RETHINKING THE URBAN LIVING ENVIRONMENT:
utilizing new building technologies to create self-expressive and expandable living environments.

A Low-Income Housing Block in Chicago, IL

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Yes, the Möchste:
A villa in the green with a large terrace,
ahead the Baltic Sea, behind the Friedrichstraße;
with beautiful outlook, rurally-fashionable,
of the bathroom of the train trip to tendon is,
however evenings to the movie theater have not dozed far.
That very simply, full modesty:
Nine rooms - no, but rather ten!
A roof garden where the oaks pulled thereon stehn,
radio, headquarters heating, vacuum,
a servant shaft, well and dumbly,
a sweet woman of full race and Verve
(and one for the Wochenend, to the reserve)
a library and drumherum loneliness and Hummelgesumm.
In the stable: Two ponies, four thoroughbred stallions, eight cars,
motorcycle - all lenkste naturally itself - the wär yes laughed!
And in between you go on Hochwildjagd.

"The Ideal", Kurt Tucholsky
INTRODUCTION TO THE THESIS PROJECT

This thesis pursues the idea of creating a more meaningful experience of living in mass housing in an urban context:

Architecture is the material expression of human existence, and embodies the ideas of each age in its works. One’s dwelling or home is the material expression of an individual’s identity. It is within the realm of the dwelling unit where the family tends to act out its most intimate life functions. Social institutions such as family, work, leisure, and spirituality are constantly changing and are affecting the demands of buildings to accommodate these social changes. There seems to be, especially in mass housing, a loss of self-identity for the individual and little regard for social changes that are affecting the most basic social unit: the home.

The current/conventional methodologies for creating mass housing revolves around structural, functional, and economical efficiencies that result in functionally undifferentiated and monotonous environments. The design of the unit [home] and community environment is determined by statistics and political agendas. This thesis project will explore architectural opportunities in mass housing to embrace new building technologies, specifically component off-site fabrication, and changing social patterns to create an urban living environment that focuses on interpersonal exchange, physical adaptation, and self expression; an environment to live, learn, express, and grow.
02 THESIS TOPIC: ISSUES AND POSITIONS: current situation

Architecture is the material expression of human existence, and embodies the ideas of each age in its works. One's dwelling or home is the material expression of an individual's identity. It is within the realm of the dwelling unit where the individual/family tends to act out its most intimate life functions, and where the basic social unit finds its spatial counterpart in its most direct and symmetrical way. Social institutions are interconnected and relate to one another are under constant change. Architects control only a fraction of the total production of buildings, the real influence of architects on social transformation and environmental change is indirect at best and entirely negligible at worst. Architects, can though, embrace current social issues such as globalization, restructuring of the family home, and advances in building methodologies to begin creating all encompassing living environments that benefit the users.

High density housing sprouted up in and around our urban areas after the World Wars in response to the immediate housing shortages that developed. These housing systems were set up for structural, functional, and economical efficiencies. Because of the social issues driving the design, this type of housing had an efficacy and because of this, the design in mass housing has changed very little. Mass housing was and is seen as a static container for the individual to occupy. Its structural, functional, and formal features are determined mainly by the technology and the production process as such, which have changed drastically in the past century, yet mass housing has remained the same. The structural, social, and formal similarities of mass housing have resulted in visually and functionally undifferentiated environments situated within dynamic and culturally diverse urban districts. There is an inherent need within these banal housing systems for individuals to express themselves and become more integrated into the urban environment. User needs are determined statistically, and there is seldom any opportunity for the user to effect or alter their habitat in a significant manner. Individuals become alienated from interactions of communal importance and interactions with their physical environment.

The very success in qualitative terms of typical approaches has led to a massive and broad based commitment to a limited range of technological solutions, which, by their very extent, inhibit the evolution of new and alternative technologies and housing models. There seems to be a common recognition today of the failure of these conventional models. Today planners, sociologists, and architects are challenging current housing systems due to new demands for diversity and differentiation as a result new lifestyles, new technologies, social changes, and the search for a more affordable and vital living environment. At what point do we, as designers, remove ourselves from design decisions and allow for a natural process of evolution/personalization to occur? As architects, how do we set up social and physical systems that individuals can significantly grow and change in?
How can mass housing embrace new building technologies and address social change to create more meaningful and affordable urban living environments that focus on interpersonal exchange, physical growth, and self-expression?
02 THESIS TOPIC: ISSUES AND POSITIONS: new challenges in housing

Although social structures have changed considerably in the past decades, resulting in a significant decline in the average nuclear family. The typical apartment floor plan is still almost exclusively designed for the needs of just such a family, despite the new developments. It isn’t as if today’s variety of lifestyles imposes an imperative for specialized floor plans. Rather, what we need are flexible types that make it possible to react to changing life circumstances by simple means (Schittich 11). New concepts are needed and these concepts illustrate a multitude of contemporary solutions for well-designed multi-storey housing systems.

Building Form

The number of floors plays a key role to the success of a housing project. High density housing built in the 1970s such as Chicago’s infamous Robert Taylor Homes and Cabrini Green Housing create social problems due to the lack of social interaction within the building community, a failure to integrate with the wider urban context, and an inadequate connection to outdoor space. The quality of the corridor space is also essential to create an environment that benefits the user. Residents will be more receptive to corridors with attractive qualities that render them usable as an extension of the living space. A more active corridor space also promotes social interaction between the users which results in a rich environment to grow in.

Urbanity

Living in linear housing developments in a green setting has been debunked as individual isolation in an environment that offers neither spatial qualities or urbanity. Today the small so-called green space between detached homes becomes inhospitable and a labor-intensive nuisance rather than a place of freedom. The city apartment integrated into the urban fabric can be far more luxurious than the detached country home, provided the city living provides a house-like environment with interior and exterior transitions, a small yard, garden, or roof patio, and flexible floor plans. The quality of living aimed for in the country retreat can easily be surpassed in an urban environment with the help of architectural and technical means (Schittich 13). Little housing projects in the US focus on these aspects and force individuals to retreat to the peripheral of the city to find the ‘American dream’. Le Corbusier created the fundamental basis for living in one’s own home and in the city. In his book “La ville radieuse”, published in 1935, the revolutionary idea is described in bare words: “Here are ‘artificial sites’, vertical garden cities. Everything has been gathered here: space, sun, view; means of immediate communication, both vertical and horizontal; (...) The architectural aspect is stunning! The most absolute diversity, within unity.”
Individuality

Architects, such as Roland Rainer, Mies van der Rohe, and Le Corbusier have always been fascinated with the idea of the ‘villa in the sky’ approach to urban living. Roland Rainer wrote: “In view of the desolate banality of most rental apartments, erected today by various developers, on the one hand, (...) in view of the well-documented rapid change in family dynamics, lifestyle and living standards, on the other hand, the idea of being able to buy or rent a floor, where one could create living spaces with adjacent patios etc., to one’s own specifications and connect them to cables of all kinds, thus gaining an individual home, a single-family house in the air, so to speak, without land use, access costs or garden ‘work’ has tremendous appeal.” There have been many, but futile, attempts to achieve this idea in such projects developed by a group of architects S.I.T.E., Erik Friberger, and Corbu in his Unité d’Habitation. Even in Corbusier’s Unite, individuals were only offered visual identification or identity by color alone, which is too little. Only a structured city is a recognizable city. This task is made easier by the fact that the demand for individual appearance and the necessity of outdoor space as a garden experience on each level overlap in the exterior view of the condominium. Each unit is indispensably reliant on immediate contact with nature, that is, an encounter with biological processes (Schmitt 23). Swiss architect Otti Gmur wrote: “But earth, water, and air must be available to us for this purpose. For the experiences and observation must be made on one’s own initiative; in a piece of nature that is more than an attempt to decorate a sterile environment.” The individual must not be forgotten in his environment and be given the opportunity to express, grow, and interact with the urban environment.

“In a house without a bed, the rug that provides cover at night is precious, in the wagon with out upholstery the pillow tossed on the hard floor is precious. But in our well-appointed homes there is no place for anything precious because there is no room for the service it can give.”

walter benjamin
02 THESIS TOPIC: ISSUES AND POSITIONS: new challenges in housing

Floor Plan

Floor plans must take the changing social conditions into account and respond to the shift in household configurations, as well as to changes within the family. Fewer and fewer apartments are home to the classic nuclear family and the variety in contemporary lifestyles is reflected in adaptable housing structures. Be it housing co-op, nuclear family, or single-parent family, work at home or home office—what is required are flexible apartments where most rooms are usage neutral in plan. The changing social dynamic of the family leads to new requirements for the individual functional areas:

Cooking
The zone for cooking, dining, and living offers an especially vivid illustration of the changes and the dissolution of the family unit. Meals are increasingly taken outside of the home, and meal preparation has become nearly obsolete as a result of ready-to-serve meals. The kitchen is also the place where friends are entertained, children are raised, this is where the mobile family gets together, if they still get together at all. The kitchen is no longer the workplace of the housewife, but a multi-use, social space that assumes the functions of the living room.

Living and Dining
Given the changes in the cooking-dining area, the living room has also taken on a different status. The life of adults and children is marked by a growing independence and differences in daily routines. As the individual members of households become more autonomous, floor plan requirements are approaching those of a classic housing co-op. A mere ten years ago, the location of the television was still a reason for shared use of the living room; today, each individual room often features a complete range of media and the living room is on longer the center of an increasingly fragmented family life.

Bathroom
The space for personal hygiene, its direct lighting, size and fixtures, have become an important yardsticks by which the quality of apartments are assessed. Today a large, well-lit spa bathroom tops the wish list of influential groups of buyers. Recently, many apartments are built with two, fully equipped bathrooms. There is a growing "cocooning-wellness-zone" which coincides with the bedroom and becomes an intimate wellness space.

Individual Rooms/Bedrooms
Today one bedroom per person is the norm. Raised expectations for withdrawing to a private space have transformed it from the original small sleeping cabin that we know from social housing schemes into a multi-functional living, sleeping, and working space. Users are also looking to these spaces to have a outdoor space directly accessible.
Flexibility

Adapting the apartment to individual needs by simple means is a major topic in housing since the quantitative aspect of the housing question seems to have been solved. Flexibility has long since ceased to be associated with the economy of day to night adaptability. Despite the advantages offered by flexible systems, it is difficult to interest investors, buyers, and renters for projects of this kind because the adaptations can only be realized subsequent to initial occupation. The resulting exploration then becomes the design of a base building that allows for ease in ongoing adaptation. User adaptation must not interfere with other user’s day to day activities and the systems that allow for change must be developed for a vast array of variation. There must be a base design that offers users all of the aspects of a positive living environment and then the adaptations improve upon this and help individuals grow and express themselves.
02 THESIS TOPIC: ISSUES AND POSITIONS: current technologies

The mass production of goods drives our industrial society. Everything from the clothes on our backs to the food we eat is mass produced in a highly technical and systematic process. How can architects look to other industries and the processes that drive design and production and bring them into the realm of architecture? New industrial technologies are bringing a level of flexibility and efficiency to major industries, such as automobile manufacturing, that can be utilized in the production of architecture.

These new technologies and building methodologies have been successfully utilized in single family homes, but how can it be used in mass housing? What parts of the system or components can be flexible/adaptable and what components are standard and fixed? Utilizing this systematic and component base approach to design and building can create physical environments of flexibility and variability in mass housing which conveniently promotes static, banal, and permanent containers for living. The processes used today create banal living environments in both mass housing and single family homes that infect our suburban neighborhoods. How can architecture utilize a highly systematic and industrial process to produce interesting architecture that is capable of adaptation and change, and in particular, creating an intriguing and affordable living environment? This is a time when architecture needs to embrace new design and building methods to create better and more affordable dwellings for individuals to live, learn, and grow in.

"The new architecture will not be about style, but rather about substance - about the very methods and processes that underlie making."

Stephen Kieran
change is necessary
02 THESIS TOPIC: ISSUES AND POSITIONS: a brief history

The idea of prefab or the factory produced home is not a new one and has a history of influential architects trying their hands at the idea. Prefabricated building systems can be traced as far back as the seventeenth century when a panelized wood house was shipped from England to Cape Ann in 1624 to provide housing for a fishing fleet. By 1908, Henry Ford's Model T successfully demonstrated that mass production could be used to manufacture high-quality objects as large as a car. Factory production yielded lower prices and better quality for many consumer goods as well; the hope was that application of these production techniques to housing would similarly improve its quality, affordability, and accessibility.

Aladdin Readi-Cut Houses, founded in 1906, was the first company to offer a true "kit" house composed of precut, number pieces. The company sold approximately 65,000 Readi-Cut model homes before going out of business in 1981 (Arieff 13). Shortly following, Sears, Roebuck & Co., began selling homes through its catalogs and sales offices. Each Houses by Mail incised lumber, nails, shingles, windows, doors, hardware, and house paint (Arieff 15). The volume of homes sold allowed Sears to maintain flexibility and offer its clientele a wide variety of designs. The main goal or drive of the 'kit' homes was to offer a well-designed, built, and customized home to the middle-class members of society. The project lasted from 1908 to 1940 and over 100,000 homes were produced and delivered to the public (Arieff 17).
After World War I, European countries were desperate for new housing and embraced prefabrication as a time and cost effective method of building. Prefabricated concrete, steel, and wood systems were being developed all over Europe, but the most significant developments in prefabrication came from Le Corbusier. In 1914 he developed the Dom-tro House that was a new type of skeletal-framework that eliminated the need for load-bearing walls. Corbu developed a number of mass-produced housing schemes and even wrote an essay on the subject titled "Mass Production Houses," written in 1919. Corbu writes, "If we eliminate from our hearts and minds all dead concepts in regard to the house, and look at the question from a critical and objective point of view, we shall arrive at the 'House-Machine', the mass-production house, healthy (and morally so too) and beautiful in the same way that the working tools and instruments which accompany our existence are also beautiful."

As early as 1910 leading advocates of the international style were calling for the industrialization of housing and architects such as Adolf Meyer and Walter Gropius were experimenting with industrialized housing systems. One such system was the 'Building Blocks System' of standardized flat-roofed housing (Arieff 15). The idea of industrial housing still did not catch on in American society until the great depression when economists saw the housing industry as a possible catalyst to jump start the lagging economy. The housing industry looked to the automobile industry at this time to develop factory processes for construction. Archibald MacLeish declared in a 1932 issue of Fortune magazine that "It is now past argument that the low-cost house of the future will be manufactured in whole, or in parts, in central factories, and assembled on the site. In other words, it will be produced the same way as the automobile."

The industry was embracing new building materials like aluminum, enamel, or steel, along with new methods of prefabrication introduced in the same decade to instead of the conventional plaster, lath, and brick homes that were typical in the 1930s. Over the next decade numerous industrial housing schemes were developed by influential architects such as Buckminster Fuller’s Dymaxion House-1927 (fig. 01), George Fred Keck’s House of Tomorrow-1933 (fig. 02), Richard Neutra’s Lovell Health House-1932 (fig. 03), and Frank Lloyd Wright Usonian House-1938 (fig. 04). The list of architects, building companies, and commercial companies who experimented and built prototype homes is endless.

The question is why did these well built modern homes not catch on in our society and instead the we continue to produce banal, cheap, and inefficient homes that infect our society?
RESEARCH: new building technologies

In the realm of prefabrication, the United states is decades behind. The innovative, modern pre-fab homes that are being built are in places like Japan, Sweden, and the Netherlands, where good design is onmin-present. The US has a factory produced home industry, but the industry is driven by conventional housing design, conventional construction technologies, and building in a way that produces large profits with little concern for the users. The time is here to re-evaluate and update the basic design and construction methods that have constrained the building industry throughout history. The automobile, shipbuilding, and aerospace industries have learned how to create building methodologies that offer users flexibility, design choice, and affordability. This offers the industry a more efficient and cost effective way to produce and sell goods. The success in these industries lies in the complete integration of design with the craft of assembly supported by the materials scientist, the product engineer, and the process engineer.

Technological advances that allow for mass customization point the way toward a new paradigm. The building type that stands poised to provide the majority of structures built in the next century has to evolve to address the needs of the individuals who will live in them. Developing material sciences, building processes, factory processes, financial institutions, and societal changes are poised to attain this goal. The craft of building, the building machine, and the architect as master builder is working its way back into the building and design industry and will transform the living environments of today and in the future.

“It can almost be taken for granted that when good prefabricated houses become a fact their architectural style will be different from the quaint English cottages and Cape Cod Colonials that are the present favorites of the speculative builders. The idea that we should take new and better building materials and mould them into the lines and textures of old materials possessing any number of shortcomings is abhorrent.”

Raymond Parsons
RESEARCH: precedent studies

MoHo Housing_ShedKm Architects_Manchester, England_2003

This project was recently completed in Manchester, England. The project utilizes the growing technologies in off-site factory produced units. The units are built entirely off-site in a series of components that are 'plugged' into place on the site. The 'kit' includes the main unit space [living room, kitchen, bathroom, and bedroom] and then exterior balconies, entrance pods, and dining nooks are added on at the site. The main unit is shipped completely built and insulated to the site and plugged into a main superstructure that houses all the infrastructure for the complex. The units are fairly small and the architect envisioned the building to appeal to young professionals by providing well designed apartments near downtown for an affordable price.
FlatPak Home_Chris Lazors_Minneapolis, Minnesota_2004

This project is a single family home that uses new building technologies that are poised to revolutionize the prefab industry. The goal of Chris Lazors with the FlatPak system is to bring better space to more people. The FlatPak system is essentially a menu of components for living from walls to cabinets to bathrooms to the kitchen built ins. FlatPak is a system of pre fabricated components designed to yield unique solutions to the user's unique needs and unique site. The system is essentially assembled together with nuts and bolts and can be disassembled with the same ease as the original construction. This notion could be adapted in mass housing to add or subtract spaces that individuals can personalize and give their particular dwelling an identity that is true to their lifestyle.
RESEARCH: precedent studies

SpaceBox_Mart de Jong + De Vijf_Rotterdam, Netherlands_2004

This project begins to look at how personal identity, self expression, and affordability can be achieved using a prefab approach to mass housing. The Spacebox is equipped to function as a compact studio residence, complete with kitchen, shower, and toilet. The unit comes equipped with a boiler, mechanical ventilation, and electrical heating. The project utilizes high-grade light weight composites that are used in the shipbuilding and aircraft manufacturing industry. The units are seen as an object that is personalized through form and color that is more or less chosen from a large data base of varieties. These housing blocks are sprouting up all over Europe and the technologies are poised to enter the American realm soon.
The LaCan Project_David Baker + Partners_Chicago, Illinois_2005

This project is a mass housing scheme developed by David Baker for the city of Chicago. This project focuses on individualization, change, and mobility. Baker offers an alternative to the generational segregation of much of American housing. The 'podules' are ten by ten by ten modules that were developed out of a growing need to accommodate for flexible, adaptable, and multiple lifestyles. The podules come in three basic varieties: K-10 [kitchen], wet-10 [bath], and zero-10 [adaptable, universal space]. The podules can be combined in different configurations: horizontally to form a ranch-house, placed atop one another to form a townhouse, or stacked in a 'mainframe' steel superstructure to form a tall tower. The LaCan project "has been designed with contemporary Americans in mind. Not only is it built to move-instead from moving to a new house with each lifestyle change, you just take it with you-"it can expand to accommodate growing families, or contract for empty nesters."
EXPLORATION 1: west 8 housing_indianapolis, indiana: fall semester design project
This project is in Indianapolis, Indiana and is a mixed use housing project. This area of downtown is spattered with mixed-use buildings consisting of bars, restaurants, small stores, commercial rental space, and a growing apartment market. Major landmarks around the site are the RCA Dome, Union Station, and Conseco Field House. The site provides many opportunities to explore housing in an urban fabric, responses to context, and experiments of interaction between housing users and the city.

This project explores ideas of creating an overall living environment with social interactions between users and the urban context and between user and user living in the building. Various sections of the superstructure are removed along the circulation to create these nodes of interaction and become outdoor gardens with views of the city. New building technologies were explored to create adaptable units that meet and change to user needs. The basic living unit is constructed entirely off-site and plugged into a superstructure that houses the infrastructure. The users can purchase, with need or want, an additional ‘box’ that can be fully customized to express the individual’s style.
EXPLORATION 1: west 8 housing_indianapolis, indiana: fall semester design project

Throughout the community are sky gardens that occur around the circulation corridors. The gardens activate the corridors and create social interaction nodes for the users. There are intermittent paths that go from one sky garden to the next, creating a secondary means of circulation within the community. There is one main sky garden (pictured below) that creates a space for the community to interact with the urban environment. The circulation from the lower public levels comes up into this space, blurring the boundary between the public and private. This garden space has the potential to change just as the apartment units can. The level of the garden is panelized and the panels can be interchanged depending on season, activities, or community needs.
Unit Structure

The backbone of the unit consists of a vierendeel truss system that will be filled with insulated panels. As compared to traditional factory sandwich construction, this system eliminates steel stud framing and consumes less steel overall. Using the truss system also eliminates the need for supporting interior columns.

Unit Panel In fill

The vierendeel truss system is then filled with insulated panels on three sides and the third side is left open for user adaptation. The panel system is then sheathed with plywood and metal panels. Except for the south facade, the entire unit is weatherproofed before it leaves the factory.

Unit Superstructure

The unit is completely fabricated off-site including the major infrastructural systems including wet and mechanical spaces ready to be plugged into the awaiting superstructure that is constructed in modules on the site. There is one utility wall that houses all mechanical, plumbing, and electric hook ups that run to a larger vertical feed.

Unit Adaptations

The 'box' is an additional space that users can, per need or desire, design and individualize. The 'box' is essentially a kit of parts that users can design to meet their lifestyles. The space can be an extension of an interior, outdoor space, or an entirely new space. The 'box' can be enclosed, partially open, or completely open to the elements.
EXPLORATION 1: west 8 housing, indianapolis, indiana: fall semester design project

The blurring of the boundaries between the public and private is becoming more essential in urban buildings, especially urban housing, in our society. A building should provide the private escape for users, but contain instances of interaction with the urban context so the building integrates and communicates with the city. The lower levels of the building contain an internet cafe, public art gallery with classrooms, large restaurant and bar, and a sky garden. These functions promote interaction and activity. The public realm of the building becomes a node of activity and the transition zone between the urban and private realms.
glass

synthetic composites

wood slat sheathing

metal panel sheathing

future material sciences

THE 'BOX'
THESIS PROJECT: the site_chicago, illinois

Transitions

The project site is located just to the northwest of downtown Chicago. The site is located on the corner of West Chesnut and North Orleans Street. The direct context is a slowly reviving area of new retail, commercial, apartments, and off to the west is the infamous housing project of Cabrini Green. The site exemplifies the term ‘the other side of the tracks’ because the elevated train divides two characteristically different areas of Chicago; downtown and deteriorating mass housing. The site provides many opportunities to continue the revitalization of this area and provide a housing scheme that could be a catalyst for a mixed socioeconomic neighborhood.
The site is a transition zone in character, culture, and lifestyle and offers very interesting design cues because of this. The revitalization of this area is slowly occurring and art districts and the economy from downtown are coming into the area, so the site, located beside the elevated train, is a perfect site to explore a new type of housing scheme. The site also offers some challenges dealing with environmental issues, noise pollution from the elevated train, and security and visual circumstances from Cabrini Green. The immediate context contains a car wash [1], art gallery/apartments [2], small shops/apartments, Indian restaurant [3], taxi cab hub [4], apartment buildings [5,6], abandoned factories [7,8], a culinary school [9], and Chicago’s famous elevated train or more commonly know as the ‘L’ [10].
Housing Failure

Cabrini Green is one of Chicago’s most infamous low-income housing projects that has failed in all aspects of what housing should provide. The developments shattered the modernist credo that good design could effect the good society, but were the towers good design? Cabrini Green began has 55 barrack-like small-scaled row houses, but to save more money the 15-high rises seen today were constructed. They were literally the poor man’s Mies, bereft of both the expensive materials and the uplifting spirit the master brought to the structurally expressive 860 and 880 North Lake Shore Drive apartment buildings (Kamin 84). These 15 towers and 15 more were constructed to become what is today the ‘reds’ and ‘whites’ of Cabrini Green. Overall there are 65 to 144 units per high-rise, and at one time, was a good place to live with enforced rules and dedicated maintenance.

The downfall of the project occurred just as across America in other public housing projects; from federal admission rules that pushed out the working poor, to lack of tenant screening and maintenance, to a rise in drug use and a loss of good-paying, industrial jobs. The tower-in-the park model soon became the tower-in-the parking lot and had a number of other fundamental problems. Its lack of defensible space, for example, enabled ground-floor lobbies to be turned into drug supermarkets (Kamin 87). The ‘streets in the sky’ became fenced in with chain-link, which reinforced the idea of the housing high-rises as being social prisons. There was no integration with the urban context, little space designated for interaction of users, and no room for users to grow or express themselves; all leading to a variable lack of pride and concern for the living environment.

The superblock high-rises are now being demolished and there are plans and charrettes for a new neighborhood in this area. The ideas revolve around New Urbanist principles that focus on low-scale communities that are integrated with the urban fabric and foster growth and self-worth for its users. Architects, planners, and builders are all giving ideas to new housing schemes, and the site offers for an array of opportunities to create living environments that truly give back to the city and can improve the lifestyle of the poor.
05 THESIS PROJECT: design solution

Conceptual Study_01

The initial form and design derives from the idea of this site being a transition between downtown and the low-income housing blocks of Cabrini Green. The building is situated on both lots of the site. Massing consists of a large mass that runs parallel with the L to provide a buffer from the noise of the train and to be a transitional and permeable mass. From this ‘backbone’ comes three finger like masses that reach to the residential neighborhood to create two large courtyards. The courtyards are surrounded by a single-loaded horizontal circulation and creates a space for users to interact with one another. Throughout the mass of the building there are secondary interaction nodes that occur to provide meeting places with views of the context. Underlying the form of the building is the idea of a main superstructure that units can be plugged into, so the vertical circulation also serves as the main utility shafts that feed the units. The units come to the site in varying sizes and shapes, so the building takes on an interesting character and begins to have a language with the diverse context of Chicago.
Conceptual Study_02

This solution also utilizes both lots and crosses over west chestnut street. This scheme deals with a greater density of the apartment units with a double loaded corridor. The interior gardens become a private space for the units facing towards the interior instead of a large public gathering space. There are still community interaction voids that occur along the circulation and become more celebrated as important spaces for social interaction. The units in this scheme come to the site as a homogenous mass and then the users are allowed to pick the facade materials and purchase expansion spaces that could be an outdoor space, extension of an interior space, or an entirely different space.
Formal Design

After careful consideration about the project goals of creating a healthy and better living environment, the corridor returned to a single-loaded corridor and the building only occupied the northern most block to allow optimum sunlight to enter into the community courtyard. To ensure maximum sunlight, the two southern most masses of the community are lower to allow light to penetrate the space.

The lower levels of the complex take on programs that are beneficial to the users and give back to this revitalizing area of Chicago. The ground level contains a restaurant/bar area that has the potential to open up onto the sidewalk to engage the public realm and create activity along the streetfront. The other half of the ground level is a all-purpose goods store that would contain a small grocery, pharmacy, and general good aisles. The ground floor is the location of the residential towers that all have private and secure entrance lobby with a security guard, call box, and mail boxes.

Along the major circulation zones [horizontal and vertical] are community voids where users can interact with other members of the building and with the urban context. These voids are activated by the movement of people in the building. All these voids contain access to the third level that contains a gym, laundry services, day care services, and building administrative services.
05 THESIS PROJECT: design solution

01_Ground Level

The lower levels of the complex take on programs that are beneficial to the users and give back to this revitilizing area of Chicago. The ground level contains a restaurant/bar area that has the potential to open up onto the sidewalk to engage the public realm and create activity along the streetfront. The other half of the ground level is a all-purpose goods store that would contain a small grocery, pharmacy, and general good aisles. The ground floor contains the location of the residential towers that all have private and secure entrance lobbies with a security guard, call box, and mail boxes.

02_Second Level

The second level has the upper-level of the restaurant. The restaurant becomes a bar at night to bring healthy activity to the building at night. The rest of the second level contains the double height spaces of the all goods store and storage space.
03. Third Level

The third level contains amenities for the private users of the building. The spaces on this level are a wellness center with a gym, laundry services, administrative services [leasing offices, construction consultants, and design consultants], and an outdoor space for community interaction.

04. Residential Levels

The residential units surround a single-loaded corridor that opens up to a large green space. The corridor space serves as circulation, utility transportation, space for entrance pods, and circulation to interaction voids.
05  THESIS PROJECT: design solution
As previously stated, one main driving force to the failure of public housing projects such as Cabrini Green and the Robert Taylor Homes is the lack of social interaction and the feeling of neglect from our society.

This building takes on a language of interaction; interaction between users, interaction between the building and the city, interaction of building and design communities, and the interaction between different socioeconomic groups. The process of social interaction helps develop meaningful relationships and gives users a sense of self-worth.

Along the three main vertical circulation cores are ‘communal voids’ that users can utilize to interact with other individuals living in the building. The ‘communal voids’ become nodes of activity from the active vertical circulation, horizontal circulation, and programatic spaces that are in vacinity with the voids. These spaces are characterized with trees, planters, and meeting spaces in the summer months and can be covered with wood panels in the winter months. Furthermore, these spaces offer views of the great city of Chicago.
The basic unit is fabricated off-site and takes on the dimensions that are approved for shipping: 14' x 50'. The unit is constructed with a steel truss system and then enclosed with a wood-finished panel system. The utilities run under the floor and above the ceiling and hook up to a small boiler that plugs into the utilities of the superstructure. The spaces inside are divided up into 10' modules with a 10' x 14' bedroom, 20' x 14' wetcore/kitchen space, and a 20' x 14' living space. The unit has an entry pod that contains a storage closet and mudroom space. From the initial unit is an outdoor space that is finished with wood panels and enclosed initially with a railing. Folding panels for privacy, light screening, or personal display can be purchased in 10' modules that are installed into an existing track. The panel material is chosen by the user and operated by the user. The next level of adaptation is the purchase of a 'box'. The 'box' can be an expansion of an interior space, an expansion of the outdoor space, or an enclosed glass garden. Users design the 'box' using a series of finishes and window sizes. The attached railings, panels, and 'box' are installed via a crane that is permanently apart of the building. This allows for minimal interruption during construction.
REFLECTION

Throughout the course of the last calender year I have been emersed in the study of prefabricated architecture and the developing technologies that are changing the housing typology this very day. One of the most difficult things about this project was narrowing my focus to what I wanted to explore. The world of prefab has many roads to take from prefabricated parts, prefabricated wholes, shipping container adaptation, etc. All along however, I was most interested in how a mass produced housing unit could be adapted and changed to meet the user’s needs. That is who the project is about anyway; the individual. The backbone to the project is that the user takes control of their environment and the architect puts the ego behind and lets the natural process of change and adaptation occur: creating a new convention for mass housing that responds to the diversity of individuals and to the diversity of a city like Chicago.

Looking at the design, I feel that the project was a success. A system was set up that could be adapted at a public and private level. The system could essentially be adapted to any site in any city. This offers immense opportunities for this building to be a catalyst for housing design all over America’s metropolitan communities. This offers a priceless opportunity to keep populations in the city by providing a place to expand, grow, and live without retreating to our city’s peripheral. Furthermore, given the change in mobility and our more and more nomadic lifestyles, this system has the potential to create a situation where users can move their entire home from one urban environment to another. The possibilities are endless.

Given more time and a more adept study into the technicalities of the idea, the project could have reached a ‘realistic’ level, which would have improved the success of the project. Beyond ‘realistic’ I truly feel that the idea behind a project, especially in design studio, is most powerful. An idea that challenges current conventions, offers improvement of conventional building environments, and looks to the user as a driving design force is very powerful and I feel I have achieved this.

Through this thesis process I have realized that the power of architecture is what inspires me. The power to inspire us, to move us, to improve our daily lifestyles, and the alter our society's built environment today and for future generations can not be touched by other professions.
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