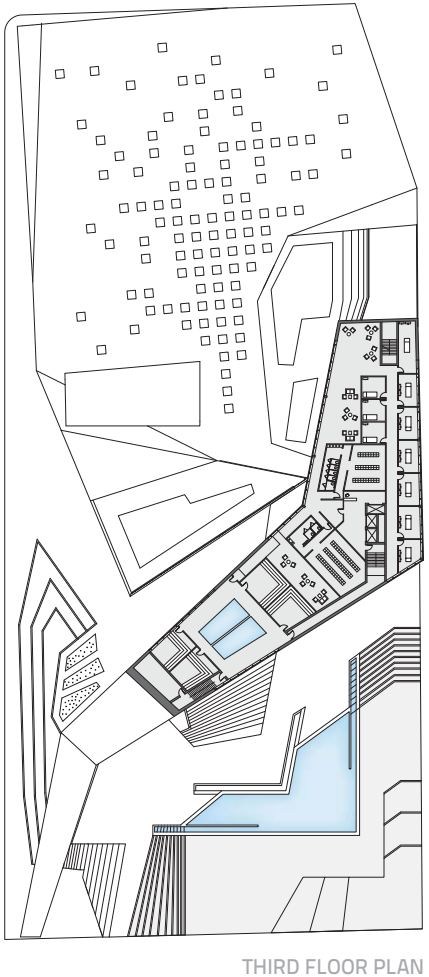
1.2 BYWATER AQUATIC CENTER



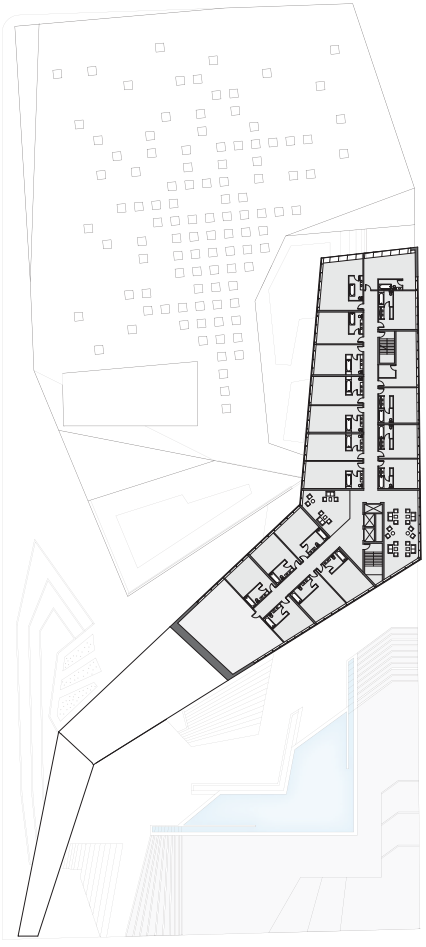
FIRST FLOOR PLAN



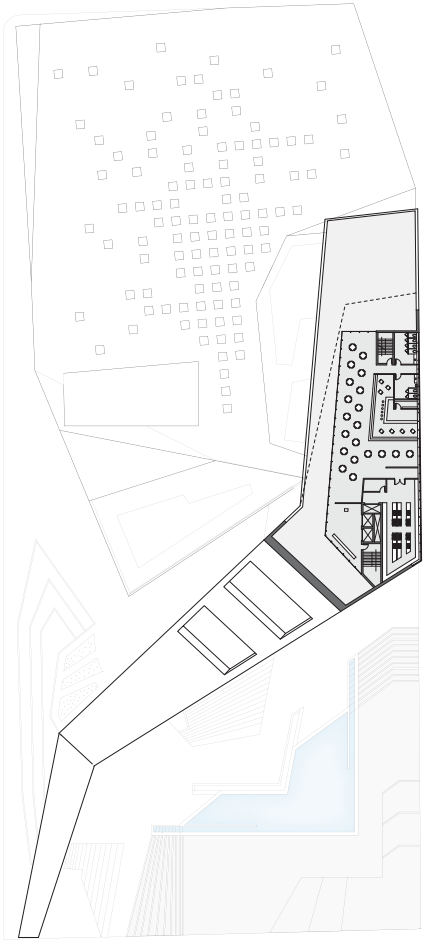
SECOND FLOOR PLAN



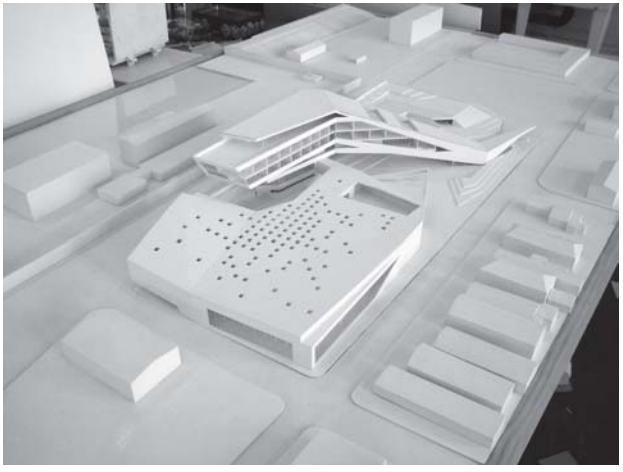
THIRD FLOOR PLAN

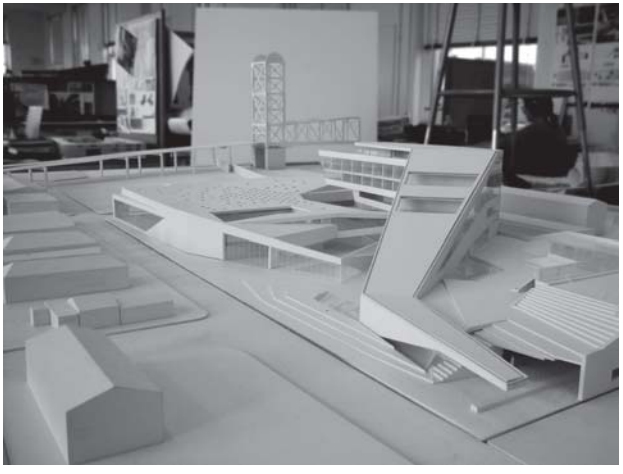


FOUTH FLOOR PLAN



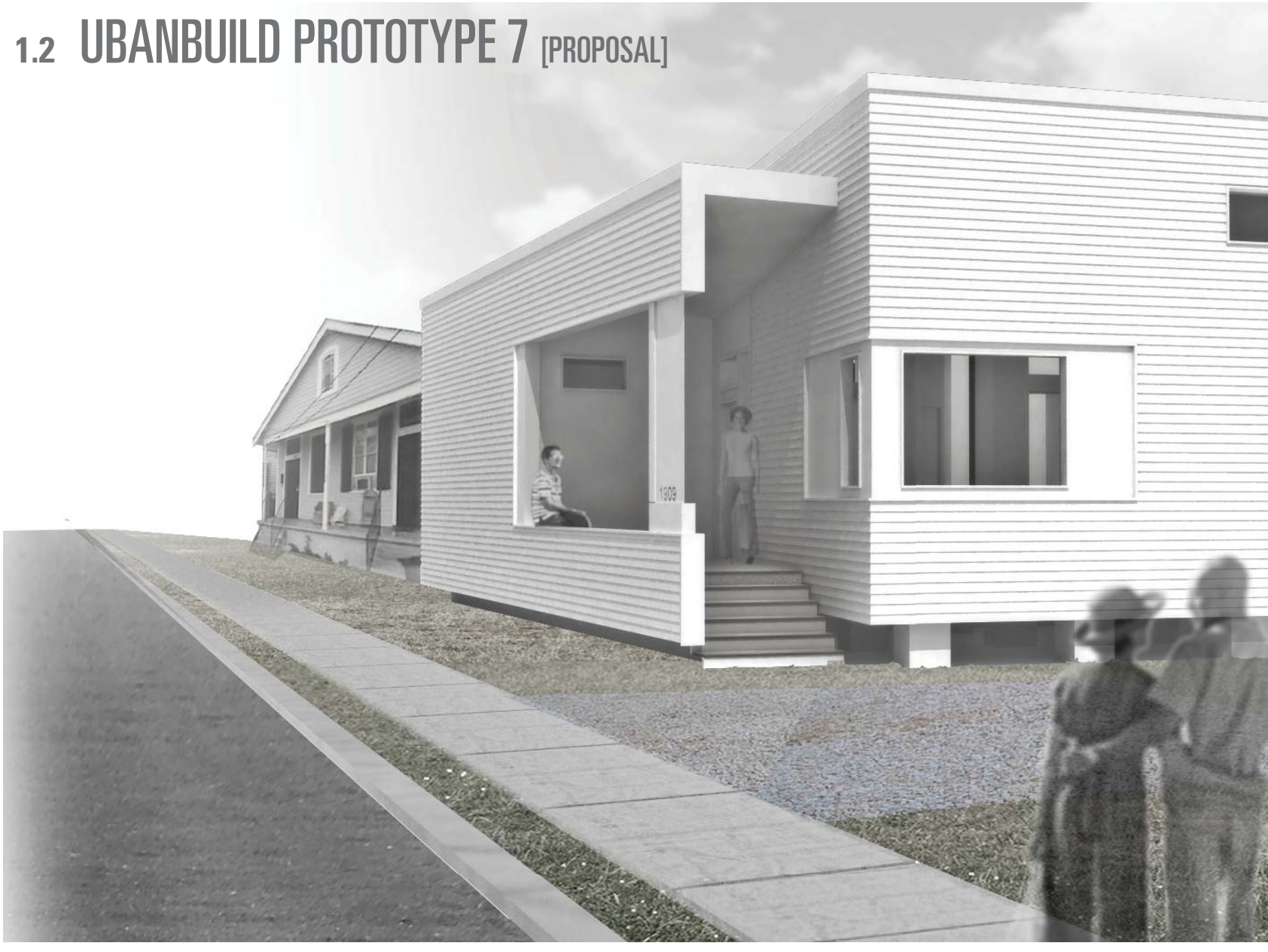
SIXTH FLOOR PLAN

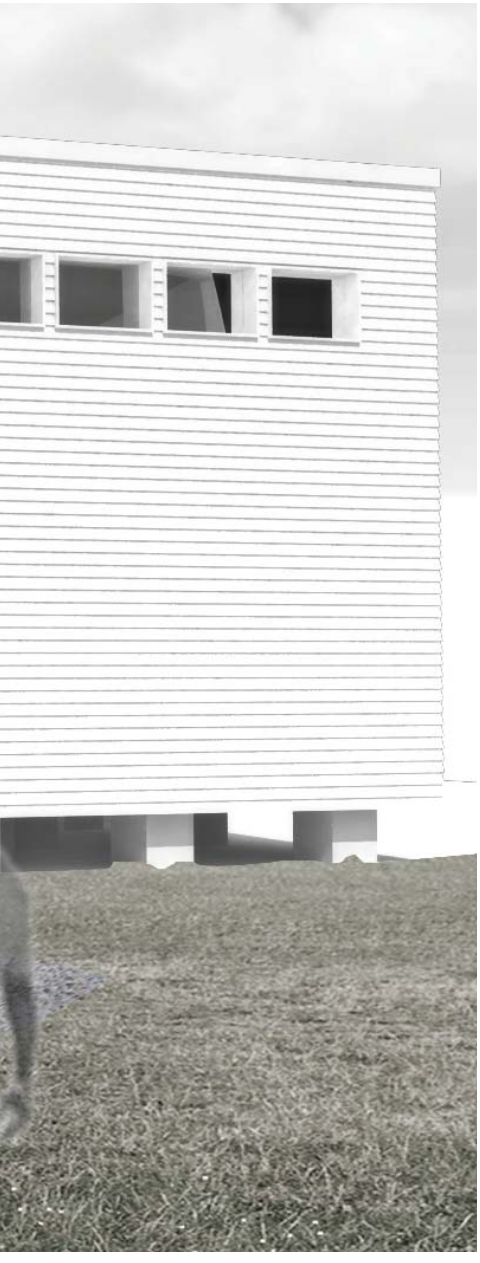


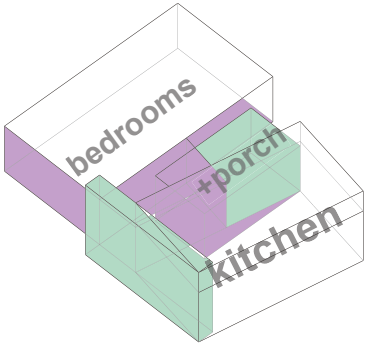


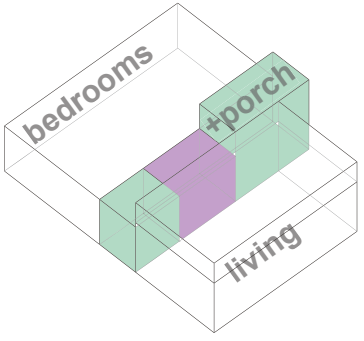
MODEL PHOTOGRAPHS

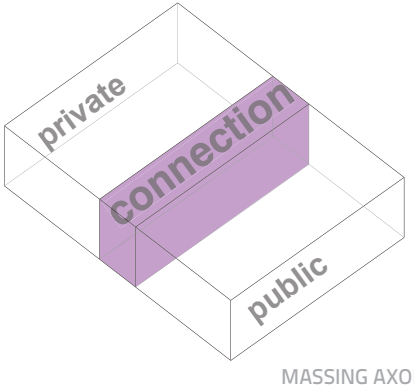
1.2 UBANBUILD PROTOTYPE 7 [PROPOSAL]











MASSING AXON

Fall 2011
Fourth Year Studio

[site] Central City Neighborhood
New Orleans, Louisiana

Designed as part of Tulane University's Urban-Build program, the V house is a proposal for a 3 bedroom, 2 bath, 1200 sf single family home in the low income neighborhood of Central City. The lot provided for this design was not that of a typical New Orleans shotgun lot, instead the lot was an almost square 65' by 62' lot which was a combination of two substandard lots. This unusual lot size provided the opportunity for interesting explorations that are not normally done in a New Orleans residential design setting.

The V house is designed to create an enticing series of spaces in the entrance sequence leading to the back porch, the interconnecting bridge piece. The V shape is created separating the two programmatic branches, one public and the other private, while angling the public branch to create optimal solar lighting and gain and create a more open inner porch space. The porch not only creates a sanctuary of an interior/ exterior space, but also allows all parts of the main public bar to connect visually with the exterior and the other rooms across the porch.

Project Team : Clayton Kaul, Ian O'Cain

1.2 UBANBUILD PROTOTYPE 7 [PROPOSAL]

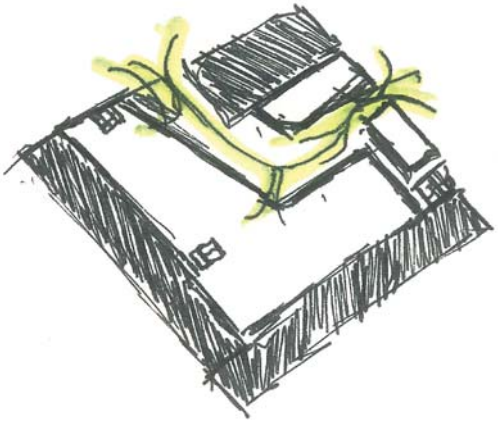
FLOOR PLAN

MASTER BEDROOM

VIEW FROM DINING ROOM

BACKYARD PERSPECTIVE

1.3 FRENCH QUARTER PUBLIC LIBRARY



CREATED COURTYARD DIAGRAM

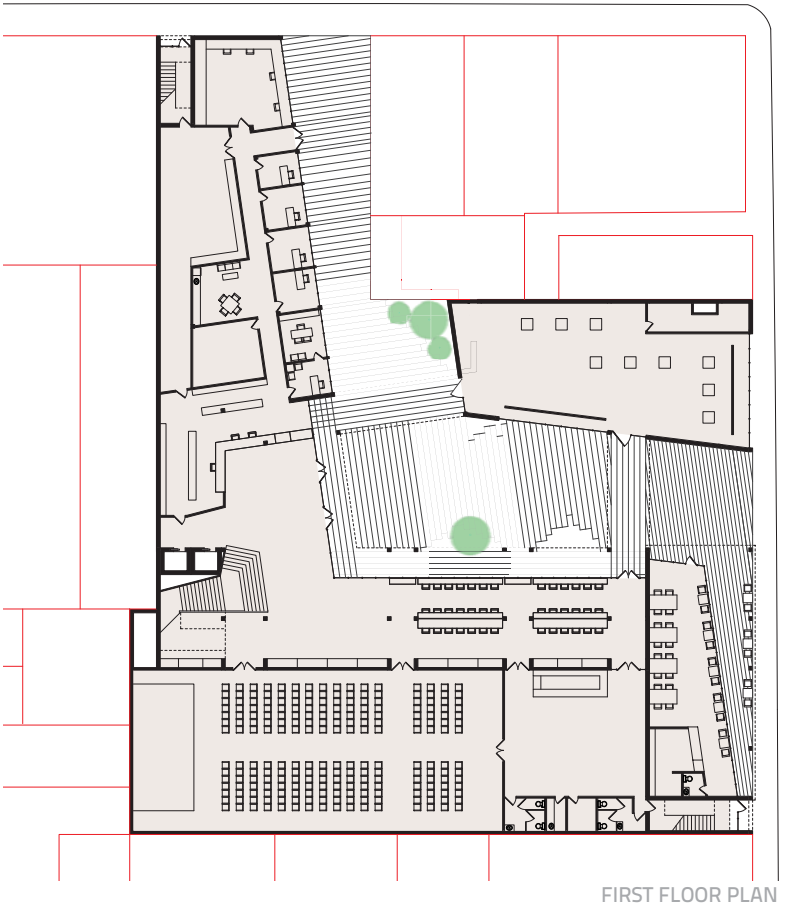
Fall 2010
Third Year Studio

[site] French Quarter
New Orleans, Louisiana

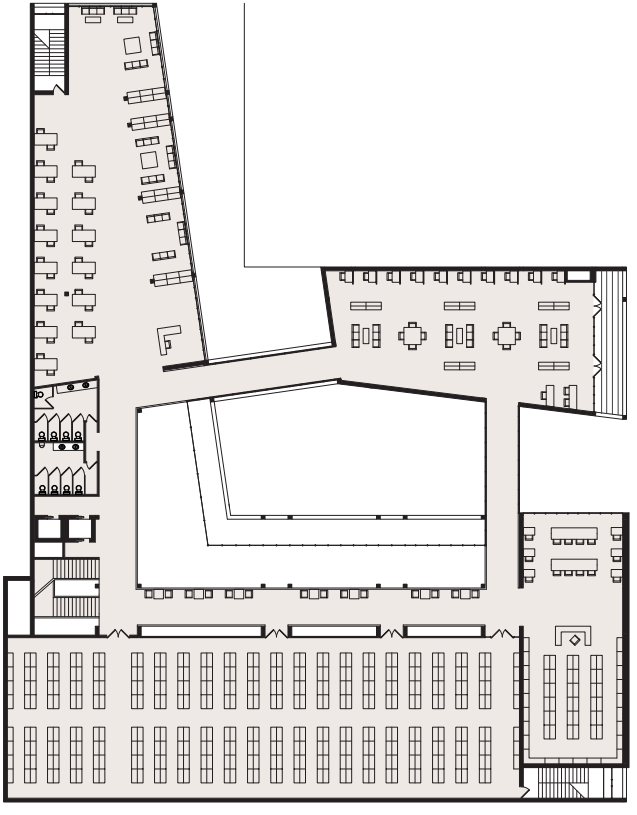
Situated on a large lot in a busy area of the French Quarter of New Orleans, the design sought to create a library that responded to the historic nature of its surroundings. Drawing on inspiration from the courtyards and pedestrian streets in the French Quarter, the design utilized a large cut through in the site to break down the scale of the building and create a welcoming public outdoor space that could be accessed from both Toulouse and Chartres. This pedestrian street takes prominence in the scheme with all functions of the building being accessed from it.

Social functions such as the exhibit space and cafe were fronted on Toulouse Street to attract visitors that may be passing on the street and draw them towards the library. Stack areas were pulled to a sheltered position on the site away from the damaging direct sunlight let in by the cut through. The reading room and exhibit space take a special place on the site in their own massing accessed on the upper floors by bridges. Overall, the design seeks to draw visitors into its central entry on the site and circulate them through clear orbiting paths.

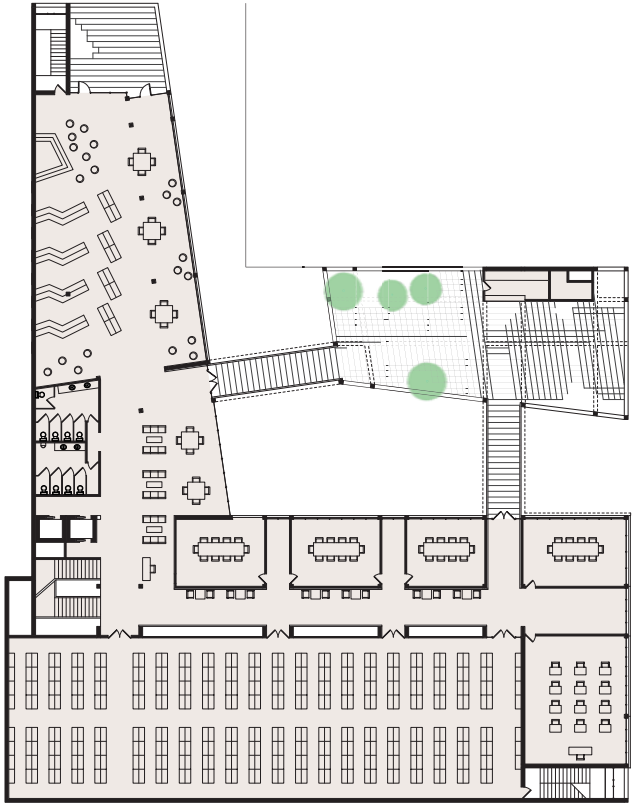
1.3 FRENCH QUARTER PUBLIC LIBRARY



FIRST FLOOR PLAN



SECOND FLOOR PLAN

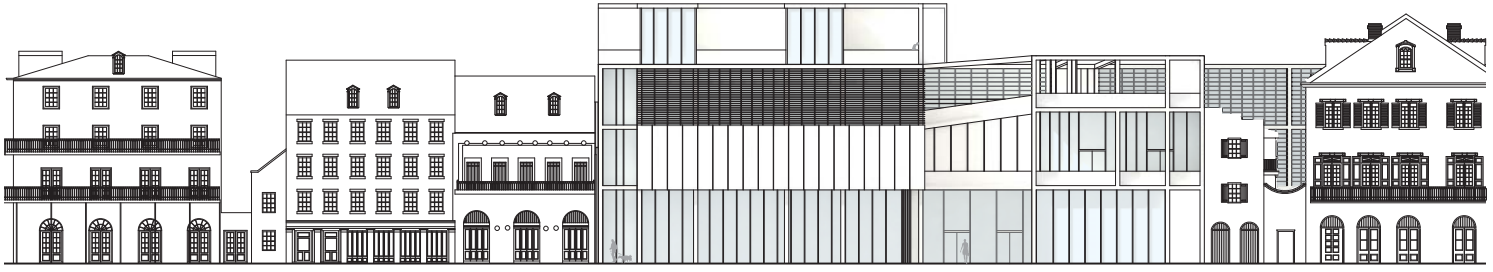


THIRD FLOOR PLAN

MODEL

1.3 FRENCH QUARTER PUBLIC LIBRARY

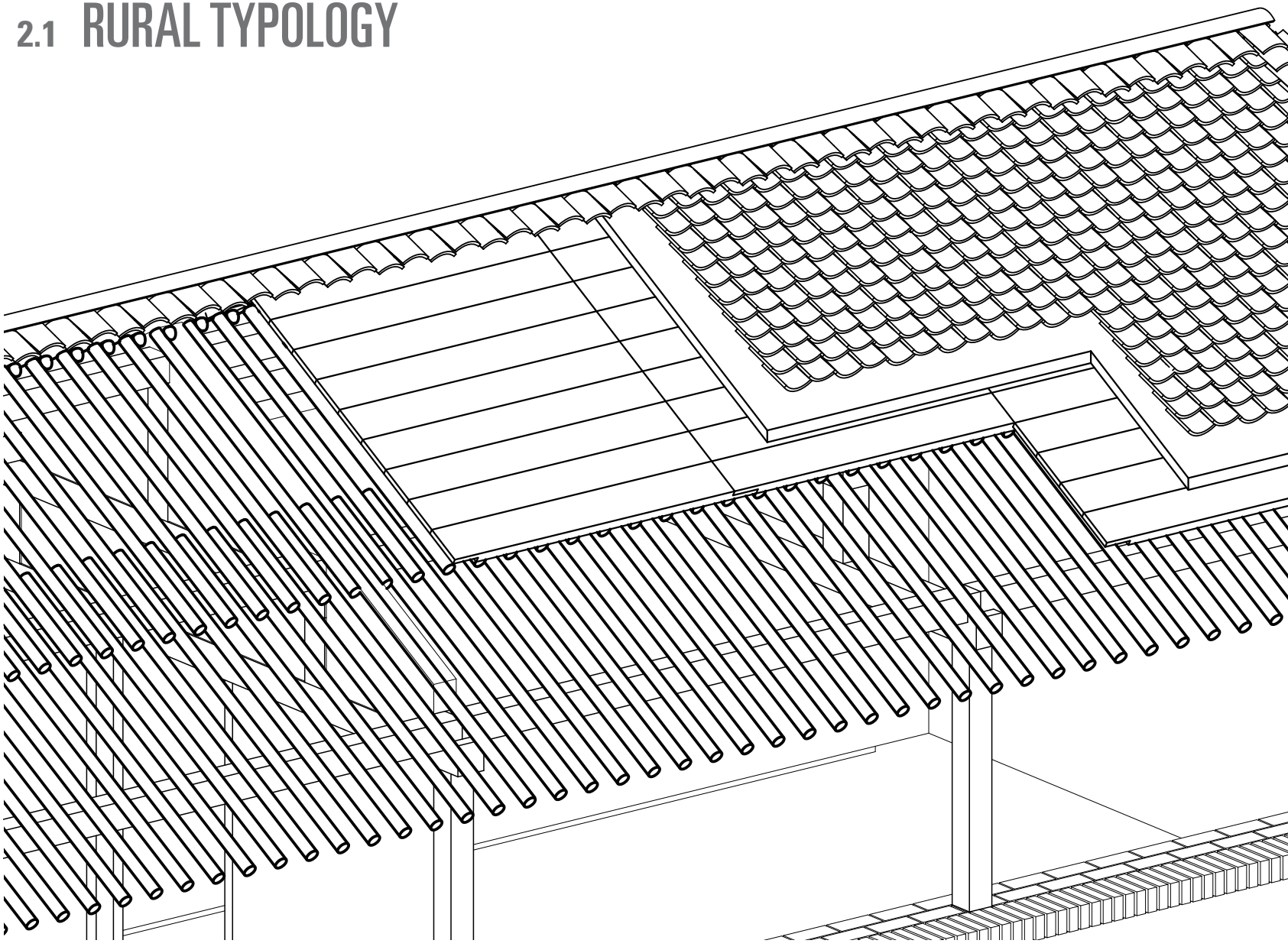
ENTRY COURTYARD

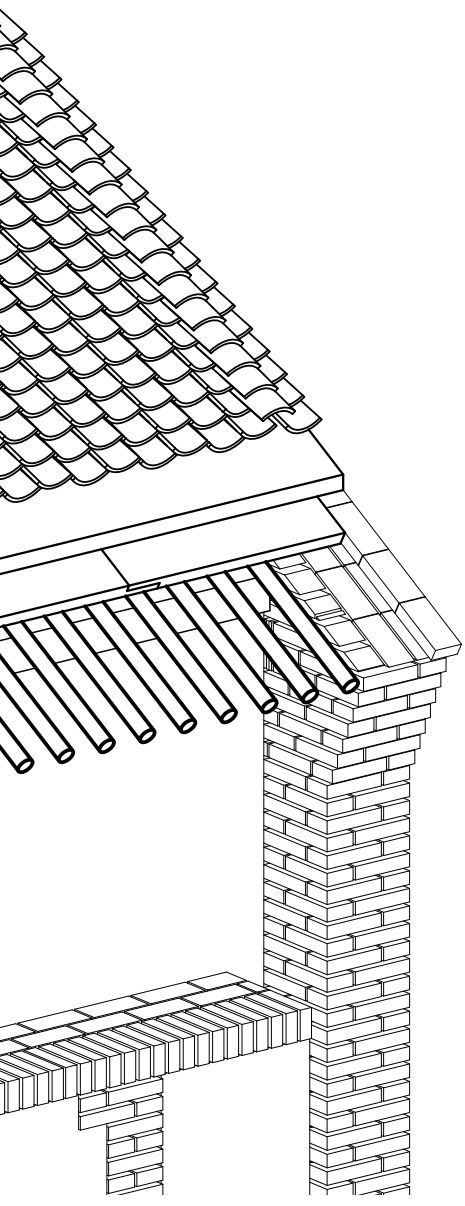


TOULOUSE STREET ELEVATION

CHARTRES STREET ELEVATION

2.1 RURAL TYPOLOGY





Summer 2011
Tulane B.A.S.E. Beijing

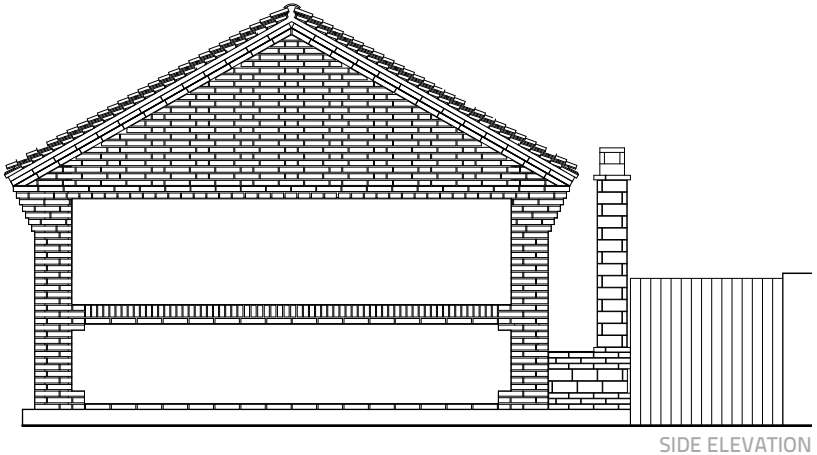
[site] Pearl River Valley
Beijing, China

Traveling through the villages of Beijing's Pearl River Valley, one cannot help but notice the typology that almost all houses conform to. Each house utilizes the some style and construction methods despite the wealth of the owner. Recently, new houses have been constructed that attempt to replicate this traditional building method stylistically, but they do not posses the same aesthetic appeal. Something about these old traditional houses creates a sense of beauty in the simplicity and modest nature of their construction.

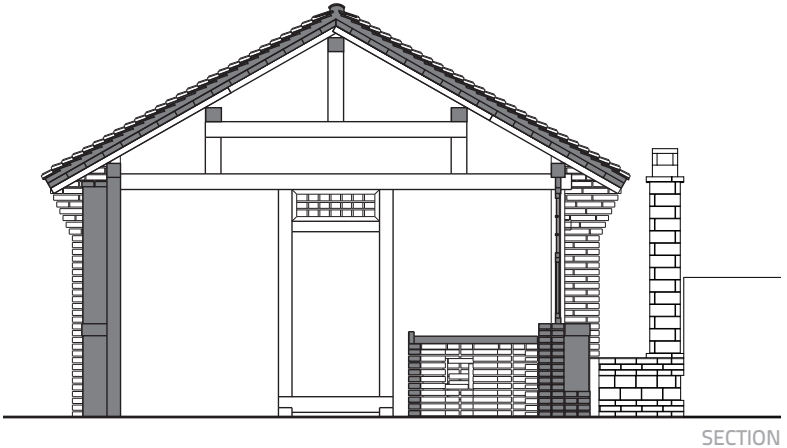
The objective of this project is to document this traditional housing type, analyzing its method of construction, and create a drawing set to preserve this building type. Since there are slight variations between house, two traditional houses of the Upper Water Valley were selected as accurate representations of the building type. The details in this book were extracted from these two houses and then cross examined with other houses in the Pearl River Valley for cohesiveness.

2.1 RURAL TYPOLOGY

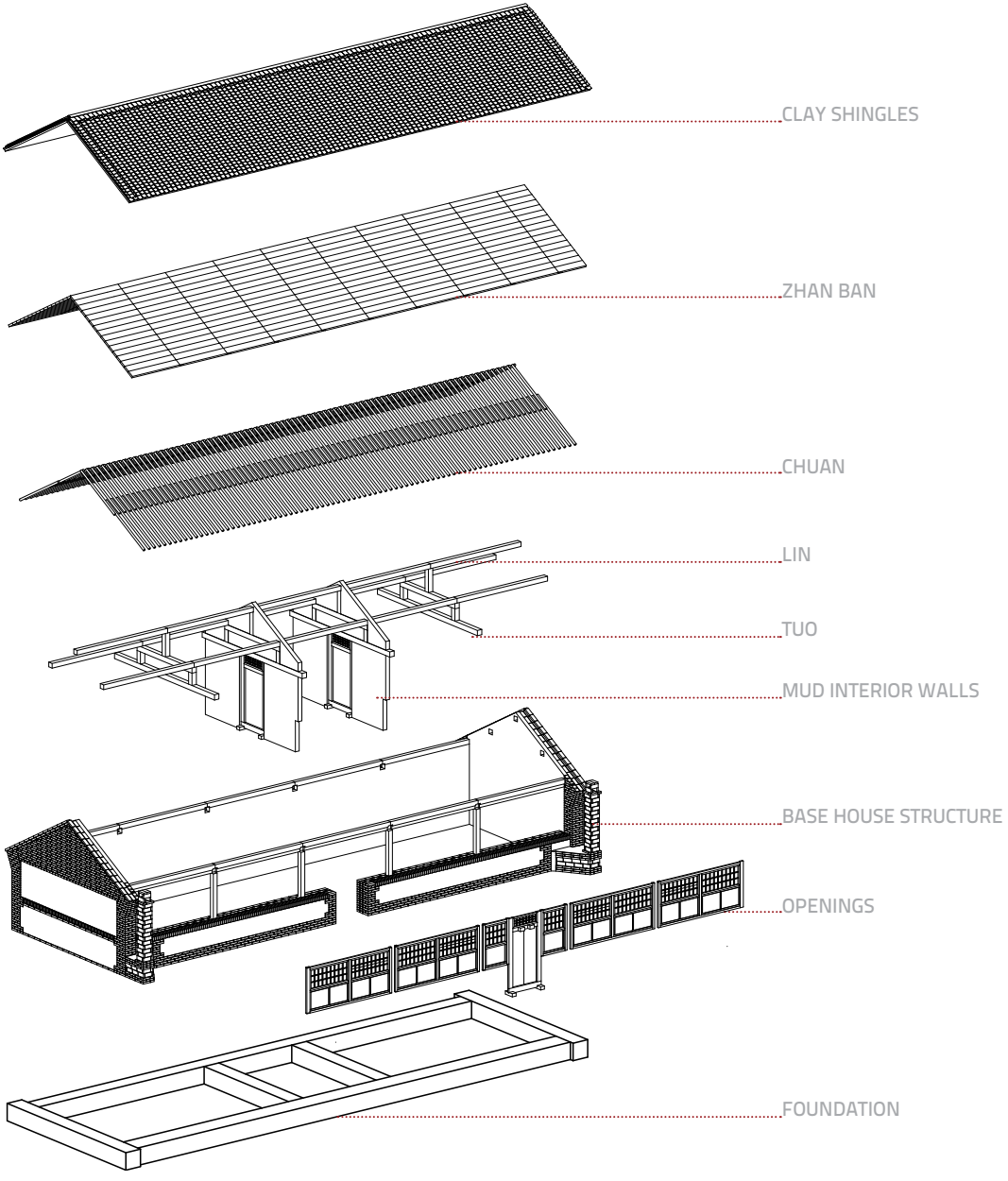
FRONT ELEVATION



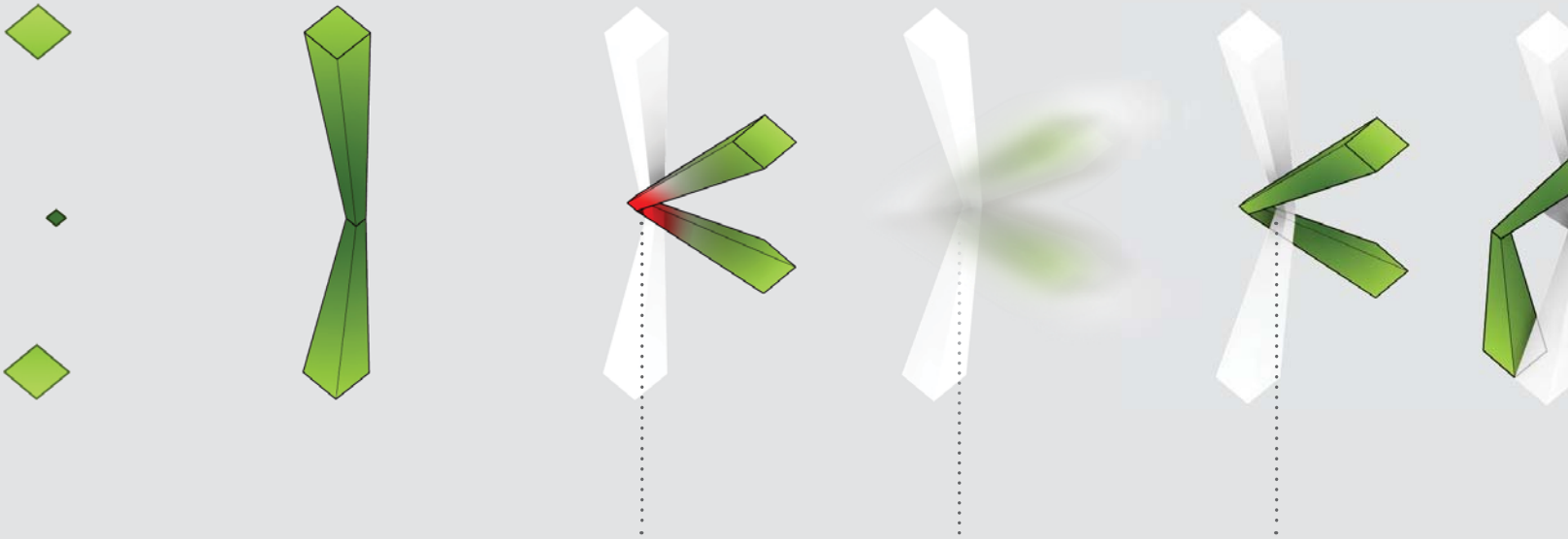
SIDE ELEVATION



SECTION



2.2 PATH INTERSECTION NETWORKS



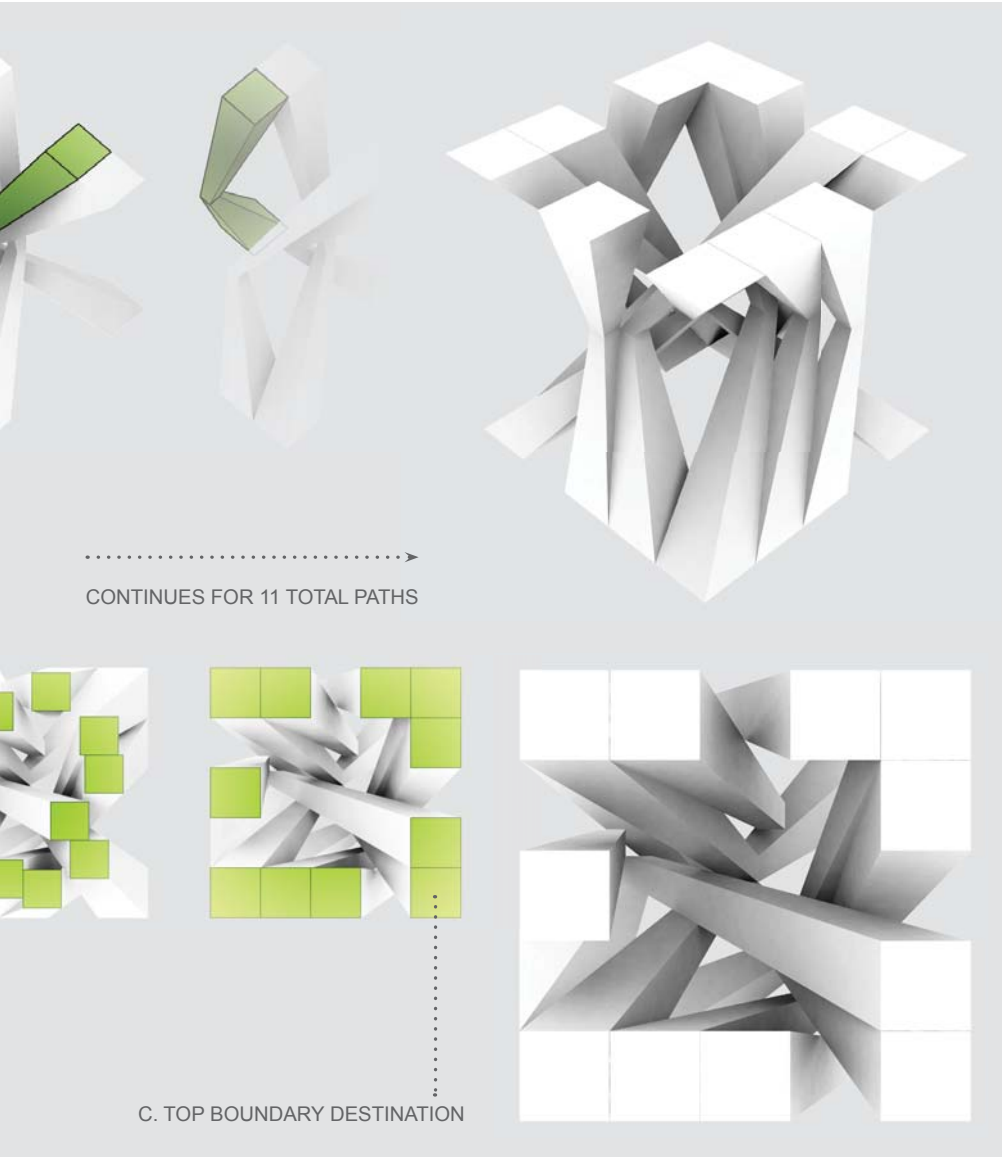
INVALID INTERSECTING PATHWAY

DELETE INTERSECTION

VALID ALTERNATE PATH

A. BOTTOM BOUNDARY DESTINATION

B. CENTER DESTINATION



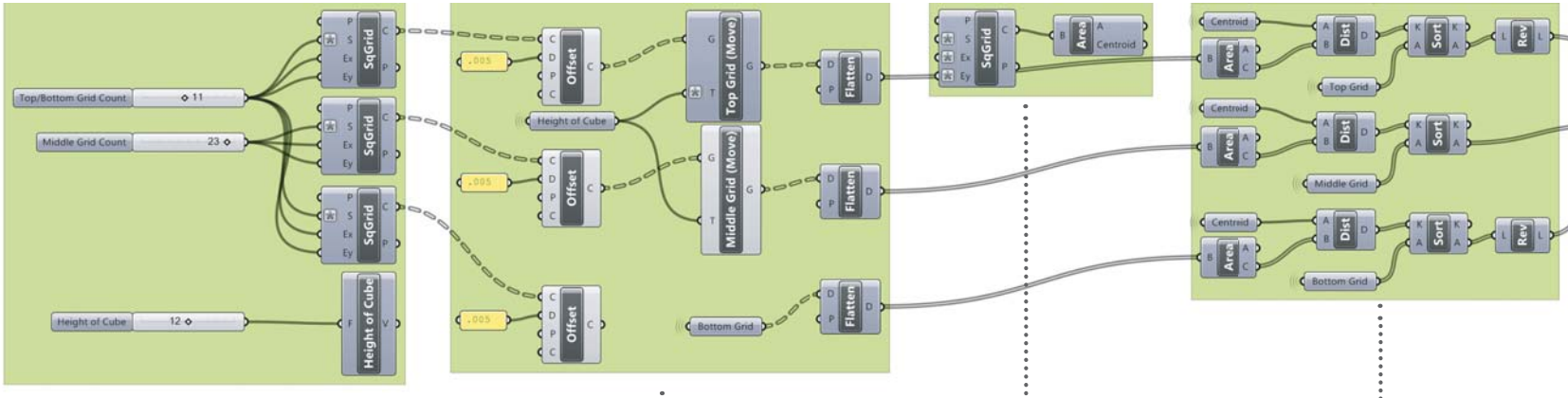
Spring 2011
Advanced Digital Modeling

Parametric Modeling
via Grasshopper and Rhinoscript

Looking to define the space bounded by a 2' cube, the design team became interested in how objects could move through a space. The question was asked of how a path could move through a space and navigate around obstacles and other paths, with thought of implications for traffic systems.
Using Rhino in combination with Grasshopper and Rhinoscript, a script was produced to find the most efficient path through the space. In this case, the ideal path was from the corner of a bottom plane to the center of a middle plane and back to a corner of a top plane. Once this was found, the script then worked to find the next most efficient path, trying to come as close to the corner, center, corner, ideal path. If a path was found that intersected a previously created path, the new path was deleted and another option was tried.
The resulting form was a series of square tubes that wove through the space without intersection creating was determined to be an "ideal" system of movement.

Project Team: Tyler Guidroz, Ian O'Cain, Guan Wang

2.2 PATH INTERSECTION NETWORKS

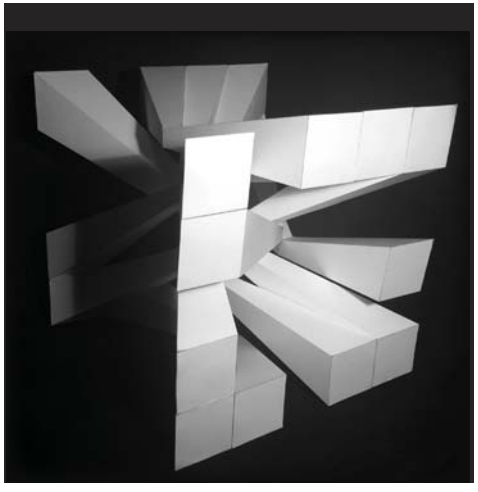


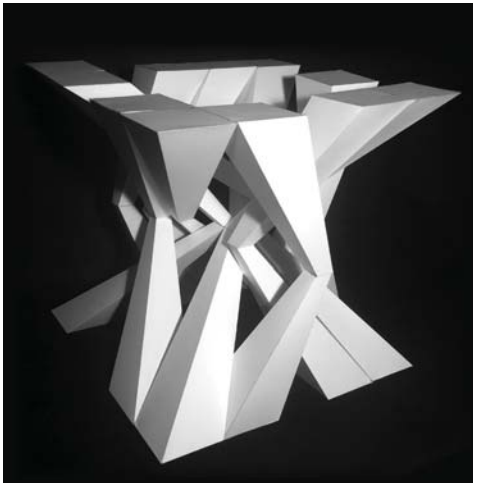
MAKE THREE GRIDS

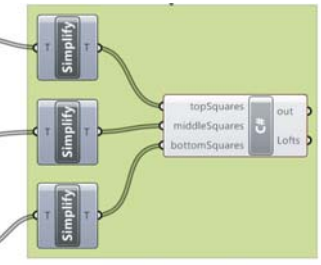
SEPERATE INTO
TOP, MIDDLE, BOTTOM GRIDS

LOCATE CENTROID OF
SQUARES IN GRIDS

SORT SQUARES IN GRID
BY DISTANCE FROM CENTROID







LOFT AND CHECK INTERSECTION

```
1. p    rivate void RunScript(List<Curve> topSquares, List<Curve> middleSquares, List<Curve> bottomSquares, ref object Lofts)
2.      {
3.        List<Brep> loftList = new List<Brep>();
4.        for (int i = 0; i < topSquares.Count; i++)
5.        {
6.          for (int j = 0; j < middleSquares.Count; j++)
7.          {
8.            Brep loft = loftSquares(topSquares[i], middleSquares[j], bottomSquares[i], ref loftList);
9.            if (loft != null)
10.           {
11.             loftList.Add(loft);
12.             break;
13.           }
14.         }
15.       }
16.       Lofts = loftList;
17.     }
```

C# SCRIPT TO LOFT SQUARES ON GRIDS TOGETHER TO FORM PATHS

```
1.      private Brep loftSquares(Curve topSquare, Curve middleSquare, Curve bottomSquare, ref List<Brep> loftList)
2.      {
3.        List<Curve> mySquares = new List<Curve>();
4.        mySquares.Add(topSquare);
5.        mySquares.Add(middleSquare);
6.        mySquares.Add(bottomSquare);
7.        Brep myLofts = Brep.CreateFromLoft(mySquares, Point3d.Unset, Point3d.Unset, LoftType.Straight, false)[0];
8.        //check for intersections
9.        bool intersects = false;
10.       foreach (Brep b in loftList)
11.       {
12.         Curve[] curves = new Curve[0];
13.         Point3d[] points = new Point3d[0];
14.         Rhino.Geometry.Intersect.Intersection.BrepBrep(b, myLofts, 0.01, out curves, out points);
15.         if(curves.Length > 0)
16.         {
17.           intersects = true;
18.           return null;
19.         }
20.       }
21.       if (intersects == false)
22.       {
23.         return myLofts;
24.       }
25.       else return null;
26.     }
```

RECURSIVE CHECK ON INTERSECTING PATHS

3.1 H.A.N.O. BUNKHOUSE + OFFICE

MAIN OFFICE ENTRY

SHARED COURTYARD

Fall 2011
Fourth Year Studio

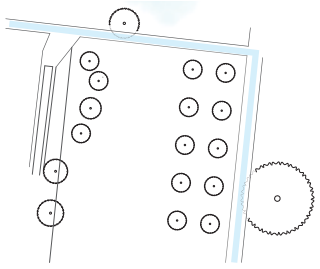
[site] Hoffman Triangle, New Orleans LA
Winning Project

Asked to design a new home for Hands On New Orleans' office and bunk house operations for fundraising, the project sought to give both program elements their own definition while allowing them to share in the peaceful qualities of the large site.

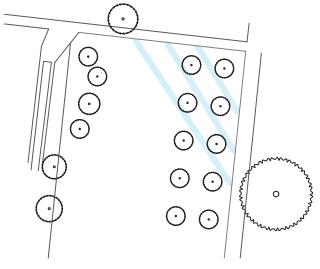
The buildings created parallel each other on the long tapering site with the office fronting the main street of Washington Ave. and the bunk house fronting the opposite direction opening to the parking lot to allow for bus loading and unloading for volunteers on a daily basis.

The form of both buildings was developed in response to the multitude of programmatic elements asked to be fitted in each. The design seeks to give each element its own bar that is then shifted back and forth in an attempt to dissolve the line between interior and exterior space.

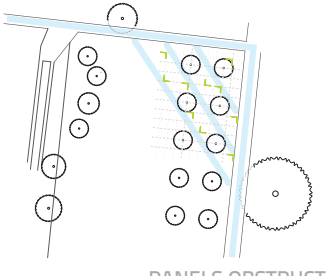
3.2 CANVAS [ARCHITECTS WEEK 2011]



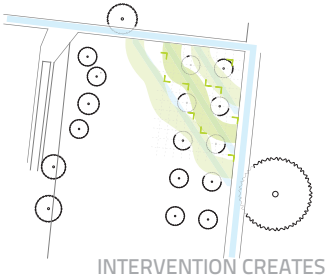
DESIRED PATHS



PANELS OBSTRUCT
DESIRED PATHS



INTERVENTION CREATES
INDIRECT DESIRED PATHS



Spring 2011
Tulane University

[site] LBC Quad, Tulane
Featured on ArchDaily.com

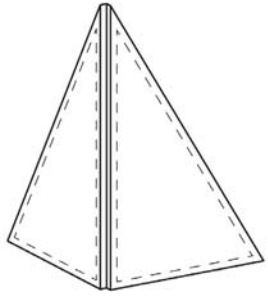
Architects' Week at Tulane is a unique occasion for students to work in teams with a design professional with the goal of making our school a bit more like a community.
This year's design competition was different from Architects' Week previously. Instead of having program that describes the end result, we were given a starting point.
Responding to the theme of sensory interaction, the team recognized early on that we had been given a site with a high level of pedestrian foot traffic. Many students going to and from class opt to cut diagonally through the crape myrtle rows. Our design intended to both direct and interrupt this informal pedestrian flow with a series of interactive elements. These elements became self – supporting art canvases. As more people happen through the area, the canvases are activated by the artistic whims of the Tulane community.

Project Team: Led by Ian O'Cain and Brian Sulley, with Guan Wang, Tyler Guidroz, Marcus Allen, Katherine Delacy, Audry Flynn, Michael Kirschner, CJ Gassam, Roland Solinski, Kristen Korndoerfer, Wanhao Cui, Caroline Meyer, and Mira Asher.

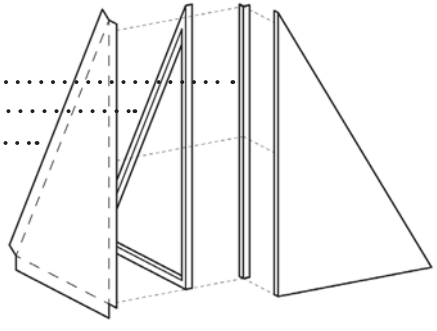
3.2 CANVAS [ARCHITECTS WEEK 2011]

STRUCTURAL INTERVENTION
CANVAS FOR PUBLIC ART

INDIRECT DESIRED PATHS
FORM GALLERY SPACES



ASSEMBLY
STEEL ANGLE
WOOD FRAME
CANVAS



DIFFUSION OF LIGHT

CANVASES AT TIME OF INSTALLATION

CANVASES 3 DAYS LATER