CoLAB

an exploration in networked, collaborative and interactive spaces
I am proposing to create a student housing hub for the various architectural colleges within the city of Chicago (IIT, UIC, SAIC & Colombia College). I am imagining not only making a physical connection but also creating a digital environment where students can collaborate, network and share ideas at their leisure. The phrase “living-learning environment” comes to mind when thinking of my project, with so many advancements in technology, within architecture and within the public domain our learning has extended beyond the classroom. Although these schools were chosen primarily for their architectural distinction, the hub will welcome students across all disciplines.

Digital design has reduced the distinction between studio and classroom activities, so it is essential to create an environment where students can explore their ideas amongst themselves and on their own time. Most design education programs emphasize the importance of peer-to-peer learning which primarily occurs at informal learning spaces.
collaborate

1

: to work jointly with others or together especially in an intellectual endeavor

laboratory

1

: a place equipped for experimental study in a science or for testing and analysis; broadly : a place providing opportunity for experimentation, observation, or practice in a field of study
The student housing hub will create a series of physical, visual and intellectual connections:

Transit
Educational
Materiality
Collaboration
Ideas
Digital Network

Flexible and interactive spaces promote learning and keep the student/individual interested. Students are increasingly connected via social networking websites - twitter, facebook, tumblr, gmail - although many of them live in residence halls that predate the personal computer. Spaces will be planned so that they offer the opportunity for, but not dictate a specific type of learning activity. With the creation of this hub, new connections between the university and the larger architectural community will be established. The student housing hub will supply the need for an alternative housing environment where students can live, teach and learn comfortably.
Stakeholders & Interest
Quality of Environment
Today students expect hotel-like amenities, ample space for leisure activities and most importantly security within their environment. In order to create such an environment, the space should have the following characteristics:

Sufficient space for prototyping with room for fabrication

Flexibility

An absence of uniformity or predictability

A warm, secure, comforting environment

Easy access to needed materials and tools

An environment and a culture that encourage experimentation, reward success and are non-critical of failure

A sense of playfulness

Sufficient opportunity for both visual and tactile interaction

Ready access to information sources

A ready refuge from day to day activities that distract from the creative mind set

Appropriate for demonstrations and meetings
Traditionally the dimensions of a prison are 8 ft. by 6 ft. with a minimum ceiling height of 7 ft. for clearance, these cells have a single toilet and twin bed. This is the bare minimum space that prisoners are supplied with that is deemed occupiable. The International Building Code says that a room must be a minimum of 70 square feet in order for it to be habitable, again this is the bare minimum. Is it possible for a room or an apartment to be small in size while still supplying maximum comfort levels?

During a study abroad trip to Copenhagen, Denmark I was able to experience living in a Danish kollegium. “A kollegium is the Danish equivalent of an American residence hall or dormitory model - but there are some significant differences. As European universities usually do not have campuses, the rooms in the different kollegiums used are shared between many Danish universities and colleges, thus allowing you to meet a variety of students from many disciplines and backgrounds.”

One interesting thing about the kollegiums was the maximization of space, the rooms weren’t super large but they were comfortable and well designed. The lack of space in my personal room was accommodated by the communal areas such as the community kitchen and various lounge areas.
“The scale of the human body informs almost every aspect of architectural design.”

“It is established that one’s environment is a major determinant in one’s emotional and mental state”. Architectural education can often be draining, students are faced with stringent deadlines, exposure to demeaning critiques and often-times sleep deprivation. The formal teaching of architecture takes place within the studio and lecture hall but our learning does not stop when we leave the classroom nor does our creative impulse to design. In my experience, an architectural idea or design will come to me at the most inopportune time and or place such as during a dream or while standing on the elevated platform waiting for a train or even simple while having lunch with a friend. Architects and students of architecture will often carry a sketchbook with them specifically for these types of situations, but is that enough to express one’s design idea? For some the pen or pencil has its limits, which is one reason architecture has evolved as a profession, now we are equipped with a new set of tools, digital tools.

In today’s society it is necessary to create a living environment where students can fully express their design ambitions. “42% of residence halls now include classroom space. It is particularly prevalent in the Midwest and Far West.”

“In addition to criticism of student work provided by instructors, most programs of design education emphasize the importance of peer-to-peer learning: the informal discussion of work in progress and sharing of knowledge among students.”

I am proposing to create an environment where students will experience absolute comfort physically and creatively.
“Digital design has reduced the distinction between studio and classroom activities”. Today students can barely survive without some form of technology. Whether it is a cellphone, ipod, laptop or even a video gaming system, the necessity of digital technology has become almost second nature to human beings. With technology ever evolving, architecture continues to make major strides as a profession. As architecture continues to grow, architectural education must also evolve to prepare students for the workforce and also to test and develop new methods of design and production.

SAGE: Scalable Adaptive Graphics Environment

SAGE is a graphics streaming architecture for supporting collaborative scientific visualization environments with potentially hundreds of mega pixels of continuous display resolution. In collaborative scientific visualization, it is crucial to share high-resolution imagery as well as high-definition video among groups of collaborators at local or remote sites.

The network-centered architecture of SAGE allows collaborators to simultaneously run various applications (such as 3-D rendering, remote desktop, video streams and 2-D maps) on local or remote clusters, and share them by streaming the pixels of each application over ultra-high-speed networks to large tiled displays.

When I first came across this newly developed technology I immediately thought that this should be applied to architecture. This technology would fit well with the type of networking and collaborative environment I am trying to create in this project.

Another recently developed technology which is slowly making its way into the architectural community is the Kinect for Xbox 360. Kinect is a motion sensing input device by Microsoft for the Xbox 360 video game console. Based around a webcam-style add-on peripheral for the Xbox 360 console, it enables users to control and interact with the Xbox 360 without the need to touch a game controller, through a natural user interface using gestures and spoken commands. The project is aimed at broadening the Xbox 360’s audience beyond its typical gamer base. Kinect competes with the Wii Remote Plus and Play Station Move with Play Station Eye motion controllers for the Wii and Play Station 3 home consoles, respectively.
Site Selection
In order to create a hub for the various architectural schools within the city of Chicago, the site must be centrally located so that it is easily accessible. The site must be easy to get to via public transit i.e. CTA bus, elevated train and Metra train. It is also important that occupants of the proposed hub have necessary amenities that are not available within their housing complex such as hardware, art and grocery stores.
Location
The South Loop is one of the fastest growing neighborhoods in the Chicago area. In recent years many condominium and loft builders have bought much of the vacant land, which has resulted in an abundance of flourishing new construction. Aside from residential buildings the area offers a variety of shops and restaurants to suit everyone's needs. Tourists also flock to this area to experience such sites as Museum Campus, Soldier Field and Grant Park.
View looking east along Roosevelt Road toward elevated train platform.

View at the intersection of Roosevelt Road and South Clark St. looking east.

View outside of Target store, Willis Tower in the distance.

Looking north down S. Clark Street toward site.

Outside the Target parking complex.

Salle Street Metra line.

1000 S. Clark St., project site.

View from southeast corner of site plot looking toward Dearborn Park.

View along S. Clark St. beside Dearborn Park residences.
Site Analysis
Roosevelt Road
a major east-west thoroughfare in the city of Chicago, Illinois. Runs from the Loop to the southern city limits, intersecting 127th Street on the bank of the Little Calumet River.

State Street
a major north-south street in the city of Chicago, Illinois. Runs from the Loop to the southern city limits, intersecting 127th Street on the bank of the Little Calumet River.

Michigan Avenue
is a major north-south street in Chicago which runs at 100 east (except for one private block that runs at 125 east) south of the Chicago River and at 122 East north of the river from 12625 South to 950 North in the Chicago street address system. Michigan Avenue also is the main commercial street of Downtown Chicago and is known as Michigan Avenue Historic District and most of the Michigan–Wacker Historic District, including the scenic urban space anchored by the Michigan Avenue Bridge.

Lake Shore Drive
is a mostly three and four lane expressway running parallel with and alongside the eastern shore of Lake Michigan through Chicago, Illinois.
Travel time from site:
17 minutes to IIT via Green Line train
17 minutes to UIC via Blue Line train
12 - 15 minutes to SAIC and Colombia via Red Line or Green Line train.

Roosevelt is a ‘L’ station on the CTA’s Green and Orange Lines. It is an elevated station with a single island platform, located at 22 East Roosevelt Road in the South Loop community area of Chicago, just east of State Street. Free transfers to the Red Line subway station of Roosevelt are available at this station, and the Museum Campus/11th Street Metra station is about 1/3 mile to the east. The station is also the closest ‘L’ station to the Museum Campus of Chicago and Soldier Field, which are about 1/2 mile to the east.

CTA Buses
#12 Roosevelt
#18 16th/18th
#29 State
#62 Archer (Owl Service)
#129 West Loop-South Loop
#146 Inner Drive/Michigan Express
#192 University of Chicago Hospitals Express
CTA Orange, Green & Red Lines
Roosevelt/Wabash
Metra Electric and South Shore Lines
Museum Campus/11th Street
Shadow Study
Fall Equinox:
September 21

Shadow Range:
6:00am - 6:00pm
Spring Equinox: March 21

Shadow Range: 6:00am - 6:00pm
Summer Solstice:
June 21

Shadow Range:
6:00am - 6:00pm
Winter Solstice:
December 21

Shadow Range:
6:00am - 6:00pm
Solar Analysis
Site Influence
Green Connection
Proposed Park @ Roosevelt Collection

Green roof at grade landscaping and vertical green walls

Dearborn Park

Roosevelt Park
Transit lines of circulation
Program
<table>
<thead>
<tr>
<th>PRIVATE</th>
<th>PUBLIC</th>
<th>SUPPORTIVE</th>
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<tr>
<td>Studio Apartments</td>
<td>CoLAB</td>
<td>Laundry Room</td>
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<td>Common Kitchen</td>
<td>Auditorium</td>
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<td>Lounge</td>
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<tr>
<td>Quiet Study</td>
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<tr>
<td></td>
<td>Media LAB</td>
<td>Parking</td>
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Sketches/
Design
Development
Inc of Green Space
- Green space/wall used as a buffer
  - living wall
    - benefit: reduce local wind speed, traffic noise, localize temp extremes
  - physical & mental health & wellbeing
  - BLANK WALL
- air filtration

Living Wall

Pilotis Entry point

bike racks/storage

Lower level Landscape @ entry/gathering
Inc of Green Space
- interior & semi exterior
- rear living wall to block Roosevelt collection + use a social barrier/education tool
- interior circulation w/ green space
Inc of Green Space Connected to circulation
Exterior + Interior spaces atrium, hanging gardens terraces
Green technology as an educational tool

- Buffer
- Views
- Day light
- Housing
- Hanging Garden Atrium
- Apartments
- Service @ base
- Public
- Private
- Residence

- Lounges + Comm Kitchen's
- Fitness Auditorium LABs
- Apts
Views, Orientation, Circulation
- Downtown vs. Southern Exp
- Problematic Concerns
  - Roosevelt Collection
  - AMILI 900 High Rise
- Interior Views + Circulation
- Hanging program connected through circulation
Branching
Uniformity & ordered/chaos

5 + 5 = 10 units x 10 levels = 100 units

Central elevator/stair core

Circulation E skyways lead to individual rooms

* Each studio apartment is uniform
  - same shape
  - roughly 400 sq ft
  - studio/1 person
  - private

* The journey (circulation to & from apartment)
  is a unique experience
  - Dynamic views
  - Dynamic lighting from various angles
  - Supportive program
  - Insertion of vegetation and/or green spaces
1. Porous - Cutting through the mass gives visual connections.

2. City views

3. Network of Views

4. Internal Network of Program

5. Network of Circulation

6. Co-Lab

- Cafe
- Auditorium
- Conference Kitchen
- Housing
- Quiet Study
- Lounge
- Fitness
- Temp Sleep
- Park
- Mail Room
- Laundry
- Bike
- Server
1 Phase One
1. Mail Room
2. Server Room
3. Check In/Security
4. Security Control
5. Outdoor Space
1. Stage
2. Cafe
3. Auditorium seating
4. Circulation core
5. Circulation core
1. Social Study Area A
2. coLAB 1
3. coLAB 2
4. Social Study Area B
5. Quiet Study Rooms
1. Yoga and Pilates Area
2. Half Basketball court
3. Multi-sport Area
4. Bridge overpass
1. Men’s Locker room
2. Women’s Locker room
3. Stretching/ Warm Up Area
4. Climbing Wall
1. Connected lounges
2. Common Kitchen
3. Lounge
4. Common Kitchen
5. Lounge
Although stacked units are feasible, a poor and uninspiring aesthetic is created. 

Pull apart the volume to create a porous wall.

Void spaces allow for natural light to enter the internal space.

Introduction of green space into the newly formed voids.

An interesting social space is created within the voids for students to interact while walking through the hallways.
2 Phase Two
Exterior Perspective: looking South
Spatial Concept

- Supportive Collaborative Space
- Collaborative Space
- Habitable Green Roof
- Cafe
Interior Perspective: Looking East from cafe
Interior Perspective: open collaborative space
Interior Perspective: open collaborative space
Typical Residential Floor

1. Lounge
2. Common Kitchen
3. small collaborative space
4. Void space
5. Studio Apartments
Spatial Concept

Void Space/
Connection between
Collaborative Spaces

Collaboration
Space

Common Kitchen

Lounge

Studio Apartments
Zoom view
Of
Connected Collaborative
Spaces
In the common kitchen areas located at each end of the residential level, students may gather to enjoy a group dinner or individual students may invite their guest to enjoy a meal in a larger setting. The common kitchen is another area where students will meet and interact, forming new relationships and friendships.
At each residential level a small coLAB exist, where students can interact, form small study groups, network and collaborate. Each room will be equipped with SAGE (Scalable Adaptive Graphics Environments) which is a graphics streaming architecture for supporting collaborative scientific visualization environments with potentially hundreds of megapixels of continuous display resolution.
Transverse Section
Elevation: looking West
Housing Study
A spectacular building with a sense of community, round buildings are uncommon in the city grid, and its distinctive shape is what gives this student-housing facility its identity, while also reinforcing a sense of community among residents. The architects wanted to create space for both the community and each resident by placing equal emphasis on the individual apartments and common facilities such as kitchens and lounges.

Architects: Lundgaard & Tranberg Arkitekter A/S

Apartments: 360 studio apartments, 26-33 sq. m.

Tietgenkollegiet
Copenhagen, Denmark
we have chosen to create a single space flowing from floor to floor throughout the student housing part, the “vertical living room”. This creates a diversity in the spaces provided and emphasizes the connections between floors. The private sleeping units are minimized in order to give space to the large vertical living room. The public ground floors holds computers, rooms for group activities, gym, and a swimming pool. These are public spaces free for everyone to use and will serve as an important part of the neighborhoods street life.

Have a Nice Day
Toronto, Canada
El Lissitzky argued that as long as humans cannot fly, moving horizontally is natural, and moving vertically is not. Thus where there is not sufficient land for construction, a new plane created in the air at a medium altitude should be preferred to an American-style tower. These buildings, according to Lissitzky, also provided superior insulation and ventilation for their inhabitants.

Spatial balance is in the contrast of vertical and horizontal tensions.

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Steven Holl began studying horizontal skyscrapers many years before his now famous projects - Horizontal Skyscrapers and Linked Hybrid arose. Holl’s most likely first attempt at creating a horizontal skyscraper was the Gymnasium Bridge across the Harlem River in 1979. This project was a building bridge-like structure only in its span across the river. It was significant for the cultural connections which it would make between the South Bronx and Manhattan through the many activities and events it would house.
References


