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Downtown Revitalization: Parks in the Sky

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Downtown Revitalization: Parks in the Sky

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A Terminal Project
Presented to the Faculty of
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Terminal Project Abstract

Spring 2005
Over the past eight to ten years Omaha has taken great strides in redeveloping the downtown business district. Many businesses have reinvested in the downtown adding new buildings and parks to the area. The most noticeable are the two new high-rise buildings or First National Bank and Union Pacific Railroad. One key ingredient missing in the revitalization of downtown is the source of people throughout the entire day. Omaha has made some attempts to bring people back downtown by creating new apartments and condominiums. When you take a closer look, you will see the lack of mixed use buildings.

With the lack of mixed use buildings in the area this building it provides the opportunity to redevelop a city block based on mixed use. By creating a mixed use project this will provide ample growth opportunities in more ways than a single use building will. The project is looking at redeveloping the block formerly occupied by the Union Pacific Railroad building located at 14th and Dodge Streets. The proposed Terminal project will explore, analyze and provide a solution to this urban design problem of creating a dense mixed usage 30 plus story high-rise building consisting of residential, commercial and retail spaces.

In choosing this terminal project, the four main goals I want to achieve within this project are: One, create a livelier downtown streetscape for Omaha through mix uses including commercial, retail and residential spaces. Creatively establish a greater sense of density to heighten the sense of urban presents. Two, explore the potential of a high-rise building to contribute to the urban density of a city. Enhance the connectivity between the street and interior spaces. Explore the possibilities of integrating uses of the building as a means of extending the life of the city into the vertical building. Three, investigate the possibility of mixing income along with uses. Four, explore the challenge of knitting new construction into existing fabric.

The specific areas of exploration will include areas importance to developing a livelier downtown. I am especially interested the how the building meets the street in creating a lively streetscape. The building should show a dynamic dichotomy between the commercial, retail and residential programs which have distinct characteristics of each. Design the facades horizontally and vertically without created a repeated stacked affect that is mundane. There should be areas of highly public, semi-public, and private spaces. There should be some type of green space relative to the site for recreational purposes whether it’s for residences pleasure or recreational space for others.

The proposed high-rise building should provide creative solutions for several different program functions. The three
The residential will accommodate all levels of income to create strong neighborhood diversity within the building. New amenities should be viewed in a way to bring people in. Amenities may include some form of entertainment, grocery center, recreational, spa center and art gallery. More information will be discovered when a land use map is created to understand the programs of the adjacent areas. A sky lounge at the top of the building will provide an opportunity for people to view the panoramic views of the city from above. The sky lounge will allow people to interact with skyline as well as the building to interact. A strong skyline will enhance and signify Omaha’s downtown.

The notion of renovating parts of the Union Pacific building should be entertained during the research and design period in the fall of 2005. Currently this block is made up of several buildings and additions that create an eclectic building mass which does not lend itself too many adaptive reuse projects. I feel several facades could be reused located on 15th and Dodge streets as they present a strong urban façade. The remaining portions of the site should be left for complete redevelopment. At first look the l-shaped portion of the building that I suggest to be salvaged would easily accommodate residential space.

The building form should contain a base, a body and a crown. These elements are typical of high-rise design projects or any multi story building. A strong delineation between the three building forms will give the building a strong character and identity which a building of this size must have to be designed successfully.

The residence program function of the building should accommodate to all levels of family income. When creating density among people, diversity will occur. How you treat diversity among the groups without showing favoritism a challenge. The residents may be clustered in one area or disbursed around the building to create mini neighborhoods within the block. This provides a way to explore separate identities or themes for the building or different flavors of living environments to choose from.

As Omaha’s skyline appears on be on the verge of growth, the skyline should interact or create a dialogue between
other buildings. The real question is what type of attention does it seek? A building of this size will not go unnoticed. Design of a landmark building verses an iconic building will be greatly considered. Does it want to redefine the entry view of Omaha like that of The Tower at First National Center or have a strong presence like that of The Woodmen? With a building of this size how will the pedestrian scale interact at a comfortable level? I do feel the height of the building should break the plateau line of most the buildings downtown and help redefine the skyline. Breaking the barrier will help establish and signify the downtown.

One element of the project that has not been addressed yet is parking. Parking should accommodate one stall per living unit and portion of the commercial employees of the building. Currently street parking is available on all streets around the area. Some of the design will be influences by the size and location of the parking garage needed for the project. This element should be figured out early on in the project.

**NAAB Criteria:**

The NAAB requirements that are stated for this Terminal project will be used as a guideline for minimums.

- **Use of Precedents** - used as datum’s of design.
- **Human Behavior** - how people interact in the urban environments.
- **Site Conditions** - what relationship in similarity and contrasting will occur?
- **Building Systems Integration** - what influences they have on location of program functions or building services.

**Site Description:**

The site of the old Union Pacific Railroad building is bound by 14th and 15th streets and Dodge and Capital Ave streets. I feel the former site of Union Pacific Railroad would make a great site for a new mixed use high-rise building. As the Omaha World Herald wrote about the future of this building and the extensive work on removal of asbestos, one can speculate how soon this building will be torn down¹. Omaha is quick to destroy old buildings for new growth of the downtown, just look at the new Union Pacific, Qwest Center, First National Tower, and the several hotels built downtown in the past five years. I do feel details can and should be salvaged to be reused in the new building. This says a lot about not forgetting ones past even for buildings.
Methodology:

In order to achieve the main goals of creating an interactive streetscape of mixed use, the exploration of a high-rise building in an urban context, variety of income based residential and creating a dichotomy of existing and new construction. In order to gather the research for design case studies appears to provide the best critical analysis for mixed use high-rise design. The case studies will focus main goals of the project along with how the building to street typology conditions, creating a division between public and private sectors of the redevelopment, and interaction of mixed usage amongst itself.

Several case studies will investigated to find problems that exist in the downtown area. How does the building meet the street condition? How is the same question addressed with other building around the site? Another problem to address is how public spaces and private spaces exist together? I want to investigate how different uses within a building are managed and what relationships exist. Street scale is one of the more important issues to be investigated. All of these studies will look at how others addressed these issues in either a positive or negative manner. For all of these case studies a datum will have to be formulated from field research. Analysis of these case studies used to develop the project will come from the surrounding sites and the fabric of the city.

The site includes all adjacent blocks and extends beyond those blocks as deemed necessary during the site analysis. The downtown fabric should be studied in
the east-west versus north-south street patterns. In studying the street patterns I should be able to develop a way to organize the building in terms of function and program. Information gathered from this exercise will show where the livelier streets exist; directional movement by them; types of characteristics that make them interactive; and adjacent spaces. A question to be asked does accessibility, visibility and site orientation affect how the building functions? Understanding the fabric of the city which surrounds the site will formulate a pattern which to adhere to with regards of circulation, accessibility and visibility. Traffic patterns maps will solve the problem of where to logical place entries for the building. I would not want to place a main entry on a façade that works against the traffic grain of the site. Access to the site will be very important design element to consider. Access for the commercial and residential areas of the building should not share entries because of conflict of interest and functionally of spaces.

A site diagram of existing conditions will be mapped and should expand beyond the adjacent blocks. A land usage diagram will be created to study and understand the functions that already exist. One diagram will focus on the street level while another will focus on above street level. Both diagrams should cover a large portion of the downtown area somewhere around 6 blocks beyond the site.

The edge condition in how the building meets the street and how the building
meets the sky and terminates are important elements that deserve special attention. The edge condition needs to be strong and articulated in a way that is inviting to pedestrians in order to generate a lively streetscape. Creating a strong urban streetscape will contribute to breaking down the scale of the facades as the meet the street. The building facades should touch all four sides of the block in some nature in order to maintain the strong vertical street façade that an urban downtown has.

Special design attention to the skyline in how the new high rise interacts with The Woodmen Tower and The Tower at First National Center will be considered. I feel it’s very important to enhance the skyline. Right now the skyline plateaus leaving building owners afraid to break the perceptual barrier. In order to break the barrier one must make a strong design move; this could be in form and or function.

Some type of a building program should be generated and used as a guide for the project. This program will be critical on establishing what type urban amenities the site and building provide for the people living and working there. Amenities to consider are grocery store, a health spa, recreational center and healthcare are a few come to mind right away. I will have a better insight on amenities after a land use map is generated.

Material change could aid in this process as well. Materials light in color I feel will work better in this project for the body and crown of the building. They will make the building feel and look lighter and not so massive where dark colored materials would. Material textures of smooth and rough must be considered in how they will affect the space. Placement of large amounts of rough materials at street level would create aggressive and
tension to the atmosphere. Do we want people to stop and mingle or to move straight through the site and not stop? Scale of the building will be critical in order to create a positive streetscape without losing the urban identity of downtown building right up to the property line. One way I would like to treat the scale of the façade it to break up or stagger the façade planes. Creating a canopy of some fashion will ease the street scale down to a comfortable level for pedestrians.

Lighting of the space is another element to consider. Natural daylight will be critical for all residential units. A sun verse shade diagram of the site for all the seasons should explored in order understand how sunlight will interact on the site. Commercial areas of the building also need daylight to provide a sense of the refreshing feel of being outside. Clues can be taken from the surround buildings in how light and window treatments in a suggestive manner of what type of vocabulary they read as. In looking at lighting and window treatments, does the program function drive the window design or vise versa? Window treatment must provide a sense of change of program function from the interior to the exterior of the building.

Another avenue I would like to explore in my research is design styles of high-rises and how they relate to function if at all. In looking at styles what characteristics make them landmark buildings or sets them apart from a plane Jane building with no identity that becomes a build that is just part of the context of the city. I want to learn what characteristics make the high-rise iconic rather than a local landmark or just a high-rise building.

All of these topics should provide a solid point to start the research process and design for my Terminal project. I know additional areas will occur and will be addressed or added to the studies when they occur. This will provide and excitant insight to my terminal project for the next fall. I am eager to start the research and development of this project.

Footnotes
Over the past eight to ten years, Omaha, Nebraska has taken great strides in redeveloping the downtown Central Business District (CBD). Many businesses have reinvested in the downtown adding new buildings and parks to the area. The most noticeable are the two new high-rise buildings or First National Bank and Union Pacific Railroad (UP). One element missing in the revitalization of downtown is the source of people throughout the entire day. Omaha has attempted to bring people back downtown by creating new apartments and condominiums. When taking a closer look, there still is a lack of mixed-use buildings.

Omaha, Nebraska is quickly growing from a small city into a large city. In this transformation, one quickly looks at the CBD to understand the growth of a city. One element of a city which signifies growth and prominence is the skyline and density of the downtown Central Business District. The creation of a new mixed-use building will focus on developing one city block in downtown Omaha, Nebraska containing retail, commercial and residential program spaces. The purpose of the program is to establish a set of design criteria to follow during the design process of a new mixed-use high-rise building. This program, will discuss the creation of livelier street presences, the growing need for interaction of the skyline, creating a sense of character for the city, expansion of greater urban density vertically, and understanding the fabric of the city. From exploring these major points of interest, one will be able to generate a dichotomy of design principals to follow.
Background
Omaha is becoming a large metropolitan area of over 800,000 people in the area. Within a 50 mile radius over one million people call this area their home. Omaha is centrally located in the United States, where it is located at the intersection of Interstates 80 and 29. Omaha is rich with history dating as far back to the settlers crossing the country on the Oregon and Mormon trails. The railroad also has strong ties to Omaha one of the major East – West line runs through the city. Some call Omaha the true gateway to the west.

With Omaha, centrally located easily facilitates as great transportation hub for the shipping region and much more. Five Fortune 500 companies call Omaha home along with billionaire Warren Buffet. Surprisingly, one of the worlds largest and first class zoo.

Omaha’s cornerstone is its lifestyle. While, Omaha consistently ranked among the nation’s best cities for raising a family, health and education. Omaha offers an amazing balance of cosmopolitan ‘big city’ and friendly ‘small town’.

During the summer of 2005, the city placed a “Request for Proposal” (RFP) out to the public for developing. The RFP outlined a project very similar in nature. Currently, the RFP are not due in until October 2005. [A copy of the RFP is included in the Appendix.] In Spring of 2005, the initial proposal for the terminal project was established.

Over the past year or so, the Omaha World Herald newspaper has written several articles about the faith of the old Union Pacific Railroad building. The most recent article of October 4, 2005, the city of Omaha was taking ideas for the site to enhance the downtown. Currently, two developers are looking at the site and have voiced strong interest in developing the site Townsend Inc. of Kansas City, Missouri and Grubb & Ellis / Pacific Realty. City plans to offer or make available several different tax incentives to any client wishing to peruse this project. The city understands the economic factor of the project where one had to clear the site of the old building and construct new. This project could easily exceed $100 million.
History of the Building

The former home of the Union Pacific Railroad building sits vacant as the future of this building is unclear whether to renovate or demolish this historic structure. When UP first decided to build on the current site they already had a vision for the building. Even before an architect was selected to design a building for Union Pacific, W.R. McKeen from within the company had generated a model and a vision of what the new building should look like according to Omaha – Times Remembered. The unveiling of the model came at a retirement party for Vice President Adam Mohler around 1910.

In 1910, construction was under way for a new 12-story building for the Union Pacific Railroad Company designed by Jarvis Hunt a prominent Chicago architect. At the time of construction, Union Pacific Railroad spent $1.5 million. For this value, Jarvis Hunt had designed an elegant neoclassical style building for UP. By January of 1912, the new building was ready to be occupied by employees and operation to begin. Although, some areas are still not finished. From 1927-29, a new addition was added for the quickly expanding engineering department. This addition expands northward toward Capital Ave along 15th street. By 1937, the necessity for air conditioning the building took place, when the air conditioning towers were added to the roof. In 1957, a five-story computer wing addition is completed, believed to be located on the northeast corner of the block. By 1970, Union Pacific undergoes a major addition to the site by adding a twelve story building along 14th street running the entire length of the block. None of the additions to the original building did little to incorporate the original design. It is clear each addition reflects designs specific to each era.

By 2001, Union Pacific made the decision to consolidate the ten headquarters locations from around the United States to one city and one building for logistics reasons. Gensler Architects, one of the largest firms in the US, was selected for a new building located just one block south of the original building. In May of 2005 the new corporate headquarters was fully operational, thus leaving the old building vacant.
History of the Architect

By the time Jarvis Hunt (1864 – 1941) was commissioned for Union Pacific Railroad building, he had already established himself as a prominent architect from Chicago. He gained his notoriety from his design of a Pompeian Villa at the Worlds Columbian Exposition of 1893 in Chicago, Illinois. Hunt was a well-educated person from Harvard University and Massachusetts Institute of Technology. As his interest grew in design, he found his niche in Beaux Arts style. One of the architects who Jarvis followed in the footsteps of was Richard Morris Hunt. Jarvis Hunt has 10 buildings on the National Register of Historic Places. Currently, the Union Pacific Railroad building is not listed on the National Register because of the last major addition in 1970 – 74. According to the National Register, the age the building must be greater than fifty years. The addition in the 70’s disqualifies the building until 2024 from becoming eligible.

National Register List:
- Dallas Union Terminal – Dallas, TX
- Chicago and Alton Depot – Saline, MO
- Union Station – Jackson, MO
- Union Station (Boundary Increase) – Jackson, MO
- Indianapolis News Building – Marion, IN
- Union Station – Will, IL
- Ayers Bank Building – Morgan, IL
- Great Lakes Naval Training Station – Lake, IL
- Great Lakes Naval Training Station – Kane, IL
- National Bank of Commerce Building – Jackson, MO

Additional Buildings:
- Loramoor Estate – Lake Geneva, WI
- The Red Library – Nebraska City, NE
- Lake Shore Center – Chicago, IL
- Macy’s Department Store – Newark, NJ
- Southern Pacific Railroad Building – Houston, TX
Physical Condition
Site Context

This map provides an overview of the Central Business District. This shows how the CBD is broken down into areas. We quickly see the CDB is broken down into four areas of Educational, Commerical, Entertainment and Recreational.
Site Location
The site is located in the Central Business District of Omaha. The North and South streets which border the site are Capital Avenue and Dodge streets. The East and West streets that defines the site are 14th and 15th Streets.
Physical Condition

Existing Site Conditions

The Omaha World Herald wrote about the future of this building and the extensive work on removal of asbestos, one can speculate how soon this building will be torn down. Omaha is quick to destroy old buildings for new growth of the downtown, just look at the new Union Pacific Railroad, Qwest Center Omaha, The Tower at First National Center, and several hotels built downtown in the past five years. All of which, these buildings have been demolished other buildings from the site to make way for new. The option of saving some details in efforts to salvaged and reuse in the new building should be granted. This says a lot about not forgetting ones past even for buildings.

At first look, the L-shaped portion of the building that I suggest to be salvaged would easily accommodate residential space. Several facades show potential for reused located on 15th and Dodge streets as they present a strong urban façade. The remaining portions of the site should be left for complete redevelopment. Completely removing the existing building from the site is the mostly likely solution.
Site Analysis

The project site of the old Union Pacific Railroad building is defined by 14th and 15th streets and Dodge and Capital Ave streets. Currently, the site contains 63,360 square feet of land to develop vertically. The existing building contains 575,000 square feet of space. The address of the former Union Pacific Building is 1416 Dodge Street, and will remain as the address for the building. The original 12 story building of neo-classical style provides simple yet rich character to the downtown. Unfortunately, design guides were not taking from the original, so we are left with an eclectic architecture style around the building.
Photo Documentation

14th Street - West

15th Street - East
Photo Documentation
Street Level
We can see a fabric grain of an East/West relationships to major streets. We see individual units running North/South long and narrow to allow more units facing the street. The interstate I-480 creates strong boundaries for the area of the CBD even though a major portion is elevated above the street level. Parking is of abundant with 8 public parking garages and numerous surface lots around the area.
10 Stories Above
We quickly see the density of the city fabric decreases as we look at building over 10 stories. At this level we can see the strong East / West orientation of buildings.
20 Stories Above
From the map we a cluster of office buildings reaching 20 stories or more. From these 6 building one is a hotel while the rest is commercial office. With the site located in the cluster of the tall buildings, ignoring the fabric of the area would not be positive.
Street Level
At looking at solid – void diagram at the street level, 10 stories high and 20 stories high we are able to
determine different types of spatial relationships. We are able to understand where the clusters of smaller
buildings lie and where mega blocks have been developed. As we look between the different diagrams we
are able to understand the where the taller buildings are located in Downtown Omaha. In order to create a
standard benchmark for these diagrams the topography of the land is removed from the equation.
Solid - Void Analysis

10 Stories Above
From looking at the 10-story diagram we see many buildings help create the skyline plateau. Smaller areas of taller buildings are grouped together. The site creates a strong north edge for the CBD.
20 Stories Above
The 20-story diagram shows use there are only a hand full of that reach beyond this level. As Omaha strives to become a large metropolitan city, the downtown must transform in vertical scale and density.
The weather in Nebraska is subject to all four season of weather; Spring, Summer, Autumn and Winter. During each of the seasons, Omaha experience the full range of temperature and perception. During the summer months, it is not uncommon to have several days over 100˚. While during the winter it can reach -10˚ without a wind chill factor. Nebraska is acceptable to severe weather throughout the year. The warmest month is typically July while Feb is the coldest. Thunderstorms are most prevalent the spring and summer months. Tornadoes happen sporadic throughout the area during the April to June, as we lay tornado alley. Droughts have also occurred in the region of the country. Omaha receives much of its annual precipitation during April thru September. The frost-free season approximately 180 days long per year. Omaha is acceptable to strong windstorms on occasions. During the winter months, the north winds tend to be harsh and cold. The summer winds supplies the area with warm and humid air at times.
As one approaches the building from the south the views are limited with quick glimpses between the clustering of high-rises adjacent to the project site. As one enters the downtown from I-480 from the west, the views are quite dynamic in nature and the building is fully visible seen on the View Diagram. The park located to the north of the site clears the way for defining the one entry point of the project. The sharp contrast of the park quickly grabs your attention and guides one toward the site. As one approaches the downtown from the Epply Airfield on Abbott Drive will quickly see the new high-rise from several miles away. People arriving from Council Bluffs, Iowa will notice the new landmark to Omaha, just like The First National Tower quickly became the new landmark for Omaha during construction.

Views are from the roof of First National Bank Tower 630 feet above street level.
It is important to understand where the views to the site and building are from around town. At the same time views from the buildings are key for residential units out into the city. The building will be noticed around town in glimpses from the West and South from outside the CDB. The views from the North will be strong as people come to Omaha will arrive either the north at Epple Airfield or the East from Council Bluffs, Iowa.
The downtown area sees heavy traffic during the rush hour times of the day as one would expect. The block is located just one block south of I-480, which runs East-West direction. On 14th Street and I-480, provides quick access from the interstate with an exit ramp. The traffic volume carries 110,000 cars per day on average. Traffic on 14th street is one-way traveling south. Capital Avenue provides the only two-way access to the site running east and west. The prominent Dodge Street provides travel westward. Dodge Street is the central dividing line of the city into North and South Omaha. Dodge Street’s traffic volume is 104,000 cars. The last street, which bounds the site, is 15th street, which is one-way with traffic flow to the north. The traffic data is based on average number of vehicles per day base on the traffic study in 2002 by the Metropolitan Area Planning Agency. (See Appendix for Data)

Traffic Analysis

From the traffic patterns and flow thru the area we are able to establish dominate sides of the block. Dodge Street one of the most recognizable streets in Omaha, which should have an entry on this street. The next street of major influence is.

Traffic Diagram

This diagram shows major access to and from the interstate I-480. The important feature is the street flow directions of the one way vs two way streets.
In this diagram major sources of traffic volume and flow become clear. People entry the CDB at two major points, Council Bluffs, Iowa and I-480 from the West. Highway 75 provides the third point of entry into the downtown. 14th street exit from I-480 provides nearly the same amount of traffic as does any of the other side streets like Dodge Street or Capital Avenue.
Access Point Diagram

During the site observation period of I discovered it was critical to map the entry points of pedestrian and vehicular. In the process I discovered the site had two front elevations or two main entry points for pedestrians. The first being Capital Ave on the north side of the block and the other being the south side on Dodge street for Commercial entry. When I mapped the Service entries 15th Street was clearly the back side of the block. Union Pacific has service located on this street and two parking garages enter from 15th street as well. The traffic patterns shows 14th Street as a major entry point to the CBD. The East side of the block can be treated as a side or a front. I have chosen to address it as a side but with secondary entry point. Capital Ave and Dodge Streets have stronger precedents for entry points.
Site Land Usage

Base on each of the streets fabric, traffic analysis, access points and land usage mapping it became clear how to organize the site. Capital Ave is a pedestrian orientated street especially with the adjacent park to the North of the site. Dodge Street is the street in which divides the city in to North – South sectors. This street has also been established as a main commercial street in the East – West direction throughout the entire city. I saw the need to keep 15th street as a the service side to match the adjacent blocks. This made a prime spot for the parking garage and service entries. Residential is located on the north portion of the block, while commercial is the south side. Retail space is placed around the entire block at street level.
Omaha’s general cost of living rank 91% from 300 cities surveyed in by the ACCRA Cost of Living Index in Spring 2005. This is 9% below the nation index average at 100%. Housing is ranked at 79%. Of the survey of information gathered Utilities and Transportation ranked above the national index average at 113 and 102 respectively. From the survey Kansas City MO-KS the next closest city by distance is rank at 95%, although they have a larger population than Omaha.

The importance of this information allows Omaha to become more attractive and competitive with larger cities in the market of attracting new businesses and people into Omaha, Nebraska.
As we look at the different types of buildings, Omaha has downtown we can quickly see some trends and clues to follow. If we are looking for rich texture and long lasting character we quickly notice the brick found in warehouse buildings where some date as far back as the 1920’s or earlier. While several buildings seek elegance in their smooth polished granite or limestone facades, we notice the First National Tower, The Woodmen Tower and several other building using granite as part of the story front.

If not all the newer buildings downtown use some sort of combination of the glass curtain wall. They range from custom design to exotic stones from around the world. There is a pattern with the curtain-walls, they either create a vertical striping of the building of the repeating patter of solid – glass –solid to emphasize the vertically of the building. Most curtain-wall systems contain a vision glass panel, opaque glass panel and then solid stone or metal panel elements. Some buildings have used a pre-cast concrete panel system. These area typically found in parking garages, but the Qwest Communication office building on which uses pre-cast concrete. From the materials used downtown most granite and limestone have outstanding performance to handle the harsh environment.

Several buildings hold a contemporary design quality of them by simply using vision glass and metal panels. The new Union Pacific Railroad and Qwest Center Omaha are two, which use this approach. From the materials used, we see a variety of materials and styles are used to unite the downtown.
Client Profile
When looking at the target market of who would be of interest to purchasing a condominium unit in the CBD we see a select few. The first group of people are the young professionals recently out of college looking at starting their career. The second group of people are the ‘empty nesters’. They have no kids living at home and are typically are 50 years old or older. The third type of people who live the single life and are always on the go.

With this project consisting of mixed use, the commercial area of the building will be able to support a company headquarters of small to medium size and or tenant office spaces for individual companies.

This program document is to compete with the current projects already underway. With two developers seeking to submit their designs to the City of Omaha for approval, both developers are using the same program guide. Currently Townsend Inc. of Kansas City, Missouri and Grubb & Ellis / Pacific Realty of Omaha has expressed great interest in this mixed-use project. The City of Omaha requested this program to be generated specifically for this project for the RFP in which the city has created. In looking at the market sector, typically commercial developers seek out to create mix-use projects.

Constraints
The downtown district had undergone several masters planning which includes Creighton University expanding, Riverfront Development, North Downtown Development and the Central Downtown, which lead the way for redevelopment. The city would consider any alternatives to issues that may occur in the design phase of the project. Currently Omaha is using the 2001 International Building Code for the code guidelines for all projects.
Mission Statement
With the lack of mixed-use buildings in the area, this building will provide the opportunity to redevelop a city block based on mixed use. By creating a mixed-use project this will provide ample growth opportunities in more ways than a single use building will. The project is looking at redeveloping the block formerly occupied by the Union Pacific Railroad building located at 14th and Dodge Streets. The proposed Terminal project will explore, analyze and provide a solution to this urban design problem of creating a dense mixed usage 30 plus story high-rise building consisting of residential, commercial and retail spaces.

Design Goals
1. The project should create a livelier downtown streetscape for Omaha through mix uses including commercial, retail and residential spaces.
2. The building should provide creatively establish a greater sense of density and heighten the sense of urban presents.
3. The site should provide quality public zones as places with attractive, successful and accessible outdoor areas.
4. The project should provide connectivity between the street and interior spaces.
5. A project of this size and nature should draw attention to all diversity of people.
6. The development of the site should provide connectivity of the old fabric of the downtown as well as spur new a new fabric dialog for the future.
7. The Design should create a place with its own character and identity.
Design Goals

**Goal #1**
The project should create a livelier downtown streetscape for Omaha through mix uses including commercial, retail and residential spaces.

**Performance Requirements**
1. The facility should opportunities for a variety of different ways of interaction at the street level.
2. The site should create a friendly atmosphere and scale of space at the street level.

**Goal #2**
The building should provide creatively establish a greater sense of density and heighten the sense of urban presents.

**Performance Requirements**
1. The building should create a dialog between the other high-rises in the downtown district.
2. Explore, analyze and provide a solution to this urban design problem of creating a dense mixed usage 30 plus story high-rise building consisting of residential, commercial and retail spaces.
3. The building should maintain a dominate podium and tower with large floor plates.
Goal #3
The site should provide a quality public zones as places with attractive, successful and accessible outdoor areas.

Performance Requirements
1. Design for diversity of people by creating places with variety and choices.
2. Ensure an urban continuity and enclosure in providing a place where public and private spaces are clearly distinguished.
3. Provide public and private spaces unique to the area as an amenity to the area.

Goal #4
The project should provide connectivity between the street and interior spaces.

Performance Requirements
1. Explore the possibilities of integrating uses of the building as a means of extending the life of the city into the vertical building.
2. The design should accommodate flexibility thru adjustability of space program sizes.
3. Provide ease of movement by creating places that are easy to get in to and move throughout.
Goal #5
A project of this size and nature should draw attention to all diversity of people.

Performance Requirements
1. The residential portion should provide a strong variety of dwelling units.
2. The commercial portion should provide flexibility in different tenant size spaces to lease out.

Goal #6
The development of the site should provide connectivity of the old fabric of the downtown as well as spur new a new fabric dialog for the future.

Performance Requirements
1. The street level should look at existing elements of the city’s fabric where it incorporates those elements into the project.
2. The project should be able to contrast the existing fabric and language of the downtown area.

Goal #7
The Design should create a place with its own character and identity.

Performance Requirements
1. The design should creatively establish a difference between the commercial and residential area of the building.
2. The project should provide remembrance of history to what was there before.
3. The design of its identity should lead others to the next generation of design.
This diagram illustrates how the building should function and as a whole. The diagram maps out the circulation throughout the building as one would enter the building and travel to the desired destination. Program functions have been located adjacent to proper function with the most usage or best relationship to one another. Street access is very important to the Retail Area, Residential and Commercial Lobbies and the Parking and Service Garage. The Building Amenities should have easy access for both the Residential and Office Space. The Building Amenities are for both Residential and Office tenants.
These guidelines are a foundation for the design process. They only act as a guide or a tool for the initial design process. Deviations from general list is acceptable to better enhance the design.

**Square footage the Site**

265’ x 240’ = 63,360 sq ft

63,360 sq ft x 30 floors = 1,900,800 sq ft

63,360 sq ft x 50 floors = 3,168,000 sq ft

**Parking Garage**

1.5 stalls per apartment unit

5% per commercial area

5% per retail area

**Commercial Area**

50% of building area

public lobby

80% efficient floor ratio

**Residential Area**

40% of building area

Private lobby from commercial

range in size from 800 to 2000 sf ft

**Condo Types**

1 Bedroom

2 Bedrooms

3 Bedrooms

Penthouse

**Condo Space Program**

Kitchen

Living room

Dining area

Study / den

Closets - walk-in

Utility - Laundry

Bathrooms

Balcony

Atrium access

**Office Space Program**

Open office Floor plate

15,000 Square foot floor plates

Atrium access from every level

**Building Core**

Stairs – 4

Elevators - residential - 4

Elevators - commercial - 8

Service elevator - 1

Lobbies

Mechanical closets

Electrical closets

Data closets

Tenant storage units in basement

Restrooms - 2 sinks and 4 toilets

**Building Amenities**

Fitness Center

weight room – 3600 sq ft

Day spa – 1000 sq ft

Outdoor reqd 5000 sq ft of patio space

Coffee Lounge – 1200 sq ft ground level

Sky Lounge / Party lounge - 4000 sq ft
With this thesis project, I will show an understanding of the CDB fabric while using what I have discovered/learned to guide this high-rise building project. This project focuses on the residential aspect of how to create a community in a high-rise building where people are glad to know and interact with their neighbors. With the need for a residential tower present, the site of Capital Ave, Dodge St, 14th and 15th streets provides an excellent opportunity for this development. This site takes full advantage of the park adjacent the site, access to the site and the lack of residential near by. Parks in the Sky is a ‘Mixed-Use” high-rise building containing retail, office space and residential condominiums. In creating this high-rise building will challenge and interact with the downtown skyline plateau.

Project Objectives
- To establishing a livelier downtown streetscape of people, who desire to live and work in the same community.
- Creating a sense of community and belonging within the residential tower with the use of community green spaces within the high-rise.
- To enhance the downtown skyline with a new high-rise building to show Omaha is a strong and growing community and city where people want to come and live.

The Concept
To establish a lively “Mixed-Use” Urban design high-rise building containing Residential, Commercial and Retail spaces centered around Parks in the Sky as the heart and Community of the Project.

The goal here is to bring in the lush green landscapes you see in suburban landscapes. Where as in a urban landscapes lush green parks are very limited because of the value of the land is so expensive where public parks provide little economic value but a lot to the social environment.

Evaluation Criteria
1. How does the building interact with the site context?
2. How well do the functions of the space relate to the size of the floor plates?
3. Is the form of the building suited for the function of the space?
Conceptual Precedents

Residence Mumbia
SITE Environment Architecture
Mumbia, India 2003
Conceptual Diagram

Kingdom Trade Center
Kohn Pedersen Fox
1996 Competition - Riyadh, Saudi Arabia
Mixed Use of Residential, Hotel and Commercial Office

Commerzbank Headquarters
Norman Foster
1997 Frankfurt Germany
Commercial Office Bank
Here are several sketches where I explored Form and Function together to develop the initial building massing. Yellow is used for Residential. Pink is used for Commercial and Green for Retail.
This scheme is an exploration of separating the residential and Commercial spaces into separate towers. This option relates well to the adjacent buildings as it places similar functions to adjacent to functions. Where this scheme fails is efficiency of the need for double the circulation for each tower. There is also a number of units that would be seen as undesirable as they look into the office tower. Privacy between the two towers is seen a problem. The rectilinear form of the Residential tower appears to maximize the perimeter wall efficiently once it clears the Commercial tower. Another concern is with having two towers from one base and design there creates a competition between the two in an undesirable dialog and competition for attention. For these reasons I feel this option is not suitable for further development.
This is the first instance of creating a form for the towers that is not rectangular. In exploring this form allows for a dialog to be generated between the towers.
The Stacked scheme interacts well within the site context of the other buildings. Allowing the building to step back at different intervals based on datum’s used from other buildings around the site and the downtown area. In addition to the defining the changes in elevations from the datum’s this also allows for function of the building as well. This plan takes full advantage of the sharing a central circulation core for the building. One disadvantage created are the extremely large floor plates for both of the commercial and residential areas of the building. The atrium spaces appears to large, while reducing the atrium will case the office tower to become out of proportion. This scheme creates a large deep canon between its neighbors of Union Pacific Railroad to the south of the site. This canon is not present anywhere else in the downtown ready. Therefore, this option has been ruled out.
Option 2 - Stacked

- Parks in the Sky
- Condo Tower
- Office Tower
- Office Podium
- Circulation Core
- Retail

Site Plan
Scale 1" = 250'

Building Program Section
This option was created by simply combined the Two Towers and Stacked type towers. This option works well with addressing the street level of placing the appropriate functions in their desired locations. This allows the Residential space to maximize the views to the park and separate access into the building. The Hybrid approach allows for the opportunity for dialog between both the Residential and Commercial areas of the building in form, shared community zone, and materials. Floor plates best suited for each function type are easily accommodated with this option. The form of the North façade is derived from I-480 as the diagram shows the angles are near parallel to each other. The other factor is the viewpoint from Abbott Drive places the building façade parallel to the viewer when they arrive to Omaha from Eppley Airfield. In the end this options appears to be the best solution to peruse to the next level.
Hybrid Form

This form came from looking at the other entry points around the site. In placing the entry points on the corner allowed to create a lobby that expanded across the building. This provided an option for the vertical circulation cores to be grouped. This movement allowed for the parking garage to fill the corner of the site which needs a rectangular space. On the opposite corner allows for a large retail space which would cater to a variety of tenants. This central lobby would create the common ground needed to tie in the parking garage and retail functions.
Angle Diagram
When looking at the Interstate in plan I saw the strong diagonal bend which makes a strong impression on the city below the elevated interstate. When driving along Abbott Drive when arriving to Omaha from the airport is a featured entry for the city. Along Abbott Drive you are directly perpendicular to the Interstate and the façade of the building when aligned with interstate. The Qwest Center roof aligns with the interstate as well. The diagram illustrates how and where the alignments occur and how the angle is derived.
Building Precedents

As the design moved away from simple form of the building, additional or new buildings types needed to be explored. These buildings provide examples of how unique elements where dealt with, whether it was simple curves to soaring overhangs to unique floor plates.

DG Bank - Headquarters

Skybridge

Highcliff
Site Plan

With the building placed on the site, grading was the next step in the process to resolve how the Parking Garage worked. With the perimeter of the building lined with Retail space the spaces must stage in elevation. The site has a seven foot of elevation change across the site. The grade change helps resolve the parking grade ramping.

Building Form Diagram

Here is a simple sketch of diagramming the language between the two functions. A movement between the two forms is created allowing the exterior in and the interior out. This diagram also illustrates façade shapes from linear to curving.
Floor Plans

Several floor plan schemes were created to resolve how the condo layouts and the inter corner of the south façade. After several studies this was the best place for the community atrium or the Parks in the Sky. Every three floors of the residential tower created one community. This pattern was repeated throughout the residential tower.
Street Level
At this point we can clearly see how the lobby functions providing access across the building. The garage is laid out. Retail units help articulate the entry points to the lobby by the recess created

Note: North is up for all plans in this document unless noted otherwise.

Podium Base
The Parking Garage has expanded over the street level retail to expand to maximize the parking condition. The commercial area is designed for and open office layout allowing future tenants flexibility.
Mid-rise Plan
The central atrium for the building is visible. I wanted to create some type of connectivity from one side to the other with ramps. These ramps would allow people to fully experience the atrium in multiple ways. At the landing or the starting points of the ramps would allow places for plants and trees to be located in creating the a large Park in the Sky.

High-rise Plan
These plans show where the Parks in the Sky occur. I wanted to make the corners of the residential tower special. These units are seen as the most marketable units. Each one provides a different dynamic view of the city to cater to different experiences.
Facade Precedents

IBM Building in Quebec by KPF
150 California St by HOK
SkyBridge by Perkins & Will
Commerzbank by Foster
Hatfield Courthouse by KPF

DG Bank HQ by KPF
Various apartment building facades
Contemporaine - Perkins & Will

ING Office by Erick van Egeraat
Highcliff & The Summit - Hong Kong
Some quick sketches I generated to explore different façades. The idea was to quickly explore the façade massing and create a compositional façade.
I used this Sketch-up model to sketch over. Each façade element is different to explore different patterns of how to treat to overall building façade. This perspective addresses the Dodge Street and the commercial spaces of the building.

This façade explores how the Parks in the Sky creates a strong vertical recess up the residential tower on the North façade. The corner explores how to create a dramatic entry into the downtown from the interstate while also defining the entry.
These are two variations of one idea look at the horizontal expressions made by the mullions. The design on the right takes more of the formal approach while the other is more informal with the gentle curves at the roof lines.
North Elevation
The South Elevation is a color study based on the final elevations design. This illustration shows two different building functions of Commercial and Residential can share common façade characteristics while maintaining separate identities.

East Building Section
The rendered sections illustrates the function of the building and how they interact with each other. This section is based off final design.
Balcony Sketches
North Elevation

This elevation explores the window treatment around the Podium of the building. The Retail has full glass walls which maximizes the amount of light in to each store but also the most window display area for the typical window shoppers. This scheme has the balconies back to back and in the center of the façade. The 14th street corner of the tower is punched out and uses a different glass pattern to accentuate the verticality of the building.
North Elevation
This is a comparative study with the previous one. The balconies are separated and staggered on the same 3 degree angle as the façade in plan view. The angled theme is carried to the corner mullion system as well.
Garage Section
This Parking Garage section thru the parking ramps illustrates how the garage works. Each parking ramp provides seven feet of elevation change. This ramp system allows to the garage system to match up with the office 14 feet floor to floor height.
Site Massing

South view from I-480

14th Street looking Northward

East Facade

Capital Avenue looking East morning sun

Looking Northeast

Capital Avenue looking East afternoon sun
Building Study Model

Capital Avenue and 14th Street

Dodge Street and 15th Street
Sectional Model

This sectional model was used to explore how the atrium balconies interact with one another. This model was useful to change floor plates around to see which pattern works best. The model allows you to visually experience the space.
Facade Precedents

IBM Building in Quebec by KPF
150 California St. by HKP
SkyBridge by Perkins & Will
Commerzbank by Foster
Hatfield Courthouse by KPF

2G Bank HQ by KPF
Various apartment building facades
Contemporene - Perkins & Will

ING Office by Erick van Egeraat

Downtown Revitalization:
Parks in the Sky

Building Section
Scale 1" = 30
Site Plan

The Concept

To establish a lively “Mixed-Use” Urban design high-rise building containing Residential, Commercial and Retail spaces centered around Parks in the Sky as the heart and Community of the Project.

The goal here is to bring in the lush green landscapes you see in suburban landscapes. Where as in a urban landscapes lush green parks are very limited because of the value of the land is so expensive where public parks provide little economic value but a lot to the social environment.
Sub Level 1
The parking is maximized on this level. The remainder of the floor is for mechanical and service needs. Tenant storage is available on this floor and Sub Level 2.

Note: North is up for all plans in this document unless noted otherwise.

Street Level
Retail stores surround the North, South and East facades. The lobby is sectioned off from one main lobby from earlier schemes. This was done for security reasons and allows the residential lobby to be on smaller scaled.
Level 2
The mezzanine level is created to accommodate for the changing grade change around the site. This allows for the Retail stores to have high volume spaces. These level allow the lobby to feel grand with its high ceilings.

Level 3 & 4
On Level 3 the main Mechanical Room is located here to allow easy access for fresh air intakes. Level 4 is the first Commercial office floor based on an open plan layout.
Level 5
Is the first level of the 15 story Atrium. The atrium creates a shared amenities between the Commercial and Residential portions of the building. A Fitness Center and Coffee Shops is located here on this floor.

Level 6
This is the first level of Residential Community. This allows the Parks in the Sky to be located right off the elevator lobby. This floor plate allows for six condo units on each tower floor. This level also has a roof garden located to the West of the Central Atrium.
Level 7
This the second level of the Residential Community. Every three levels create one Community Module. This pattern repeats up the tower.

Level 8
This is the top level of the Community Module. Each level the balcony space moves around the central atrium creating a dialog between the residential and commercial office balconies.
**Level 20**
This level is where the Sky Lounge is located where it can be rented out or used by anyone seeking a quite location to watch over the city. The green landscaped Roof Plaza allows for people to go outside and enjoy the fresh air. Mechanical is located on this level to feed the Condo units in the tower and ventilate the Atrium.

**Level 21**
This level provides a green landscaped Roof Plaza solely for the residences of the building seeking to get outdoors.

**Level 24 – 26**
These three plans show how the upper Community Module works with the addition of a condo unit. Every condo unit has a balcony. At this point every Park in the Sky has an additional balcony for everyone to share as part of their community.
Roof Level 42
This level has an Observation Deck allowing people to view the city day or night. The green roof has landscaped with shrubs and flowers around a walking path.
Condo Unit Plans

This plan illustrates how each condo unit could be designed for each resident. Each unit attempts to cater to a different set of demographics. Some units provide dynamic views back to downtown Omaha while others view the Missouri River. The floor plate is laid out to cater to the corner condo units. Typically corner units are the most marketable thus creating a reason for each unit to be different in size and number of bedrooms. These units provide a luxuriance living environment. The units range from two bedrooms to three bedrooms. In providing a mixture of sizes allows couples with families to live here and not just the "empty nester" couples.

Each of the units has 9'-6" ceilings with 6' windows on the exterior façade. Each unit has a large spacious balcony. Each unit has a fireplace some have two in them. Dinning rooms are located off the kitchen. Some kitchens have a snack bar and island. Bedrooms come with ample closet space and some have walk-in closets. Master bedrooms have a master bathroom located off the room. Every unit comes with space for full-size washer and dryers.
Parks in the Sky Community

This model illustrates how the each three floor community comes together as a whole. The floor plates have seven units in the lower portion of the tower and eight in the upper half.

The Parks in the Sky is an extension from the park to the north of the building. Typically you do not find a lot of green spaces in a urban setting. Even when one looks throughout Omaha’s downtown you only find a few parks. ConAgra’s and Gene Leahy Mall the largest of downtown parks.
Elevations

The materials of the skin vary around the building. The Retail spaces have full glass of green tint to relate to the park and the color of money. The rest of the base is made of grey granite and blue tinted punched windows. The garage has louvers spanning several parking garage floors.

The tower elevations are composed of a tan granite and glass curtainwall system. The curtainwall system has an extrude fin to wrap the façade. The residential tower has three extruded fins while the commercial has four fins. To merge the two functions from a faced point of view
I choose to use a butt-glazed window point supported window system to mediate the functions. This allows the atrium to read as if it cuts the building in to two forms in plan and in elevation. On the east façade the same glass system defines the secondary entry to the commercial lobby.

On the South façade of the residential tower the West stair has the same point supported glass curtain wall system. This is used to create a featured stair for people going to each community.
To give the high-rise a sense of identity punching out the corner of the Capital Avenue and 14th Street with an all glass curtainwall with an angled mullion system based on the same three degree angle of the floor plan. This element provided the vertical element a building of this nature needs. As one watches this building from the interstate and exits on to 14th Street you eye is taken right up the corner of the building to the sky.
Building Section
Building Model

Capital Avenue and 14th Street

15th Street
Residential Lobby Perspectives
Parks in th Sky
Final Presentations - March 2006

The Concept
To establish a lively 'Mixed-Use' urban design highrise containing Residential living and Commercial office space

Precedents
- Kindgård Trade Center - KPF
  1996 Competition
  Mixed Use of Residential, Hotel, and Office
- Commerzbank - Foster 1997
  Frankfurt, Germany
  Bank Headquarters

Downtown Revitalization:
Parks in the Sky
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