

Arch 772

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May 04th, 2010

DOWNTOWN DEVELOPMENT:

A LIFESTYLE APPROACH

THESIS PRESENTATION

2010

Thesis Abstract of The Downtown Development:

My thesis provides answers to the question: how can the implementation by architects of minimal energy consumption and better material utilization in design begin to stop the wasteful ways so prevalent in our current society?

“Manifest destiny and a growing American population have created unsustainable patterns of material and energy consumption.”

In its simplest terms the background of “Manifest Destiny,” is one of expansion, extension, and growth of the United States of America.



“Spirit of the Frontier “1872,John Gast

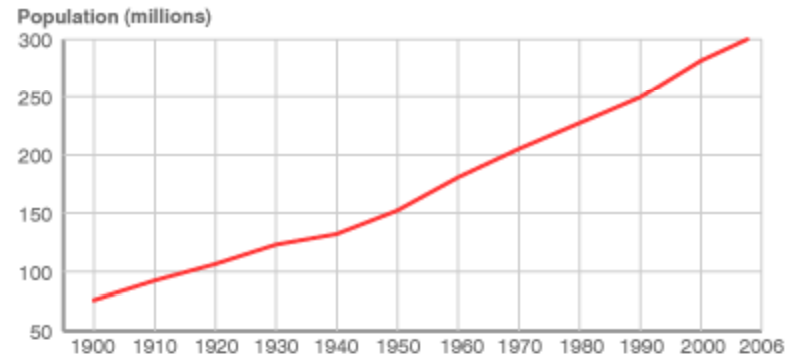
The population of America is a fluctuating and ever changing organism that has always been on the rise.

Today the population is 308,116,000 and continues to grow at a rate of .95%.

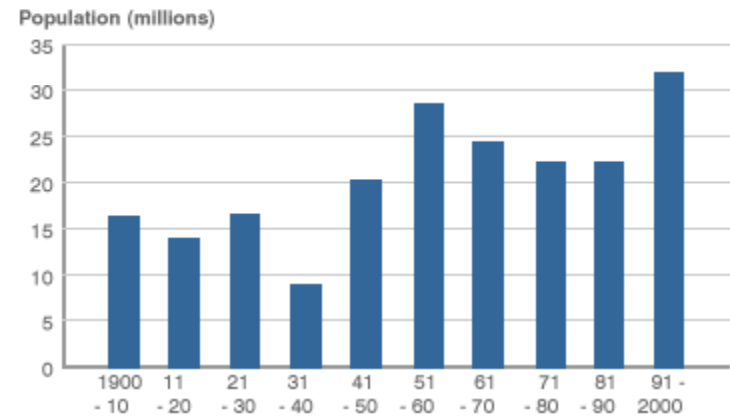
81% of the total number of Americans live and reside within the cities and suburbs of this nation.

With these staggering percentages, and the inherent idea of manifest destiny still very much apart of the American population's everyday thoughts; the focus for my project became finding solutions for the more populated centers of the United States.

US POPULATION GROWTH 1900- 2006



Decade totals



Source: US Census Bureau

Setting The Stage

America is growing at an increasing rate with each passing year. The vast amounts of land and natural resources that are getting consumed are too increasing with each passing year as the cities fall victim to the monster that is urban sprawl. The amount of resources required for this to happen are producing unsustainable patterns of consumption at an alarming rate.

Urban centers of all sizes are having to become places of revival and places of increasing population density.

The Midwest has been experiencing this revival as well as this push towards ever increasing densities through such ideas as revitalized commercial and business centers, and a push towards implementing residential areas of concentration within the downtown centers.



Fargo, North Dakota like so many other urban centers across the Midwest has fallen victim to unsustainable ways.

The downtown has been long evacuated for the ever expansive fields surrounding the city. However, through the introduction of the new mixed commercial/residential structure in downtown, the new NDSU downtown campus, and the expansion of retail and business, the city has recently started to find ways to revive the downtown.

The only area in which the city has fallen short is the development of more housing communities to allow

residents to begin to support the downtown areas of business and retail. Therefore the introduction of a mixed commercial/residential structure is sorely needed.

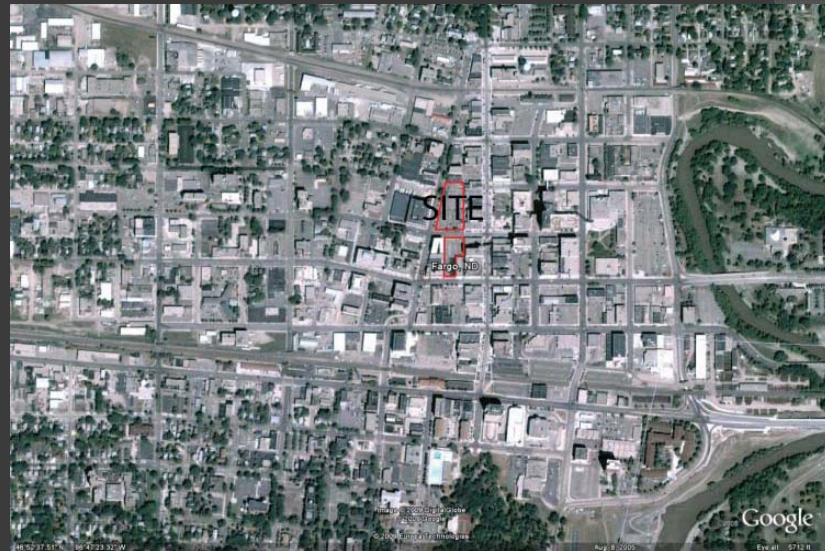


City of Fargo and the surrounding cities

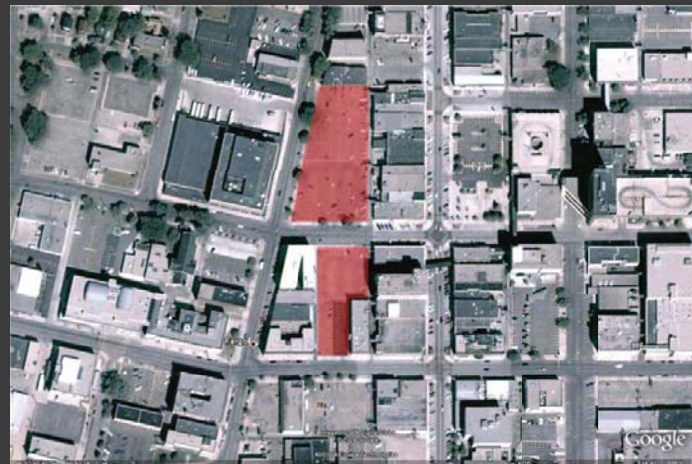
Site Location and Inventory

The Site is located at the Northwest corner of Roberts St. N. and 2nd Ave. N. Originally designed to hold approximately 270 cars; little to no vegetation existed on the site. The lot was very full during normal business days and almost completely empty at night. The only parking occurring at night was brought about by the people going down to enjoy the Broadway night life.

Located directly behind such establishment as Dempsey's local pub and Atomic Coffee there is relatively low amounts of traffic on it.



Downtown Fargo



2nd Ave. N. and Roberts Street in Downtown Fargo



Images
Looking
North



Images
Looking
East





Images
Looking
South

Images
Looking
West

Programmatic Requirements

Living Spaces:

Apartments	20%	55,000-65,000 sf
Condominiums	15%	41,250-48,750 sf
Outdoor Space	10%	27,500-32,500 sf
Recreation Space	3%	8,250-9,750 sf
Circulation	10%	27,500-32,500 sf
Residential Office	2%	5,500-6,500 sf

Commercial Space:

Retail	15%	41,250-48,750 sf
Mechanical	3%	8,250-9,750 sf
Support Space	2%	5,500-6,500 sf

Parking:

Underground Parking	15%	41,250-48,750 sf
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Atrium:

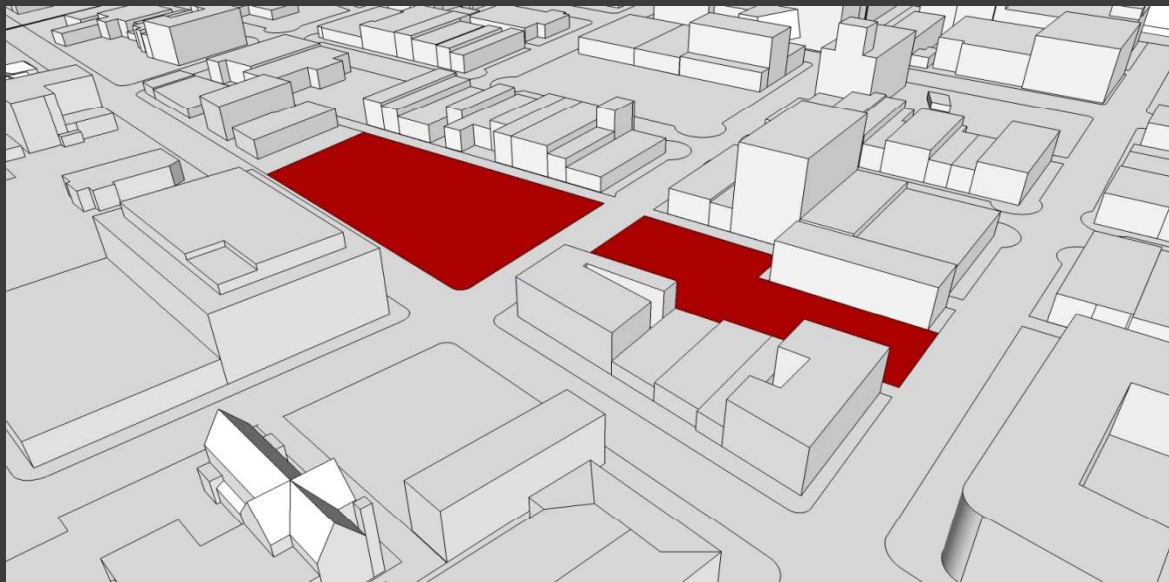
Interior Atrium	5%	13,750-16,250 sf
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Total:	100%	Total Area 275,000-325,000 sf
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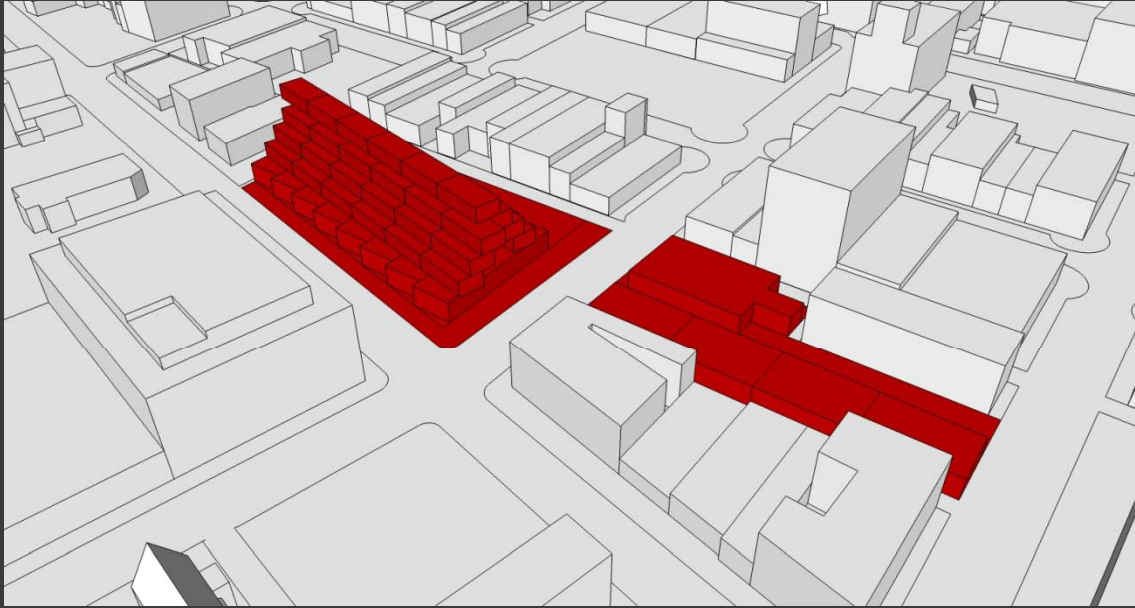
Schematic Design

When approaching the schematic design for my downtown development I really attempted to design to the square footage of the programmatic requirements listed above.

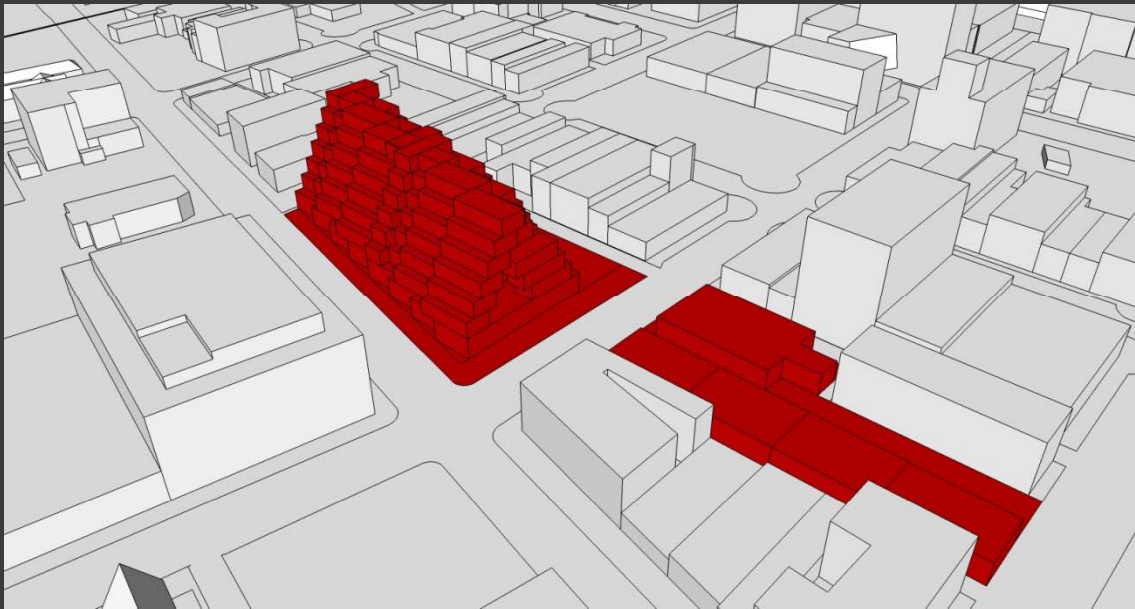
Working mainly with simple massing programs like Sketchup pro; I was able to set up spatial boxes and design different layouts and arrangements of the boxed spaces in order to reach the required square footage.



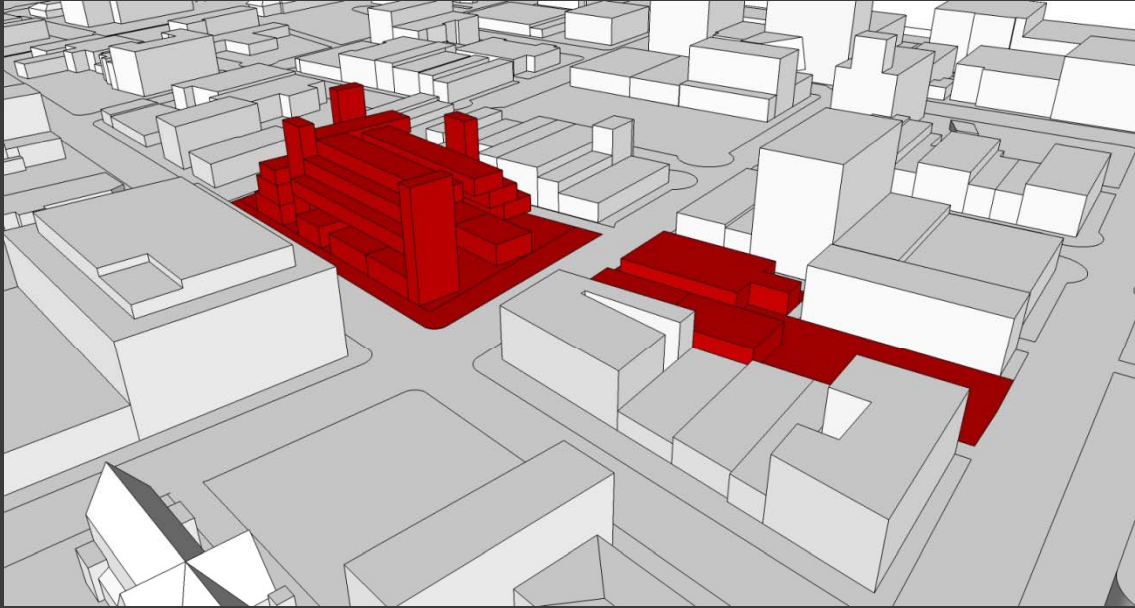
Original Sketchup pro site image with surrounding buildings.



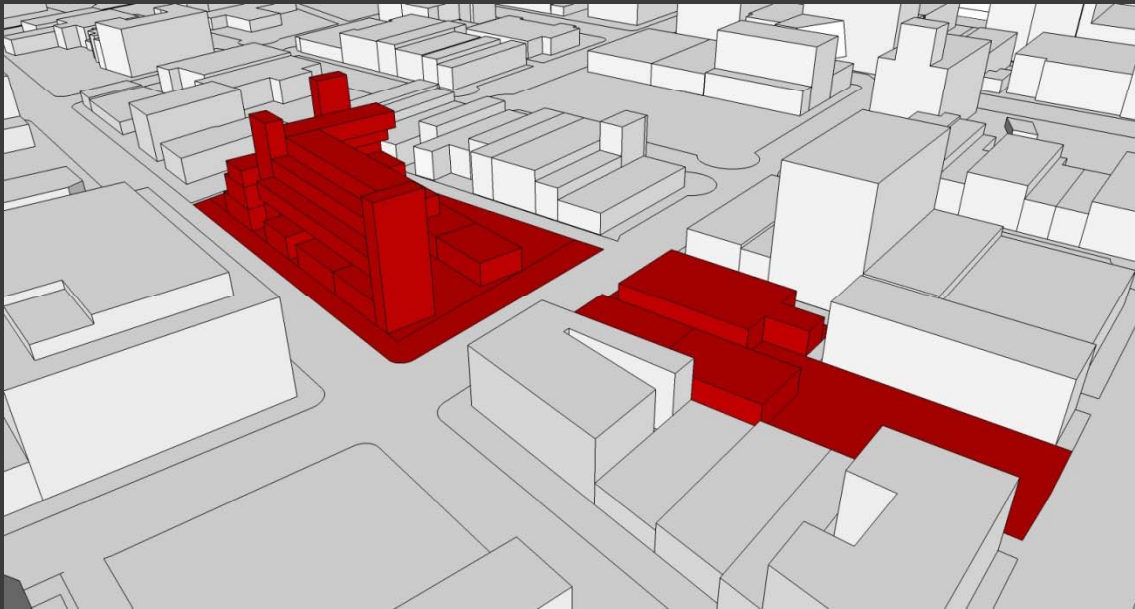
Pyramidal apartment structure



Staggered apartment structure



Pyramidal floating apartments

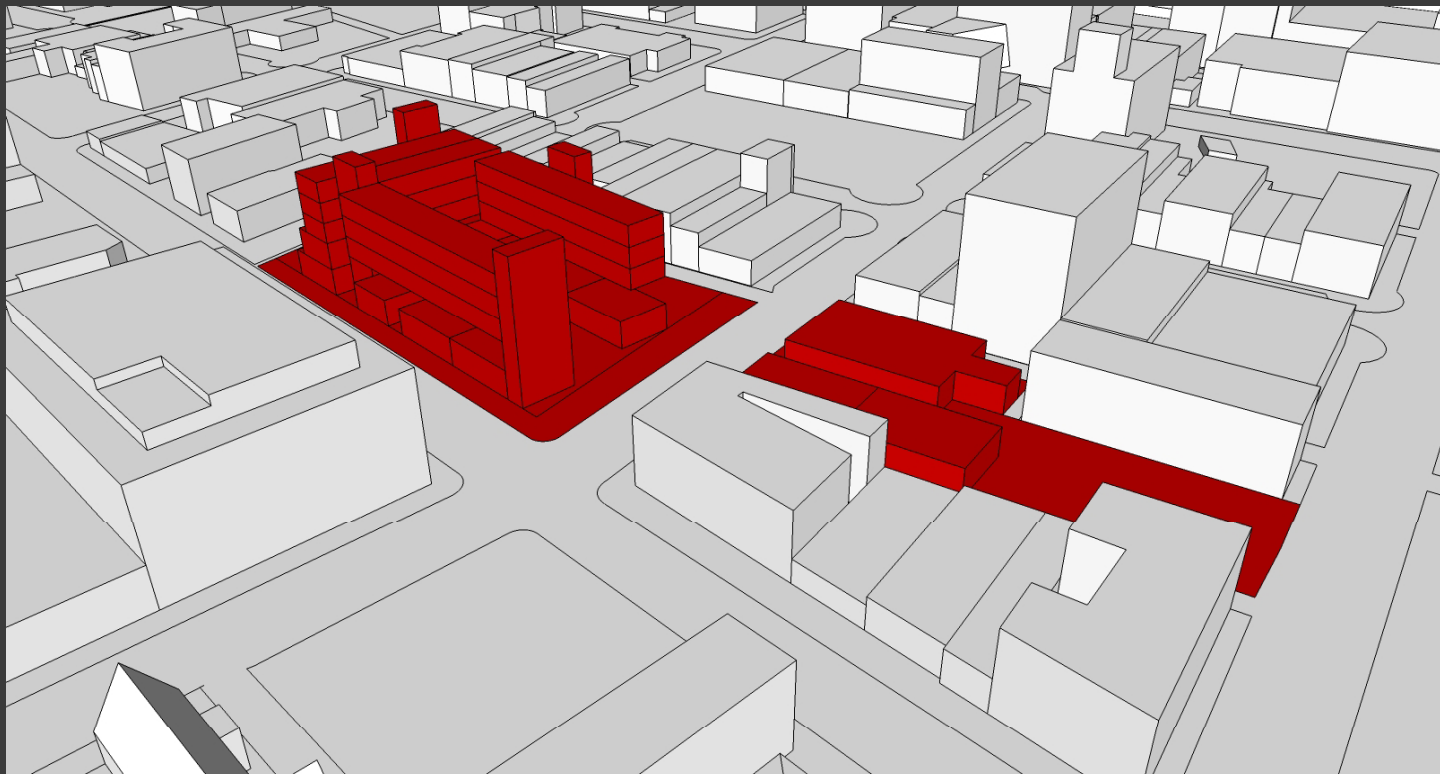


Exposure to the south

Chosen Schematic Design

The final schematic design, as can be seen here is a far cry from the pyramidal structure I first designed.

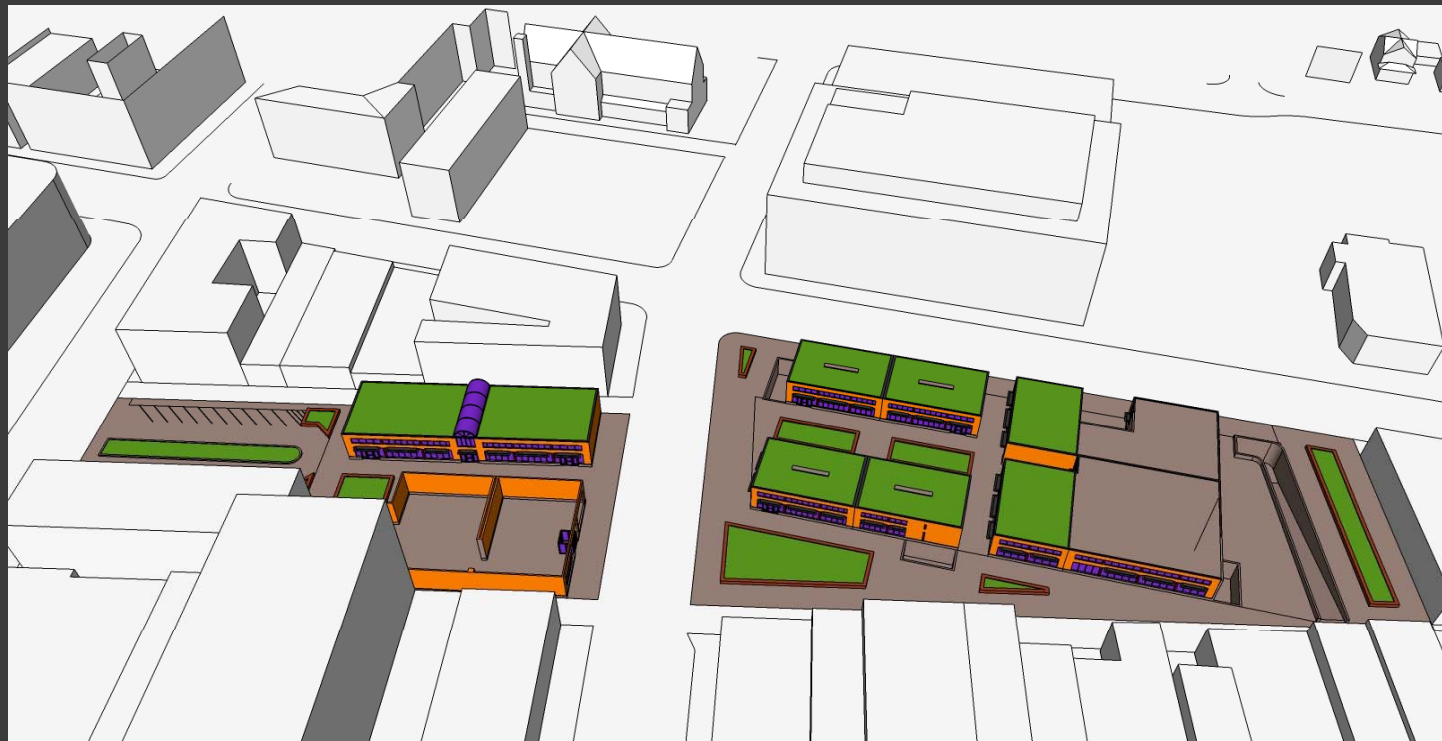
The four main vertical spaces really stand out in this design, as well as the floating of the apartment wings.



Addressing The Retail and Parking Spaces

Due to the nature of the floating apartment structure, my development really addressed the commercial center and the living spaces as two separate entities.

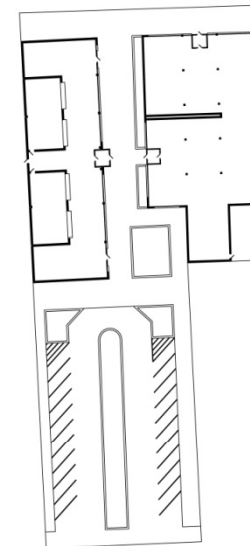
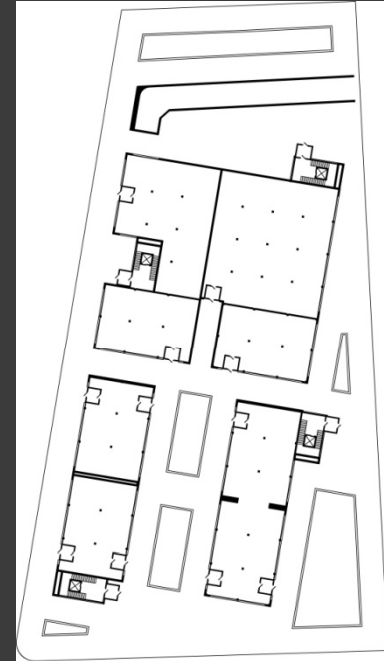
By addressing the site in this way, it is a lot easier to see the ties between the south part of the development and the north.



Retail Floor Plan

The retail centers within this development are set up with three main purposes in mind.

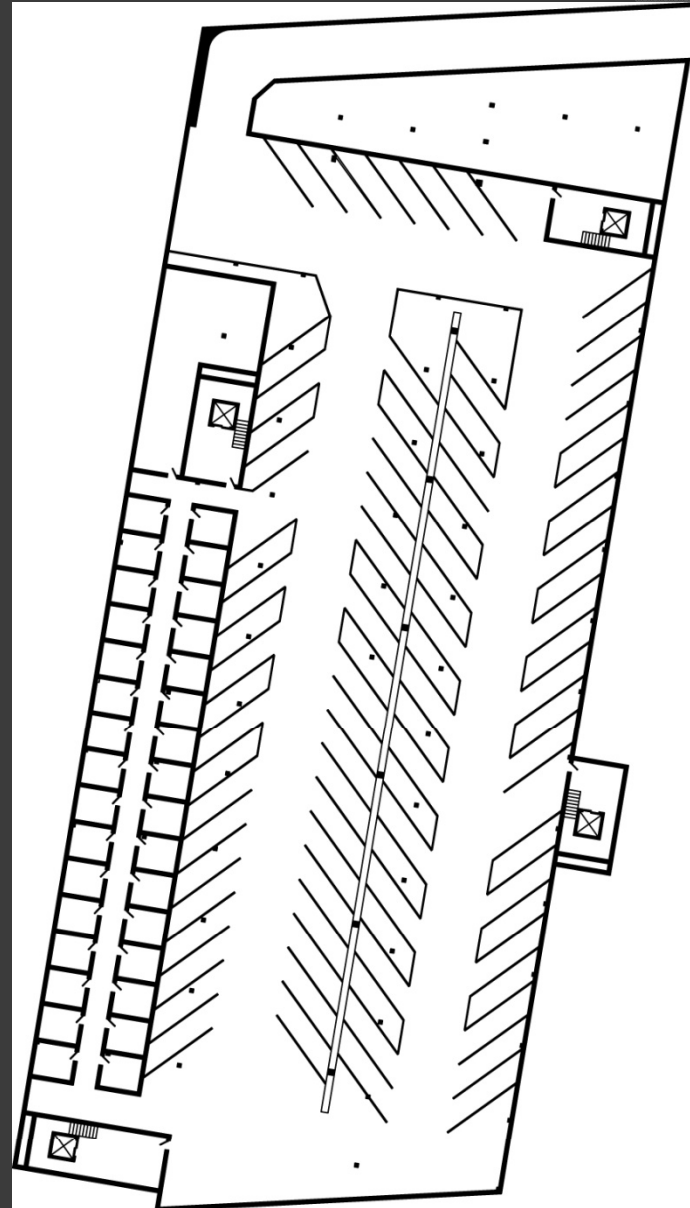
- 1) The South part of the development is used to tie the new NDSU apartments to the north part of the development.
- 2) The South portion is set up to be a food center and hub for the students and new residents of the development made up of cafes, a restaurant, and a bar.
- 3) The North portion is made up of a workout facility, daycare, grocery store, and four retail shops that are to serve the downtown residences thus enabling them to be less dependent on the automobile.



Parking Floor Plan

Although parking floors are usually the least interesting places within a structure; the downtown developments parking level has four very distinct functions.

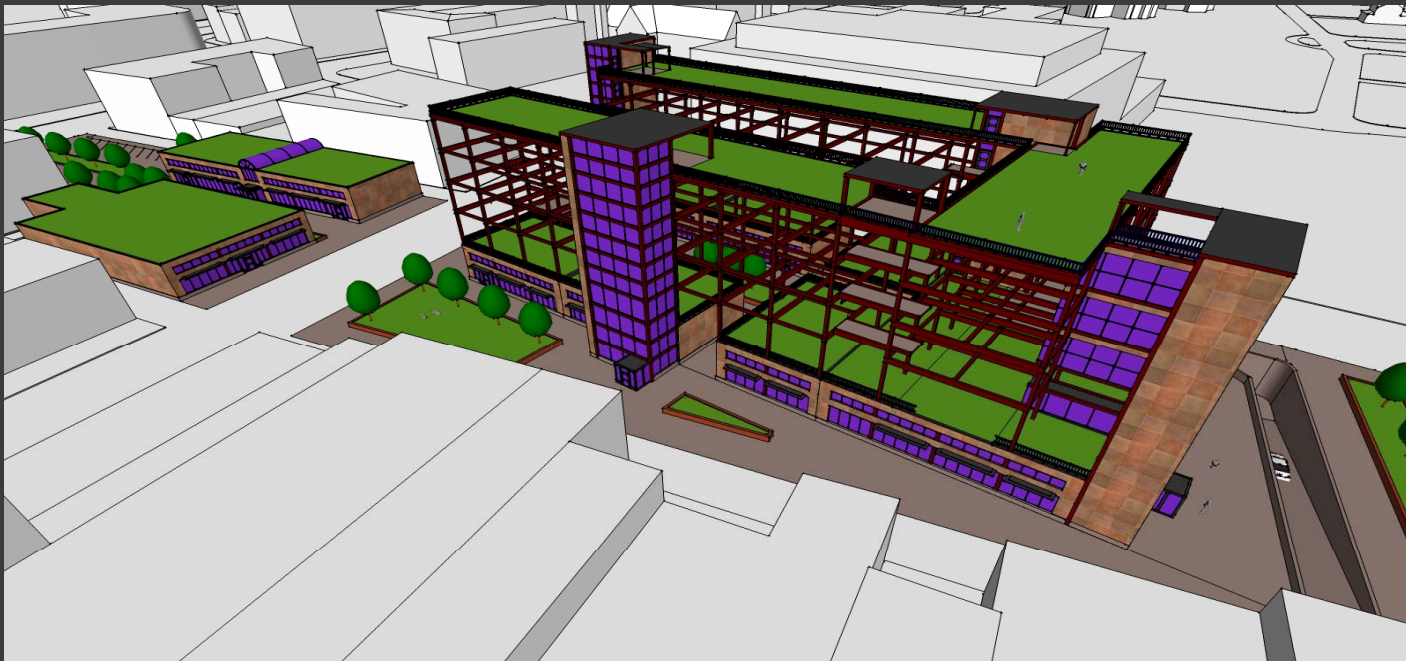
- 1) The parking level provides two parking spots for every retail space located above.
- 2) The parking level provides one storage space and one parking space for each resident.
- 3) The parking level allows access to all four of the vertical spaces in the development.
- 4) The North end of the parking structure provides a storage space for the water runoff created by the structure



Supporting the Floating Apartments

As can be seen in the image below; the structure of the development lies independent of the retail floor below.

This independence allows the floor plans of the apartments and condominiums to be entirely free flowing with no columns. Also, it allows the building to be easily converted if ever the function of the development needed to change

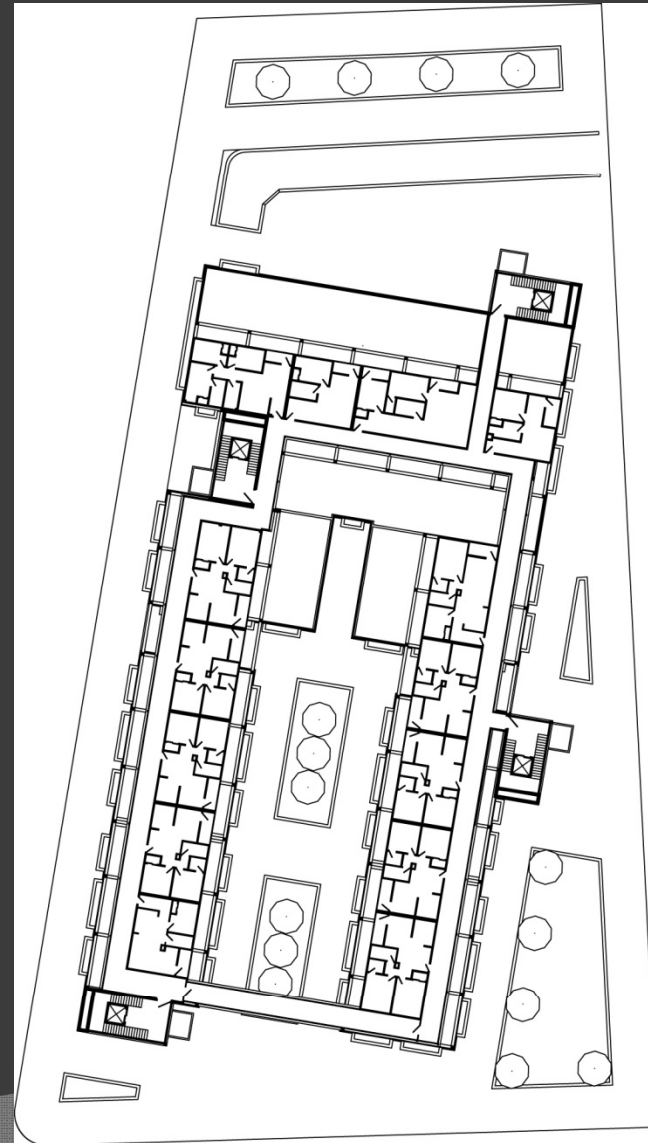


Floor Plan for the Apartment and Condo Floors

Every floor of the apartment and condominium levels will have five one bedroom apartments, five two bedroom apartments, and four condominiums made up of two one bedrooms, one two bedroom, and one three bedroom condo.

Every living space will have access to the green roofs located on the top of the structure and the second floor.

All the apartments will have a deck looking into the courtyard of the development, and will be accessed from the exterior side of the structure.



Green on the Site

One of the more serious problems with the developments of within the downtown area of Fargo is the lack of green space.

This new development will allow the site to have an amazing ability to provide green space, and to retain water.

The runoff that this new development creates should be little to none, with the overflow being collected within the storage space of the parking level.

Everything in red in the image to the right will be a functioning green roof system



The Final Composition



The Development will have four main materials. These will be glass, steel, concrete, and a tile façade treatment that will absorb sunlight allowing the reflection from the building to be minimal, and also roughly match the material makeup of existing downtown structures.

The Complex



Designed to fit into a fairly Complex site, this new development will provide the various necessities that have not existed within the downtown area of Fargo to this day.

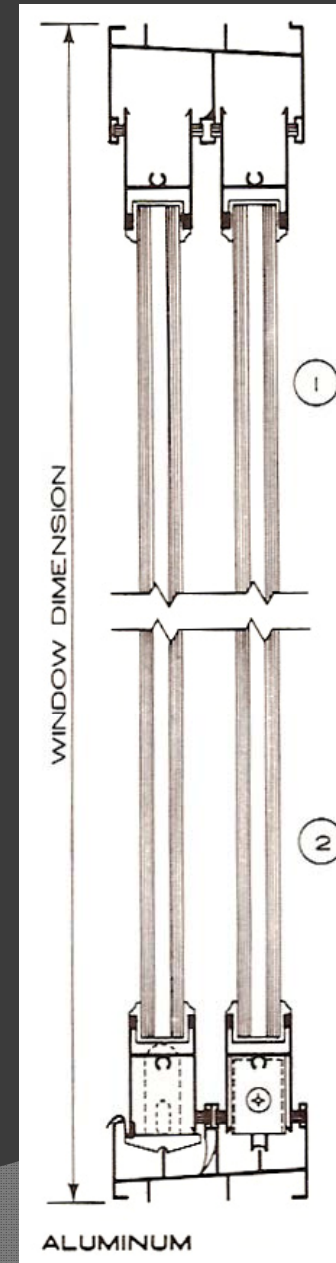
Made up of a fairly simple palate of materials the complex itself will provide numerous features that will support the residence's everyday lives

Construction details

One of the main features of the design is in the amount of windows.

The detail at the right shows the way in which each window would be placed into the structure.

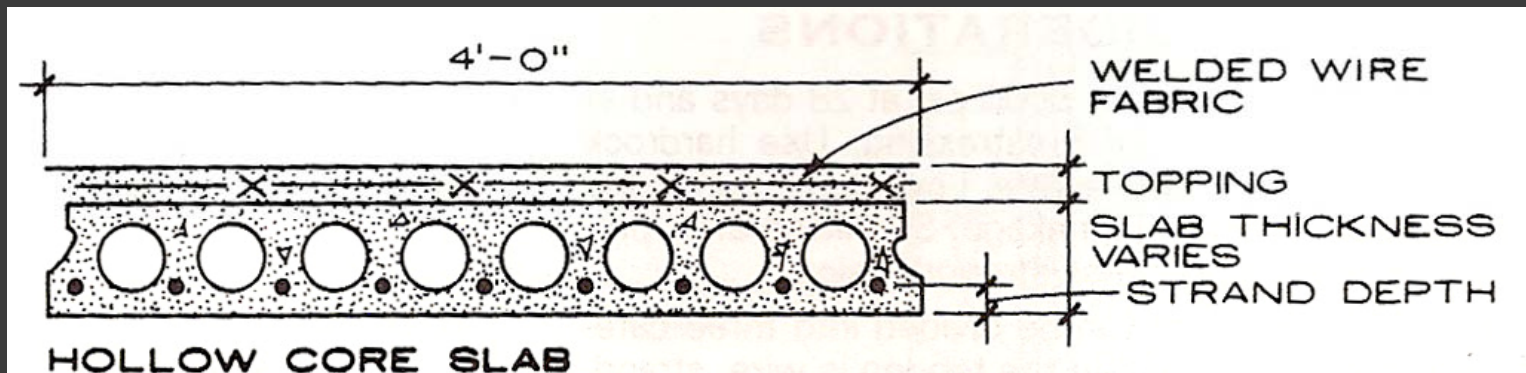
The windows will be doubled up to ensure that the cooling and heating lost through them will be as minimal as possible



Construction details

Each floor making up the apartment levels will be made of hollow core concrete. The slabs will be 4'-0" wide and will span between the girders that make up the rigid frame.

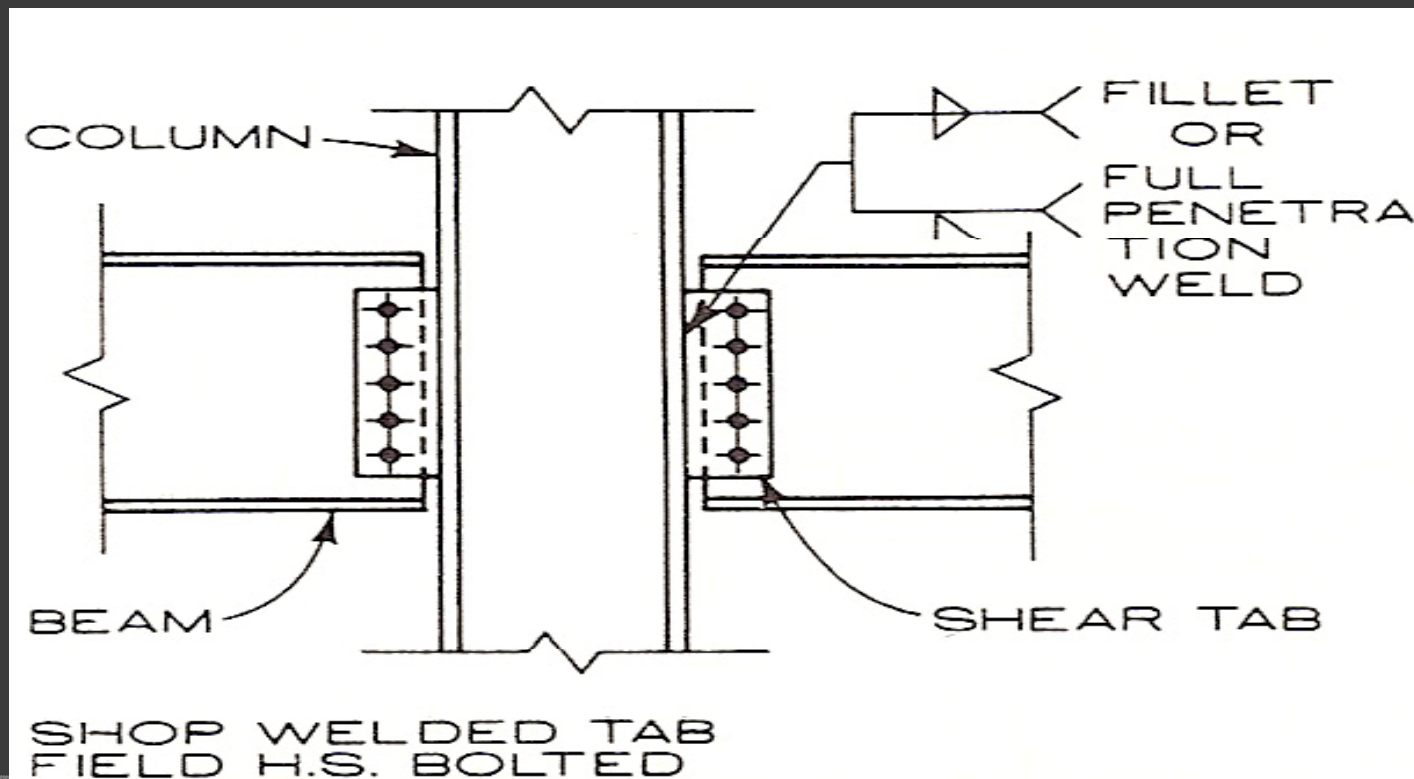
The concrete floors should also greatly reduce if not erase the issue of neighbors being able to hear each other's footsteps. This phenomena is one that typical occurs within Fargo's apartments located downtown.



Construction details

Since the structure will be made up of steel I though the way in which the girders are fastened to the columns would be of some importance to show.

The frame of the structure will be a rigid one.

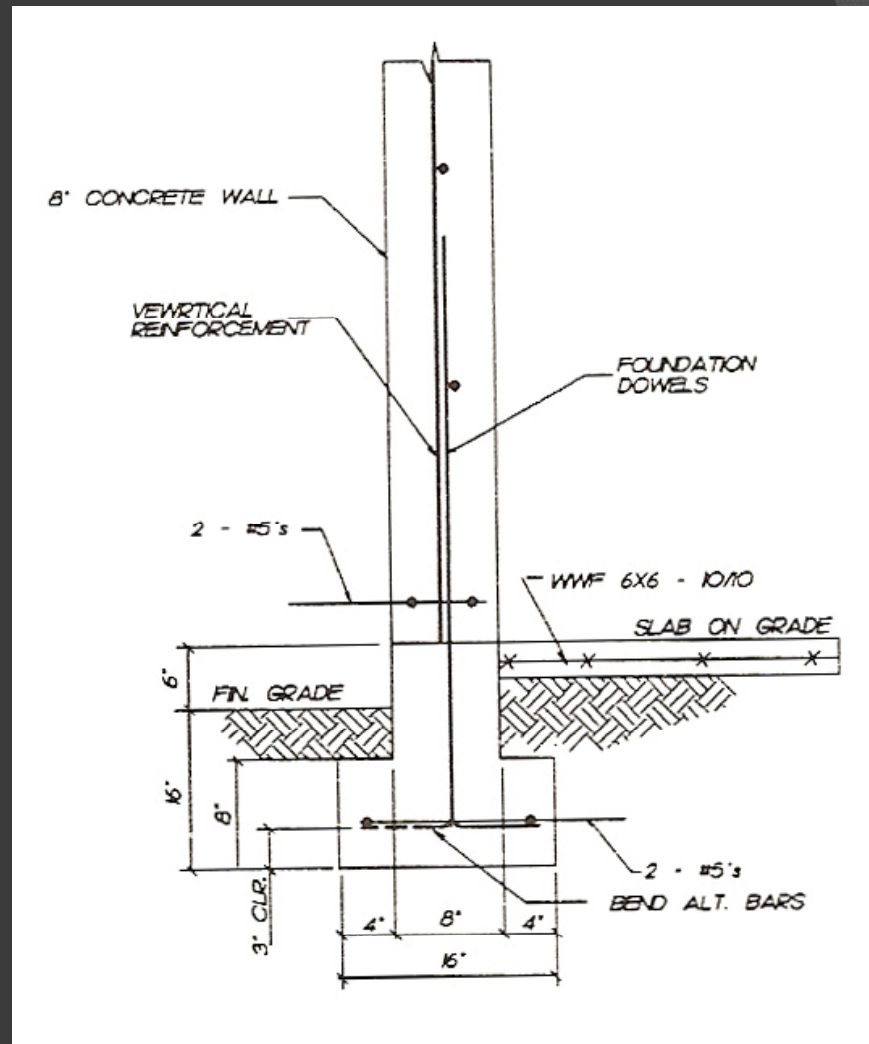


Construction details

Although this foundation method will not be what is occurring within the north part of the development.

The foundation detail to the right will be accurate for the structures located on the southern portion of the development.

This type of foundation will be located on the alley sides of the two buildings located in the southern portion.



Conclusion

The downtown development is an example of the way in which we as architects need to design in order to provide the necessities for people in urban areas. We must begin to take a holistic approach that enables the users of our developments to live within the urban centers of our country.

My personal goal for this project was to explore and begin to understand my ability as an architect and an Individual; the ways in which I can begin to affect society and the individuals within that society through my design.

