A revenue generating node which combines commerce and a support system to alleviate homelessness in Chicago.
Homelessness in Chicago:

There are over 76,000 homeless citizens within the boundaries of Chicago, yet the city spends very little to remedy the situation, when compared to other cities. Of those 76,000 people 52% are homeless families, usually consisting of a mother and child.

Currently there are about 11,000 shelter beds available. Of the people who have sought shelter, over 22% were turned away at least once in the last year.

How can we alleviate the shelter deficit without further straining the city’s budget?

Homeless Funding (2005):

<table>
<thead>
<tr>
<th>City</th>
<th>Cost per Capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Francisco</td>
<td>$102.78</td>
</tr>
<tr>
<td>New York City</td>
<td>$37.30</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>$10.93</td>
</tr>
<tr>
<td>Chicago</td>
<td>$2.96</td>
</tr>
</tbody>
</table>

Self Sufficiency:

The current shelter deficit can begin to be alleviated by creating a network of revenue generating and non-revenue generating shelter and support nodes which can be inserted within the existing infrastructure.

Revenue generating nodes are located in areas with high commerce and access to public transportation. These nodes provide on-site vocational training, shelter, support and adjacencies to jobs outside the node.

Non-revenue generating nodes are located in areas where the demand is greatest, keeping residents close to their families and to their established personal life.

A well balanced network of the two nodal types has the opportunity to provide a substantial amount of housing and support while providing much needed vocational training - allowing residents to acquire jobs which can truly support an entire family.

A Revenue Generating Node:

- Shelter
- Wrap around support
- Community interaction
- Ground equal to
- To building operations
- To other nodes
- To support + shelter programs

Threshold: Community interaction equal ground.
Homelessness in Chicago:

76,656 Number of homeless in Chicago.  
(Chicago Coalition for the Homeless, 2006)

6,004 permanent housing units
2,110 interim housing
2,492 emergency shelter beds
1,039 transitional shelter

11,645 Number of shelter beds in Chicago.

22% Number of shelter residents who were turned away at least once in 2006.

Of the 73,656 homeless in Chicago:

52% = 26,413 homeless children
12,007 homeless adults in families

21,089 - calls received from domestic violence victims; 43% sought shelter

43% = 32,105 homeless single adults
10% - homeless single adults are chronically homeless
25% - homeless single adults suffer from severe mental illness
26% - homeless single adults are struggling with substance abuse

52% = 7,243 homeless unaccompanied youths
34% - homeless youths served by a shelter (2004)
60% - homeless youths reported being victimized or abused (2007)
15.7 - average age homeless youth becomes homeless for the first time (2007)

Unaccompanied homeless youths are between the ages of 13 and 21, and have run away usually due to domestic violence, sexual assault, pregnancy, conflict over sexual orientation, death or disability of parent, or discharged from the foster system. Currently in the system, there are very few beds specifically for homeless minors.

Homeless families often are made up of a mother and one or more children. Homelessness for women is incredibly dangerous - an experience fraught with sexual and physical abuse. The city only has 112 shelter beds specifically for domestically abused women - because of this these women often have to make the decision to go back to a violent home or live on an equally violent street.

Homeless single adults account for almost half of the homeless population and are mostly transitional homeless. The top stressors reported, leading to homelessness are: inability to pay rent, job loss, drug or alcohol problem, and family disagreement.
Homelessness became a recognizable city problem in the 1980’s. Throughout the last thirty years organizations have been able to fully grasp the cause, effects, and solutions to homelessness. Currently the agreed upon method to help someone off the streets and back to stability is to immediately provide them with a permanent affordable residence, and work. Once these two main components of a person's life are in place, they can then deal with any other problems they might be struggling with. This solution is called “Housing First”, and is template for the city if Chicago’s “10 year plan to end homelessness”.

The city’s “10 year plan to end homelessness” was signed by Mayor Daley in 2003. Seven years later the number of homeless in Chicago is around 74,000 people. The 10 year plan proposed reducing the number of temporary and transitional shelters, and to provide an adequate quantity of affordable permanent housing. Unfortunately, while many of the temporary and transitional shelters are being eradicated, the promised number of permanent housing which was to be provided is seriously short.

The plan's potential failure is based upon the numbers the city used to finance and secure financing. The budget for the plan is bases upon the latest point-in-time survey which puts the number of homeless in Chicago around 6,000. However, this number does not take into account all of the people that were not on visibly on the street or in a shelter at the time of the survey. This number also does not take into count the large number of residents that are on the brink of homelessness and will require immediate financial relief.

Chicago Coalition for the Homeless, a not for profit, independent organization, is requesting that the city halts closures of transitional and emergency shelters until the city invests $50 million in permanents housing, $3 million in prevention assistance, $2 million in housing linked supportive services, and until there is a 25% shelter vacancy for at least 6 months.
Housing First:

The direct costs of homelessness include tax payer dollars for the housing, social support system, food, jails, police work, medical care and clean up after the homeless. This is compounded with the loss of revenue, access to green space, and safety in neighborhoods where the homeless congregate.

For those who are homeless, the cost of being homeless often means a stressful survival in a cold world where everyday activities in a home such as using the rest room and drinking a cocktail are illegal in public and must be done with shame and disgrace. In addition physical and mental health, family ties, and employment opportunities quickly disintegrate. For a child the toll of being homeless is compounded, and often permanent. Malnutrition and lack of sleep effect physical growth, while the lack of a stable or comfortable place to learn and play effects mental development.

The most economically and socially beneficial way to alleviate homelessness is to cut it off at the source and prevent the loss of a home. This means spending more money, resources, and support up front. Prevention will almost always be more cost effective than allowing someone to cycle through the homelessness support system of emergency shelters, assistance, and services.

“Housing First” - Chicago case study:

Chicago’s Street-to-Home Initiative, part of the “10 year plan to end homelessness” has successfully provided permanent housing to 154 homeless individuals. With continuous wrap around support 80% of the original 154 residents have remained stably housed after two years (2007).

By immediately stabilizing factors such as housing and employment the support STHI’s support system is able to assist residents with physical and mental health, legal issues and public benefits.

Also, the immediate housing of these individuals saved over $460,000 in tax dollars alone by minimizing emergency room visits, overnight hospital stays, and incarcerations.

Chicago’s “Street-to-Home” initiative for 154 homeless individuals:

<table>
<thead>
<tr>
<th>pre-housing costs</th>
<th>supportive housing costs</th>
<th>post-housing costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1,380,906</td>
<td>$47,498</td>
<td>$1,429,404</td>
</tr>
<tr>
<td>$307,255</td>
<td>$660,000</td>
<td>$967,255</td>
</tr>
</tbody>
</table>

- 28% have increased their incomes
- emergency room visits decreased by 54%
- inpatient hospitalizations decreased by 52%
- arrests decreased by 78%
- days spent incarcerated decreased by 93%

= public service cost savings of:

- $75,663 in inpatient hospitalizations
- $19,890 in mental health hospitalizations
- $151,020 in jail costs

$100 = Total amount of money it costs to keep a family in an emergency shelter per night, versus $23 a day to rent a subsidized NYC apartment at $700 a month. (2001)
Becoming Homeless:

Apart from issues of domestic violence, homeless families are often produced from a cycle of little education, low paying jobs, and unaffordable housing. Many families struggle just to make ends meet, and an unexpected emergency often times is what pushes these families over the brink.

The least expensive way for to lessen family homelessness is to provide preventative funding and counseling.

**Mapping Family Homelessness (right):**

The wrong combination of household income, cost of rent, education level, and household size can quickly devastate a family. These factors are mapped out per Chicago zip codes to illustrate the where homeless families might emerge. These locations need accessibility to shelter and support options.

The mapping project assigns a value system to the ranges of each category, allowing the system to weight factors which have a stronger impact. A value of 5 indicates a little chance producing a homeless family, while a total value of 90 indicates an extremely high chance of producing a homeless family.

---

<table>
<thead>
<tr>
<th>Education</th>
<th>Employment</th>
<th>Housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>594,000</td>
<td>71.5%</td>
<td>$19.03</td>
</tr>
</tbody>
</table>

Number of people between the ages of 25 - 54 in Illinois who do not have a high school diploma or GED.

Percentage of jobs offering family sustaining wages in Illinois that requires at least an associates degree.

Hourly rate needed in order to spend only 30% of your income on shelter - versus the $8.25 minimum wage.

---

**Zip Code Demographic Ranges:**

- **Percentage of household income spent on rent.**
  - 3%: 1, 3, 5, 7, 9
  - 6%: 11, 13, 15
  - 9%: 17, 19
  - 12%: 21

- **Percentage of households below the poverty level.**
  - 0%: 1, 3, 5, 7, 9, 11
  - 6%: 13
  - 10%: 15
  - 14%: 17
  - 18%: 19

- **Average household size.**
  - 1.5: 1
  - 2.1: 3
  - 2.7: 5
  - 3.3: 7

- **Percentage of residents over the age of 25 without a high school diploma or GED.**
  - 0%: 1, 3, 5, 7, 9
  - 11%: 11
  - 18%: 13
  - 25%: 15
  - 32%: 17

- **Percentage of residents with a bachelor’s degree or higher.**
  - 0%: 1, 3, 5, 7
  - 64%: 9
  - 47%: 11
  - 31%: 13
  - 14%: 15

**Total Value: 90 = Extremely high possibility of producing homeless families. 5 = Extremely low possibility of producing homeless families.**
### Homeless Demographics:

<table>
<thead>
<tr>
<th>Percentage of household income spent on rent.</th>
<th>Percentage of household income below the poverty level.</th>
<th>Percentage of households with a bachelor's degree or higher.</th>
<th>Possibility of producing homeless families:</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>2%</td>
</tr>
<tr>
<td>15%</td>
<td>15%</td>
<td>15%</td>
<td>20%</td>
</tr>
<tr>
<td>20%</td>
<td>20%</td>
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<td>25%</td>
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<td>35%</td>
<td>60%</td>
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<tr>
<td>40%</td>
<td>40%</td>
<td>40%</td>
<td>70%</td>
</tr>
<tr>
<td>45%</td>
<td>45%</td>
<td>45%</td>
<td>80%</td>
</tr>
<tr>
<td>50%</td>
<td>50%</td>
<td>50%</td>
<td>90%</td>
</tr>
</tbody>
</table>

- **Average household income:** 
- **Percentage of households below the poverty level:**
- **Average household size:**
- **Percentage, age of 25 w/o a high school diploma or GED:**
- **Percentage with a bachelor's degree or higher:**
Homeless Demographics:

- 5-25: Extremely low possibility of producing homeless families.
- 26-45: Medium possibility of producing homeless families.
- 45-65: High possibility of producing homeless families.
- 66-90: Extremely high possibility of producing homeless families.

Existing Shelter Network:

- Existing transitional family housing
- Permanent family housing
**Stakeholders:**

- **Not for profit organization**
- **Government funding**
- **Commercial + vocational training**
- **Revenue generating programs**
- **Revenue nodes:**
  - Most need = $ commerce + vocational training
- **Shelter nodes:**
  - Less need = $ government funding

**Our goal is to provide the best possible shelter, services, and community outreach programs by creating a financially self-sufficient system.**

- Maximize quality of livable training and employment space while also increasing the best quality shelter and support facilities.
- Minimize utility costs and building maintenance costs.

**We want to ensure that our investment will be turned around within the agreed amount of time.**

- Ensure that the leasable space and amenities within the building are as lucrative as possible to potential tenants.

**We would like to be able to provide the very best care, support, and safety for those who enter the facility.**

- Maximize visual and audio connections and access to both public and private spaces, as well as street frontage and other outdoor space.

**I would like to have a place to call “home”, if only for a night, and the opportunity to get back on my feet.**

- Minimize the stress and fear of living on the street with the privacy, comfort, and safety of a home.
- Revenue generating programs which allow for job training and employment.
- Access to services and shelter for those in need at all times.
- Restore self-determination, and pride by enabling community outreach and common ground.

**We want our neighborhood to remain safe, inviting, and economically viable.**

- Layered and transparent entry sequences keep lines within the facility property and allow for visual safety.
- Energize the street with ground floor shops and employment opportunities.
- Create programs in which the neighborhood and homeless clients can find a common ground.

**We are looking to lease a space that will ensure business profitability, and provide a safe and comfortable environment to all of our employees and clients.**

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Generic Node Program:

housing

amenities

<table>
<thead>
<tr>
<th>Description</th>
<th>Square Feet</th>
<th>Cost/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>main living space</td>
<td>1200 sf</td>
<td>1200 sf</td>
</tr>
<tr>
<td>bedrooms</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>full bath</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>half bath</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>kitchen</td>
<td>120 sf</td>
<td>120 sf</td>
</tr>
<tr>
<td>living room</td>
<td>250 sf</td>
<td>250 sf</td>
</tr>
<tr>
<td>laundry room</td>
<td>65 sf</td>
<td>65 sf</td>
</tr>
<tr>
<td>closet</td>
<td>300 sf</td>
<td>300 sf</td>
</tr>
<tr>
<td>total amenities</td>
<td>17,360 sf</td>
<td>17,360 sf</td>
</tr>
</tbody>
</table>

training / profit

<table>
<thead>
<tr>
<th>Description</th>
<th>Square Feet</th>
<th>Cost/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>adult work spaces</td>
<td>300 sf</td>
<td>300 sf</td>
</tr>
<tr>
<td>youth work spaces</td>
<td>300 sf</td>
<td>300 sf</td>
</tr>
<tr>
<td>computer room</td>
<td>300 sf</td>
<td>300 sf</td>
</tr>
<tr>
<td>lounge / communal space</td>
<td>300 sf</td>
<td>300 sf</td>
</tr>
<tr>
<td>total amenities</td>
<td>17,360 sf</td>
<td>17,360 sf</td>
</tr>
</tbody>
</table>

program total: 48,350 SF

community

Stress Reduction, Safety, Trust and Comfort:

The constant physical and mental stress weighing down on someone who is homeless, due to worries about food, shelter, personal safety, sleep, health, loved ones, money, and comfort is unimaginable.

The qualitative aspects of the node design should maximize stress reduction while providing a constant sense of safety, trust, and comfort to its users. This can be done by creating a multi-sensory environment which is a translation of the natural world.

Stress reduction has been shown to occur when a person under a great amount of stress views a natural scene. Roger Ulrich believes that “the roles of a natural contents and visual characteristics in this process (viewing a scene) have evolutionary underpinnings. Humans are biologically prepared to respond rapidly and positively to environmental features that signal possibilities for survival”.

Ulrich’s studies in health care prove that viewing and experience nature can have on an undeniably positive effect on a person’s mental and physical well-being. Built spaces that embodies the essence of the natural world should then too have restorative properties, which when placed throughout a person daily path can have a positive influence.

The following qualitative parameters, when working together, have the potential to create a multi-sensory environment which can begin to reduce stress, while providing a safe and comfortable living environment: motion, serendipity, freeness, prospect and refuge, and enticement.
A 320’ by 140’ (44,000 sq. ft.) city owned lot is selected as the site for the first revenue generating node within the network.

The site’s immediate adjacency to the CTA loop provides access from the neighborhoods with the most need, which are located to west and the south of Chicago’s downtown.

This location is also an area of rapidly growing commerce and will not only easily be able to support the node’s self-sufficiency requirements, but will also provide access to the area’s countless job opportunities.
Revenue Node Diagram in Site:
Revenue Node Diagram in Action:
The revenue generating node diagram is expanded from lot line to lot line in order to maximize the site's retail and vocational training potential. Residents and support functions are brought off the street level immediately, while a housing tower rises above the site taking advantage of consistent exposures while not overshadowing the rest of the program mass.

Excess program mass is cut away, maximizing each floor's access to daylighting and outdoor space.

Sculpt Mass:
A limited amount of the ground floor is cut away allowing parallel pedestrian access to second floor vocational programs.
Apply Camouflage:

The mass is wrapped with a facade designed to bring anonymity to the program and to the residents.

Extend Edges:

The edges of the facade are extended up, past the mass, creating protective parapet walls. The parapet walls are highest at locations where the users will desire feelings of enclosure, safety and anonymity.
Existing Facade Language:

- opaque in-fill
- balconies
- structural bays
- glazing in-fill
Existing Facade Language:

The developer driven facades on State Street, adjacent to the site, all have four elements in common: a grid of structural bays, opaque in-fill, glazing in-fill and balconies (often at residential programs).

The consistent use of this language provides a predictable rhythm and experience, both on the interior and exterior.

Anonymous Facade:

By layering the four facade elements into two separate planes, a system is created which can handle all of the programmatic and user needs consistently along all four exposures.

The layered facade allows for a gradation of privacy within the building while handling sun shading and residential balconies in a consistent fashion.

The use of the structural bay and typical facade elements continues the rhythm of State Street while bringing a certain degree of anonymity to the program and residents inside.
Gradation:

The juxtaposition of seemingly contradictory programs, user groups, and site variables is handled through gradation, at various scales, from program adjacencies to facade densities.

This theme throughout the building allows the residents to experience a gradual transition from the street to self-sufficiency at their pace by allowing them to navigate their own exposure to other residents, to other building users groups, and to the neighboring community.

Facade Gradation:

State Street Elevation Looking East
Unfolded Camouflage:
Section Looking East:

- Market rate apartments
- Permanent subsidized housing
- Temporary supportive housing
- Chapel
- Parking
- Gym / dining + theater
- Lobby for homeless families
- Lobby for lobby market rate apts.

Ground Floor Plan:

- Leasable Retail Space:
  (includes restaurant + day care): 29,070 sf X $30 per sf per year = $872,100

- Day Care Operations:
  75 children at a 70% occupancy = 53 children
  53 children X $35.25 per day X 260 working days = $487,745
  $487,745 - Expenses (50% of profit to cover food, rent, payroll, utilities, etc.) = $243,873

- Loading L tracks above
- State Street
- Day care - 5,330 sf (75 children)
- State Street
- Loading
- L tracks above
Second Floor Plan:

Profitable Vocational Space:
19,900 sf. X $20 per sf. per year = +$379,000

Third Floor Plan:

Leasable NPO Starter Office Space:
17,050 sf. X $20 per sf. per year = +$341,000
Fourth Floor Plan:
Wrap Around Support Space:
The wrap around support costs are factored into the transitional housing costs.

Fifth Floor Plan:
Transitional Family Shelter (Floors 5 + 6):
Each of the two transitional shelter floor can accommodate up to 13 families or about 39 residents.

39 people x 75$ per person, per day x 360 days = -$1,012,500
(This costs factors in running the wrap around support space)
A Kit of Parts:

The transitional housing floors are designed for ultimate flexibility in order to best serve the unknowns that the shelter is bound to navigate. The floor plate is gridded into 80 square foot squares with an array of 6 permanent toilet + shower rooms.

This grid allows a system of demountable partitions and modular furniture to be set up especially for each family type entering the shelter. The approach not only best serves the residents inside their rooms, but also outside their rooms, in the common corridor, by creating informal meeting and play spaces.

Sixth Floor Plan:

Transitional Family Shelter (Floors 5 + 6):
Each of the two transitional shelter floor can accommodate up to 13 families or about 39 residents.

39 people x 75$ per person, per day x 360 days = $1,012,500
(This costs factors in running the wrap around support space)
Seventh Floor Plan:

Subsidized Permanent Housing (Floors 7 -8):
16 total apartments with an average apartment size of 780 sf.
$8.25 min. wage X 40 hours X 4 weeks X 30% = 4005 per month ($51 per sf., per month)
16 apartments X $400 a month X 12 months = +$76,800

Ninth Floor Plan:

Market Rate Apartments (Floors 9 -14):
48 total apartments with an average apartment size of 660 sf.
31,750 sf. X $1.75 per sf. per month x 12 months = +$666,750
Financial Analysis:

- Market Rate Housing (Floors 9-14): 31,750 sf, $666,750
- Subsidized Permanent Housing (Floors 7 +8): 12,480 sf, $76,800
- Transitional Housing (Floors 7 +8): 9,160 sf, -2,025,000
- Wrap Around Support (Floors 3-6, serves 126 residents): 35,950 sf, $719,750
- Vocational Training (Floors 2 + 3): 35,850 sf, $719,750
- Ground Floor Retail (Floor 1): 29,070 sf, $872,100
- Day Care (floors 1): 31,750 sf, $872,100

Total Profit: $2,742,150
Support + Shelter: $2,025,000
Profit into nodal network: $717,150

M. Rate Housing: +$666,750
Perm. Housing: +$76,800
Vocational: +$719,000
Day Care Center: +$407,500
Retail: +$872,100
Appendix
Inhabitable Facade:

Inhabitable facade explores thickening the facade in order to provide the required shelter space while being able to maximize the leasable floor plate square footage.
Inhabitable Structure:

The unique opportunity for the juxtaposition of large span public spaces and small personal space encouraged the exploration of using the depth of the large spanning members as an area to house the required shelter program, again freeing up the floor plates for public support spaces and leasable, revenue generating, space.
Centrality:

Unlike the previous two explorations, both with a dispersed shelter program, centrality focuses on a vertical gradation of program monitored by a central tower of support program which is intrinsically connected to all other program. The three separate towers increases desirable north / south solar orientation.
Shell begins to define the required quantitative relationships between revenue generating and non-revenue generating programs. This model also explores safety through enclosure, and anonymity.
Los Angeles Mission

location: Los Angeles
architect: Scott MacGillivary, Virginia Tanzmann
completed: 1992

“The Los Angeles Mission treats the homeless not as an anonymous collective of people with problems that need to be overcome, but rather as individuals engaged in a process of education.” They have formalized this process of education into what they call the Urban Training Institute.

Participation in the training program takes about two years, but leaves the participants with the skills, training, potential employment, independence and confidence needed to get back on their feet. From 1992 - 2002 over two thousand people have graduated from the Urban Training Institute.

The mission it’s self is highly structured and formalized with many of the amenities a small college campus might have.

Free Park-inn

location: any urban environment
architect: Office for Unsolicited Architecture
completed: competition

Free Park-inn is an exploration in using existing space to temporarily house homeless. Spaces such as fire escapes, alleyways, sides of buildings, and roof tops are in abundance throughout the urban environment, but hardly utilized.

Free Park-inn focuses on the use of parking garages to house homeless at night when the garage is not being used.