Creating Something Old: Bringing New housing back within City Limits

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Bismarck, ND
Ty Greff

An Introduction

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This project is intended to be experienced digitally.

There should be no reason that you have to look at my boards, or a model to understand my thesis and its ideas. I merely have boards up so that if a machine is currently busy, you are able to at least get a general overview about my project.

The site itself is located in Bismarck North Dakota. It is on Main Ave at the very western edge of Bismarck near the Memorial Highway Bridge. Its main borders are Memorial Highway and Main Ave. The Site itself comprises nearly 10 acres of land in a large, nearly triangular form.

The significance of this site is of great importance to the city of Bismarck. Currently the city is working on the development of a new city bridge to connect Bismarck to Mandan. This will replace the memorial highway bridge that has been in operation since 1922 and was the final link connecting the Pacific and Atlantic Coast on Highway Ten. The site is seven and a half acres currently sits without use. It is within a couple of minutes of downtown Bismarck and the Missouri River.

Regional Building History (sustainability)

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The area is rich in cultural history. The area was first settled by the Native Americans. The housing they generally employed in the area was either temporary structure or earth lodges. Both had a series of properties that made them advantageous to the area.

- Local Materials (Buffalo skins, river and creek valley timber, sod, stone, earth)
- Passive ECS techniques (natural airflow currents, thermal mass heating)
- Walkable sites

The next group of people that settled the area were the Germans from Russia. They helped to settle the United States under the Homestead Act. These people had preferred small towns to the homestead, but were unable to bring these design elements due to the rules of the Homestead Act itself. They brought the sod house from the Steppe in Russia. This was intended to be a temporary structure until enough wealth could be built to afford the family a more "modern" house. The sod house however, held many advantages over the new stick frame houses that replaced them. The Germans from Russia brought the following sustainable contributions to the area.

- Close Knit Housing (although not introduced in North Dakota, it was brought into cities in Kansas.)
- Southern Sun Oriented Neighborhoods
- Solar Mass Walls on sod houses
- Local Materials

Main Idea

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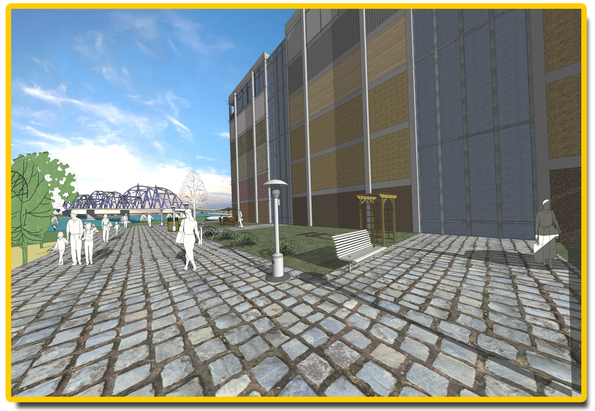
The main idea of this project is to take a critical look at purchasing housing within the current system. Furthermore, this project offers a different approach to housing then what is currently being offered. The key points are:

- Community involvement
- User input in design (new and used)
- Customization through options
- User driven site development
- Individuality within the community
- A return to integrated, meaningful community living
- Local materials
- Local labor
- Sustainable design strategies
- Database system of gathering and storing information
- A base by which to provide the fulfillment of the three interacting levels: sustainability, human, and structural



Name: Gary Franz

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Occupation: Computer Audio/Visual Specialist

Needs: Gary is a single man who owns a dog He is currently looking to find a house that will fit the various needs that he has. He has spent some time with the banks and is interested in finding something that is within his budget

What he choose:Flat

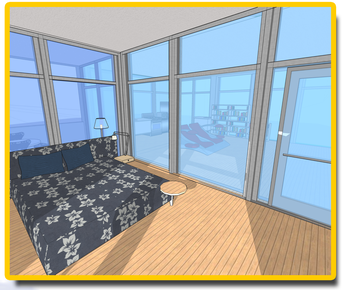
1 bedroom
1 bathroom
Shared living dining
South bedroom
North kitchen/living
North west south exposure
Private roof garden
6th Floor (or at least top)
Weightless series facade
Balcony (southwest)

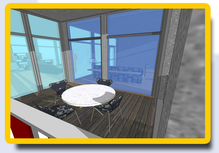
What he had to say:

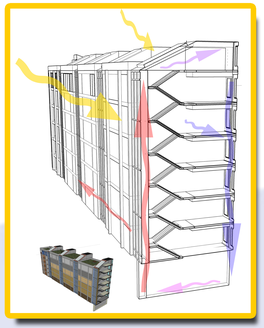
"Viewing my apartment in 2D and 3D motion renderings greatly enhanced the overall project. I was clearly able to identify any major and minor issues that needed addressing before construction would begin. Being able to answer a few simple questions about housing and then being able to actually see my house made it much simpler for me in the overall design process."

Image List

1. Site Map
2. Le Corbusier
3. View to River
4. Teepee
5. Sod House
6. Balcony View
7. Living Room
8. Exterior View
9. Gary Franz
10. Floor Plan
11. Bedroom
12. Balcony
13. Bathroom
14. Roof Garden
15. Stair Section







Rules of Development

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Rules for Construction

- Local Labor
- Local Materials
- Use of Sustainable Materials
- Recycling of Current Materials

Rules for Master Site Plan

Creation of small, medium and large outdoor spaces.

Rules for Housing Units

- Freedom of Layout
- Freedom of Choice
- Freedom for Re-occupancy
- All units must be adjacent

Rules for Blocks of Units

- All units are to be stacked against each other on a mainly east-west basis
- Flow through ventilation
- Height Restrictions
- All units must touch at least one other unit
- Lots of Stairs
- Common Underground Parking

Rules for Operation/Continued Sustainability

- Re-occupancy
- Sustainable Common Areas

Levels of Interaction

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Society

- Individual
- Family or Kin Group
- Cluster of Families and Individuals
- Neighborhood
- City
- Region

Sustainability

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- One Choice
- Units Agreed Upon Choice
- Cluster Choice
- Neighborhood Policy or Agreements
- City Ordinances
- County or State Law or Programs

Structural

- Individual Building block
- Assembly or Chosen Unit(s)
- Cluster of Housing Units
- Master Plan Site
- City Infrastructure
- County or State Infrastructure

Example of Integration (First level integration)

- The individual person wishes to be a part of this project
- The person also desires to participate in sustainable ethics
- The architect designs operable windows that also have a high R- value and save on energy while also maximizing the owner's happiness and well-being

Types of Units

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Single Floor Studios

- One unit apartments that are designed for one bedroom or one very large open space

Apartment Flats

- These units are just like modern apartments and condos. They are allowed to occupy more then one floor and more then one unit in width if desired.

Row Houses

- These units are designed to occupy at least 3 floors and have the only possibility of neighboring on either side.