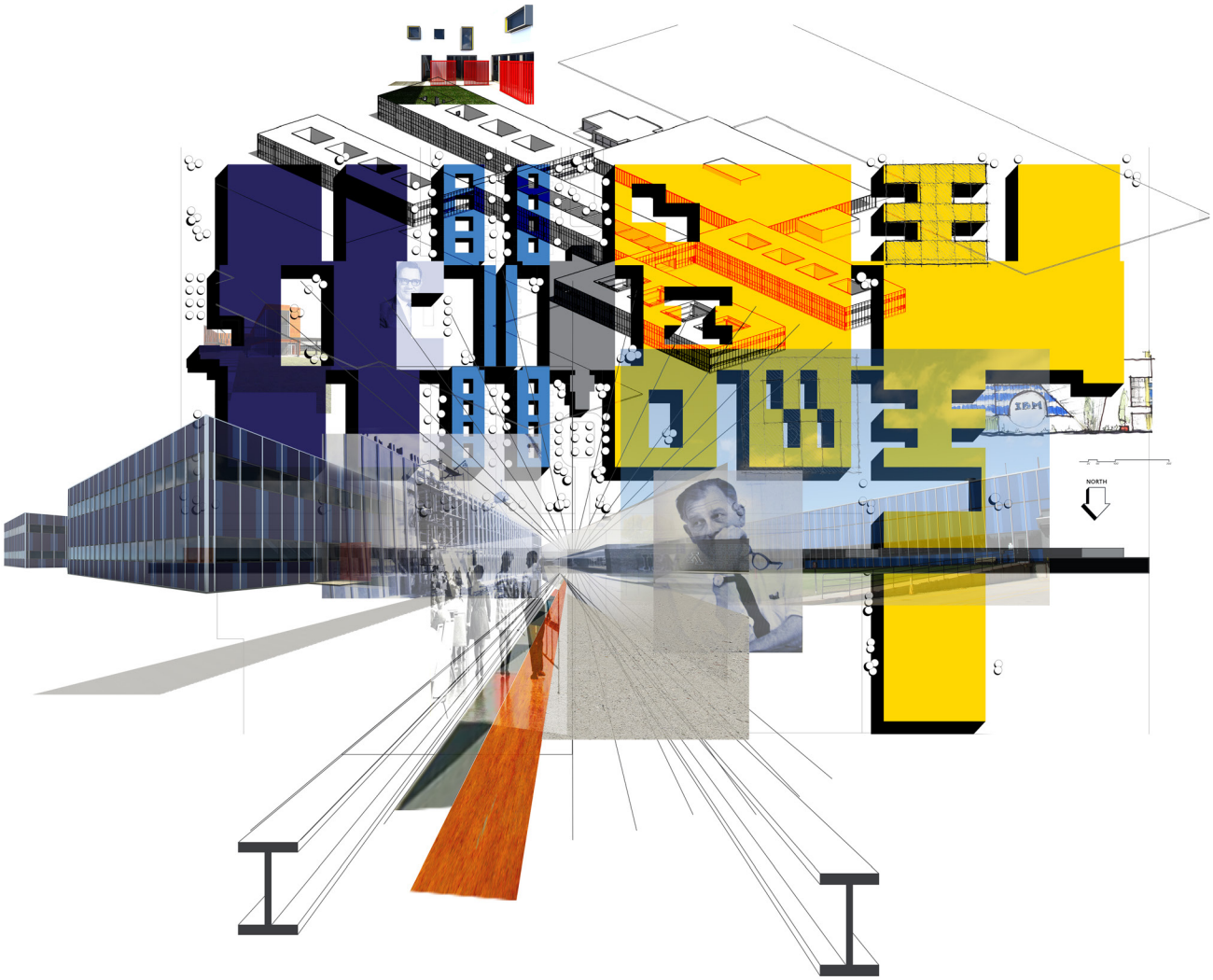
ADDITIVE + SUBTRACTIVE:

REIMAGINING THE WORK OF A MID-CENTURY MASTER



JORGEN D. BRANDT

fig 1. (cover) project elements graphic

ADDITIVE + SUBTRACTIVE: REIMAGINING THE WORK OF A MID-CENTURY MASTER

A Design Thesis Submitted to the Department of Architecture and Landscape Architecture of North Dakota State University

By

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In Partial Fulfillment of the Requirements for the Degree of Master of Architecture

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THESIS ABSTRACT

How do we build upon someone else's work in a thoughtful and meaningful way while respecting the original character of their work? The challenge is even greater when the designer and architecture are known around the world for their symbolism and innovation.

This thesis is an exploratory process in the adaptive reuse of Saarinen's iconic IBM campus in Rochester, Minnesota. It seeks to develop design ideas which suit new uses while being congruous with the existing architectural language. The size and scale of this site lends itself to additive + subjective design strategies. The iconic form provides a framework to build upon.

The ideas within are not meant to be finalized solutions but are proposals for how the IBM campus may be re-purposed. By making these suggestions, it begins a conversation on how to go about adapting Saarinen's design to suit differing needs now and in the future. Thus, through careful thought and design intervention, the over-all spirit of his original vision can be preserved.

NARRATIVE OF THE THEORETICAL ASPECT

Adaptive reuse can be challenging typology because of the sensitivities involved in working with an existing building. Those sensitivities are amplified further when modifying a building that is internationally known and significant to a specific time in history. In such situations, there needs to be even greater importance placed on careful and intentional design as it relates to the preservation of the integrity of the place.

This thesis attempts to find solutions to adapting large-scale, mid-century modern architecture, specifically that which was designed by an internationally known designer and important in an historical and social context. In an effort to preserve the overall aesthetic or 'spirit' of the existing work as it is important on several levels, the acknowledgment that by adapting a building we may not be preserving it in its entirety should not be overlooked. Making changes to the structure through aesthetics, color, materials, openings, additions or subtractions can preserve a place by making it functional for contemporary uses. This thesis encourages thoughtful and intentional design interventions that stem from extensive research into the buildings designer, history, and purpose. Only with a strong understanding of the original intent is it possible to adapt significant pieces of architectural history.

This topic is timely as mid-century buildings move within the age range for historic designations. Specifically, the chosen typology of large-scale corporate campuses is of immediate concern as the model has fallen out of favor in the corporate world. While no longer servicing the companies for which they were built, corporate complexes of the mid 20th century often have the dexterity to morph into localized 'cities' where several uses, services, or amenities can come together to serve a broad range of people.

PROJECT TYPOLOGY

The project typology is mixed use and varied based on several different use groups. With such large quantities of indoor and outdoor space stemming from the sites former use, it is logical to divide it into smaller components. Each use group will be primarily housed withing the existing built framework with some additions + subtractions in keeping with the original intended aesthetic.

The design will serve as a master plan for redevelopment of the IBM site in Rochester. By incorporating living, working, and education in one place.

PRECEDENT RESEARCH

Bell Laboratories, Holmdel, New Jersey

fig 2. bell labs exterior

In determining how best to begin a masterplan for the IBM Rochester site, I looked at another Saarinen project as a model of study. Bell Laboratories was designed by Eero Saarinen in 1957 at the height of his career.

fig 3. bell labs site plan

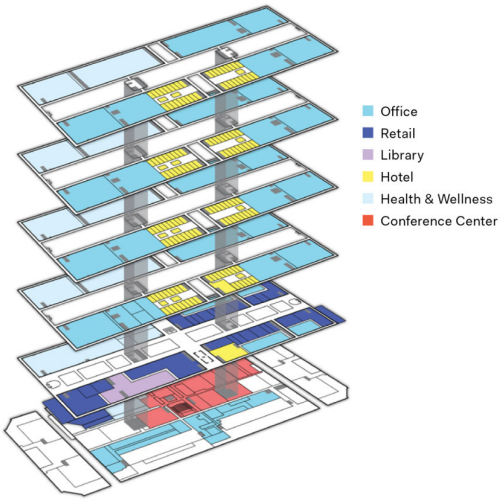


fig 4. bell labs programming diagram

History

Bell Laboratories was the scientific research center of the Bell Telephone Company, at the time America's only telephone provider. Many important scientific and technological advances were discovered here. The building, much like IBM Rochester, was designed to be a symbol of advancement in the modern age.

The building was first designed by Saarinen in 1957 at the height of his career designing suburban corporate campuses. The first phase consisted of two black mirror glass boxes set within a large Sasaki Walker designed ellipse and nestled on a sprawling 472 acres. These first buildings were completed in 1964, years after Saarinen's death. By 1966, two more matching boxes were added and further expansion in the 1980s by Kevin Roche and John Dinkeloo, who had worked in Saarinen's office, completed his vision for the site. These expansions brought the building to a massive 2 Million square feet.

Alcatel-Lucent, which became the research extension of Bell, operated within the building until 2007 when it was abandoned and in danger of being razed to make way for Multi-million dollar home development.

fig 5. bell labs workers

fig 6. interior rendering


fig 7. bell labs landscape

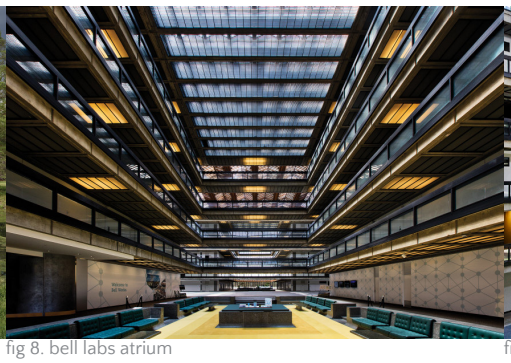


fig 8. bell labs atrium


fig 9. bell labs atrium empty

Similarities

There are many comparisons that can be draw between Bell Labs (now Bell Works) and IBM Rochester apart from the fact that they share the same designer. The two complexes were designed at roughly the same time as each other and incorporate several of the same principles; modularity, predictable expansion, adaptable space, and improved working conditions.

Like the design of IBM Rochester, the Bell Labs building was innovative for its time. It was one of the first projects to utilize mirror glass earning it the nickname "the worlds largest mirror." The interior was thoughtfully considered to revolutionize the way laboratories were designed and to improve employee comfort, productivity, and satisfaction, Because Saarinen made use of a module here, the building was able to be expanded and adapted predictably based on changing needs. The campus' park-like setting was also a prominent design feature Bell and IBM have in common. Though the Holmdel site is different in character from Rochester, both employ large areas of space for future expansion and serve as a buffer to any surrounding development. Saarinen worked with Sasaki Walker Associates here, as he had on IBM, to develop a plan for the site that would complement the architecture and provide an idyllic setting for employees and their families to enjoy. The site features, such as the distinctive ellipse drive, have been better preserved at Bell than those at IBM.

Statistics for Comparison

1. Both by Eero Saarinen
    IBM 1956-1958
    Bell, 1957-1964

2. Total square footage
    IBM 3.1 million
    Bell 2 million

3. Site acreage
    IBM 397 acres
    Bell 472 acres

4. Max employee count on site
    IBM 8,000
    Bell 6,000

5. Community size (20
    Rochester 106,769
    Holmdel 16,773

Plan for the Future

When Bell vacated the building in 2007, the architectural masterpiece was in danger of being torn down in order to redevelop the site for multi-million dollar homes. Holmdel is an affluent suburban community south of the New York City metro area that was at first opposed to transforming the building into a multi-use destination. Developers are working on schemes to show residents the positive impact adapting the Bell Works building could have on the community. Their plan calls for a multi-use program fit within the existing structure and taking care to respect as much or Saarinen's design as possible. Possible programmatic functions include; office, retail, library, heath and wellness, and a conference center. This case study serves as a basis for developing a similar solution for the IBM Rochester campus.

Conclusions

Several aspects of the Bell Works project could be used as a baseline for the adaptive reuse of IBM Rochester. I believe this to be independent of the fact that both projects are by Saarinen though this is a significant reason to save them. Careful thought and designing intentionally to both preserve and invigorate these underutilized places is necessary to ensure that these examples of architectural history are not lost. Both buildings are set on a module which allows them to be adapted to new uses and needs. Since both are architecturally significant and designed by a world renowned modernist, it especially important to make careful decisions as to how best to implement alterations while maintaining the integrity of the original design.

Both projects are designed to target millennials whose needs are different and ever changing from the generations before. This generation appreciates the benefits of many uses under one roof and the interconnectivity of work, life, and play. The opportunity for these kinds of connections at both sites makes them highly favorable candidates for adaptive reuse. It is the hope of this thesis that by offering suggestions as to how we think about this specific typology, we will be able to preserve key features of architecturally significant mid-century structures.

Elliot Noyes' Steps to Good Design

1. Fulfulls its function
2. Respects its materials
3. Is suited to method of production
4. Combines these in imaginative expression

–Elliot Noyes, IBM Director of Design

PROJECT EMPHASIS

Being that this is a mixed-use thesis project, there are several components not all of which can be thoroughly vetted out in the time allotted. Therefore, it is necessary to determine that which is most fundamental to the thesis and the furthering of its core elements. In doing so, I will be able to effectively make a case for the project and the concept of adaptive re-use as it applies to corporate mid-century architecture.

First, an emphasis throughout the projects entirety will be to maintain the IBM campus overall design aesthetic. The simplicity of forms and systems is the brainchild of modernist great Eero Saarinen. As a rule, I will endeavor to preserve the identity of the existing and, where necessary, develop solutions complimentary to Saarinen's vision plan.

A secondary, but of equal importance, emphasis will be placed on three major programmatic elements; multi-family housing, IBM/ high tech industry, and higher education. The challenge with these two uses is that they are programmed within the original nine Saarinen designed buildings which date to 1956. With the priority of keeping the original aesthetic as much as possible, these particular uses will pose the greatest distinction.

PROJECT GOALS

Good Design

1. "Fulfills its function
2. Respects its materials
3. Is suited for method of production
4. Combines these in imaginative expression"

- Eliot Noyes, steps to good design

Theoretical

To explore the adaptability of mid-century corporate architecture and the merits thereof. Also, to heighten appreciation of mid-century architecture and to contextualize it in an applicable way.

Physical

To preserve the overall aesthetic of Saarinen's IBM campus by adapting to suit a mix of uses and bringing vitality back to a largely underused place. Thus, preserving a local icon instrumental to the growth of Rochester through celebration of the past, preservation at present, and a re-imagined future.

Social

To preserve a national and local icon as a tribute to the past and a model for the future. IBM's role in shaping the Rochester community is an important part of the city's history and is closely tied to many generations of its residents. This project will seek to preserve the memories of many while adapting to suit changing needs. On a personal level, the project will preserve an institution closely tied to members of my own family who have been employed at the site throughout its 60 year history.

MAJOR PROJECT ELEMENTS

Multi-Family Housing

Multi-family housing consists of one and two bedroom units designed to fit within 5 of the existing administration buildings.

IBM Entry Pavilion

A new focused and clear entry point for IBM following their desire to consolidate to the eastern-most buildings on the site.

University of Minnesota Rochester

Masterplan with space to grow a university extension. Primary focus on experimentation with voids.

USER/CLIENT DESCRIPTION

The design is for a mixed-use development and in doing so there are many potential clients and user groups. This might be one of the greatest challenges of the design but also the most rewarding. In order to breathe new life into a place in danger of being forgotten, there must be several different activities happening in harmony.

The overall client likely would be a developer whose vision is to transform the site into a once a gain thriving community, bustling with energy. More than that though is all of the potential user groups who could benefit from such a space from high tech industry to commercial business, residential to retail, and civic and cultural entities. With all uses in place, there would likely be several clients with a wide range of needs all inhabiting the site in different ways.

For the multi-family housing aspect, the units would be targeted to young professionals, IBM temporary employees, Mayo Clinic residents or long term patients, and university students.

PROJECT JUSTIFICATION

This project is important to me in the simplest sense that it aims to preserve a piece of historic architecture by adapting it to serve different functions. More than that, it is a tradition in my family and community that I wish to see given new life through re-imagination.

My personal connection to IBM and the Rochester site stems from generations being employed there throughout the last 60 years. My grandfather was a graphic artist there beginning in 1956 when IBM first came to town. My grandmother was a loan officer at the IBM 'Think' employee credit union on site. The connection continues with my dad who in the past 33 years on site has seen many changes . This project is meaningful to me not only in the sense that it attempts to preserve a local or national icon but that it also preserves a bit a family and community history. I believe that knowing where we come from is important in guiding our future, both in architecture and in life.

Methodology

This thesis will employ a combination of research methods in an effort to explore the significance of large scale, mid-century architecture.

Descriptive Case Studies Method

The primary avenue of research for the thesis will utilize descriptive case studies to examine similar conditions and what has (or has not) been done in relation to adapting large scale buildings, further, the adaptation of mid-century modern architecture. By researching other similar projects and typologies the framework for appropriate design solutions to apply to the Rochester site will become more clear. Since the project involved that which is already built as its main focus, descriptive research can be applied to study the current conditions of the site. This research will be necessary to make judgments about the design and integrity of the site in the context of historic value and feasibility.

Design Research

The second method of research applied in this thesis is that of design research. Through design, models, and drawings I hope to contribute a unique solution for two architectural typologies; adaptive re-use/ mixed use and mid-century modern campus architecture. Design research can be difficult to quantify but at a very basic level its success will be determined on a uniquely individual basis for this particular site. Even so, the overarching principles will likely be borrowed from similar typologies and can also be applied to other projects of parallel use challenges.

Documentation of the Design Process

The design process of this thesis will consist of historical research of the site and of Saarinen, his work, and his creative process. It will also attempt to understand the motives of IBM at the time of construction and throughout the past 60 years.

A mix of media will be used to communicate design ideas including; hand sketches, physical models of site and section, digital graphics and illustrations, photographs, and digital renderings.

PLAN FOR PROCEEDING

Plan for Design Methodology

Since the design methodology for this thesis is two part, the first being research through case studies, it will be crucial to gather information on similar projects, typologies, and buildings of the same style. Having a solid understanding of what has been done in this area of adaptive reuse will allow the discovery of potential new knowledge this project can create. As each situation of adaptive reuse is different because of site specific qualities, synthesizing the research will allow me to develop new questions of this particular typology.

The design methodology will in many ways do the same as the research, only through different media. New knowledge created here will be based on drawings and modeled representations of ideas and principles applied specifically to this site. It is the hope that the resultant design may in some way serve other projects of similar constraints.

Definitions of Research Direction

Research prior to the design will focus on case studies of similar instances of adaptive reuse. Examination of the historical context of corporate campuses at the time they were built will provide a foundation for justifying the projects premise. Additional research will explore the merits of mid-century design and its suitability for reuse.

Much of the research for this thesis stems from an understanding of Saarinen and his design process. Some elements of his process will attempt to be emulated here in order to better understand his reasoning and to respectfully suggest alterations of his work.

Plan for Documenting Design Process

I plan to document the design process primarily by week and by type. Each week I will set goals for what I would like to achieve in a given facet of the research, modeling, or design. Organizing by type may prove to be more effective as it will allow me to compartmentalize all of the different components and more easily make design decisions. The design process will include case studies of similar typologies, research on historical aspects of mid-century architecture and design, and from that drawings and eventually models to explore the design aspects as they relate to the Rochester site. I anticipate front-loading the research within the first month and from there working schematically on programmatic functions and design. Models will be used as necessary to further explore the physical aspects of the new design as it relates to the existing architecture ensuring a cohesive yet distinctly current approach.

Project Schedule

The project time-line will include;

Start modeling existing buildings in Revit over break and complete by mid January.

Research primarily for the first month of the semester allowing to influence early design concept sketches/ models. Though focused heavily in the beginning, research will likely be an ongoing process.

Design will start coincidentally with research and continue through mid-semester reviews.

Proceeding reviews, design refinement and presentation graphics generated.

Final documentation and graphics synthesized into a cohesive presentation format.

PROJECT SCHEDULE

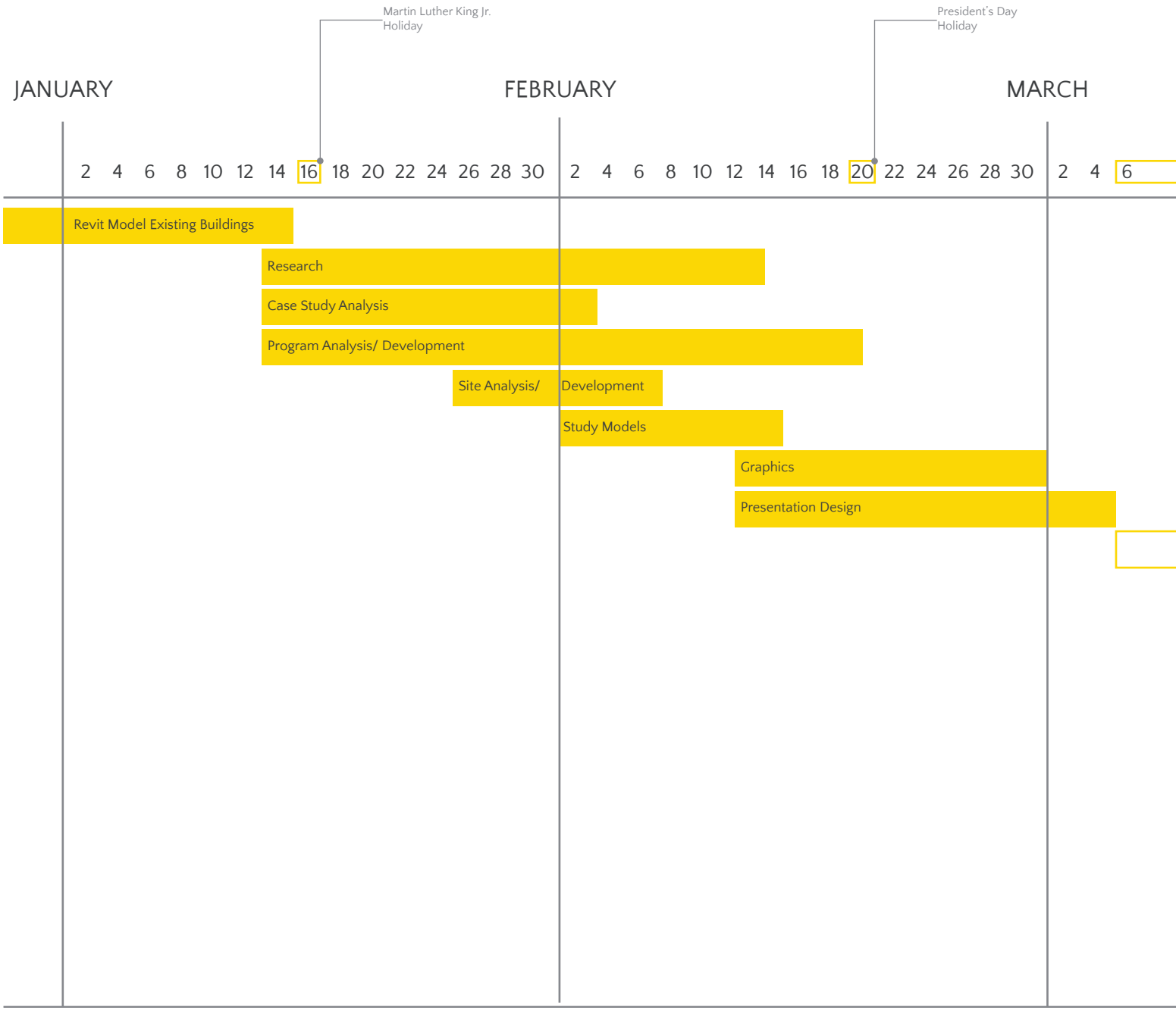
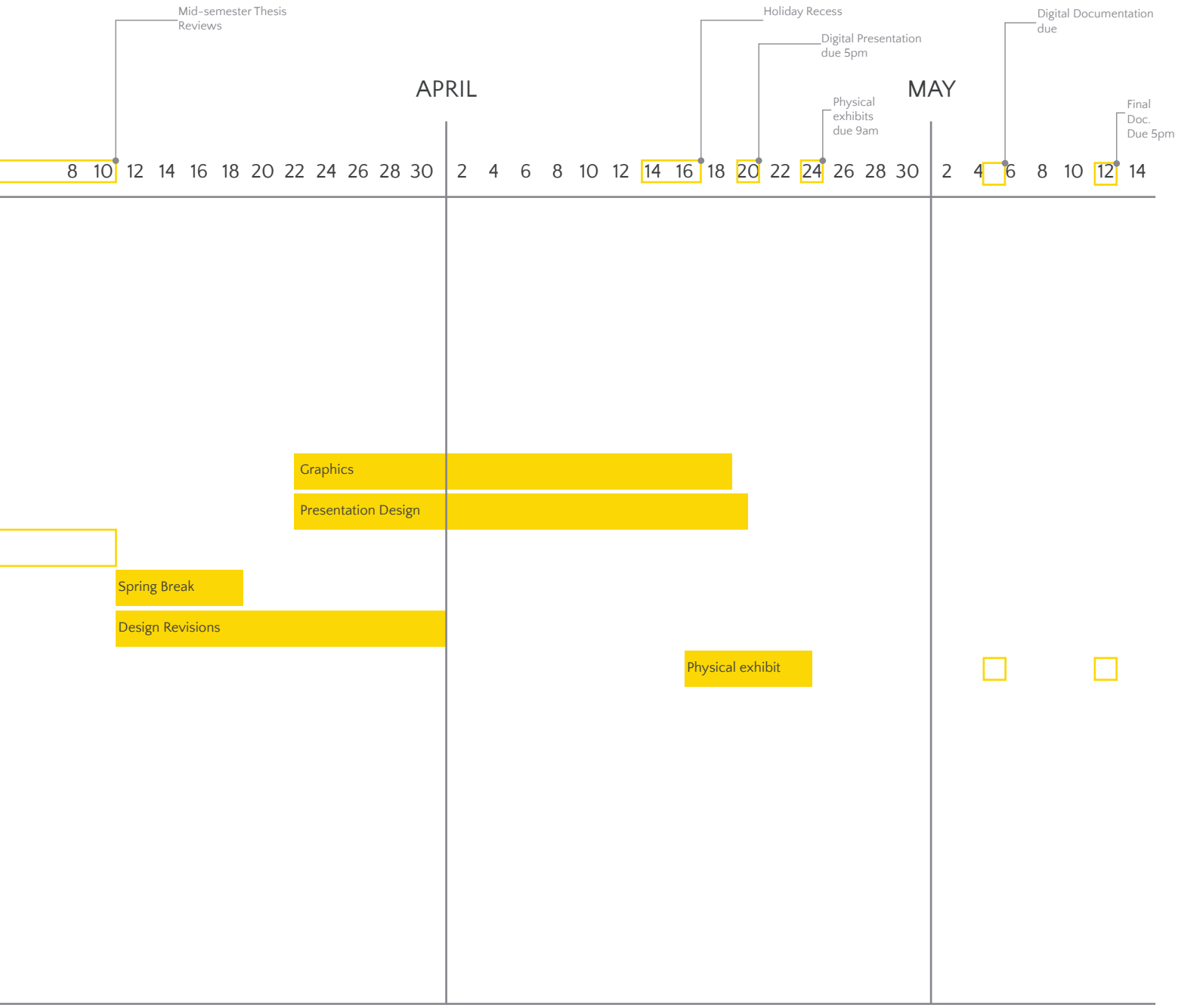


fig 10, project schedule diagram


Mid-semester Thesis Reviews
Holiday Recess
Digital Presentation due 5pm
Digital Documentation due
Physical exhibits due 9am
Final Doc. Due 5pm
APRIL
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8 10 12 14 16 18 20 22 24 26 28 30 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 2 4 6 8 10 12 14
Graphics
Presentation Design
Spring Break
Design Revisions
Physical exhibit

ADAPTIVE REUSE RESEARCH DOCUMENT

"The practice of Adaptive Reuse is often related to a profound socioeconomic shift; specifically, it implies the abandonment or decommissioning of an industrial, economic or social system, and its relative structures, and experimentation with new models for growth (Camocini & Rebaglio, n.d., p. 1). A common cause of large scale buildings being underutilized is a discrepancy between current needs of a buildings' users and a buildings' original intended purpose. Massive mid-century modern structures, particularly, are a trending obsolescence as the changing socio-economic needs of people and corporations have evolved. By adapting these existing structures, some of which are of significant historic and cultural value, places representing cutting edge design and innovation can be preserved by adapting to suit the needs of a new era. In order to understand the benefits of adaptive reuse, as it relates to large scale mid-century modern architecture, we must first consider some background on how these places came to exist as we know them. Then, it is necessary to consider the worthiness of preserving modern buildings by changing them to suit needs differing from that of their original intended purpose. In doing so, there are problems and challenges associated with adapting massive facilities to make them better scaled for todays' practices. And lastly, the economic and environmental benefits associated with adapting and reusing existing structures in the current market.

Historical Background

Mid-century modern is a term coined by Cara Greenberg in the 1980s in describing heightened interest in furniture from the mid twentieth century (Fenton, 2015). The term encompasses the period between 1933 and 1965 in architecture and design, though the pinnacle of the style came about in the 1950s. Innovations in materials and assemblies brought about a radical change in the design of large corporate architecture as well as single family residences. As with any style, it has been in and out of vogue since its introduction. Today there is a resurging interest in mid-century modern design stemming from the periods' clean lines and sense of timelessness.

In the middle of the 20th century, corporate America was experiencing rapid post war growth. Massive new corporate headquarters, manufacturing facilities, and research centers were built across the country. There were several reasons for companies to diversify and decentralize as they grew. With communication technologies of the time being what they were, it was of great importance for many companies to be located near where they marketed and sold products and services. Many of the industry leaders were experimenting with the latest innovative technologies. To show that they were on the cutting edge of advancing technology it only made sense that these companies embraced the modern design as a means of company identity. In efforts to establish themselves as innovative or forward thinking, companies sought out designs for their new locations that would model the progress of the time. (Engwall, 2006)

Modernist architecture was particularly well suited to the corporate campus model (Kerr, Robinson, & Elliott, 2016). The typical small footprint high rise model, which had been employed since the end of the 19th century, was no longer applicable to the changing needs of industrial production, research, and development. Many companies hired leading modernist designers to create a new vision for an industrial age that would be in line with a more modern image. Corporate architecture during this time was as much

about function and efficiency as it was about a company's public image. Kerr, Robinson, & Elliott used the following quote from Gordon Bunshaft, a leading modernist campus designer employed by SOM, to describe the new layout of corporate design: "In contrast, the corporate campus, conceived as a 'horizontal' skyscraper (Bunshaft 1990) with communal areas for socialization, set in a natural or landscaped 'pastoral' environment" (Kerr et al., 2016, p. 130). What Bunshaft meant by this is that the campus model aimed to serve both employees and companies better through an almost city like sprawling complex. These ideas demonstrate the general post war American ideals and serve as a reminder of a highly prosperous time. Several examples of the 'horizontal skyscraper' were produced for some of the nation's largest industry leaders such as IBM, Bell Labs, John Deer and others. Kerr, Robinson, & Elliott further expand the idea of corporate campuses from the mid twentieth century in this excerpt from "Modernism, Postmodernism, and corporate power: historicizing the architectural typology of the corporate campus:"

"*Both the Rochester and Yorktown buildings were intended to encourage 'mobility between academia, government, and industry' (Albrecht 2006, 53), as was Saarinen's fourth research centre, Bell Labs. This also featured curtain walls (in effect a vast reflecting mirror) and a lake, while a transistor-shaped tower symbolized the Labs' key contribution to the invention of the transistor (Pelkonen and Albrecht 2006). These exurban campus complexes were described at the time as the 'Versailles of industry' (Life 1956), thus equating symbols of US corporate power with the greatest architectural symbol of the absolute monarchical power (Kerr et al., 2016, p. 132)."*

Adaptive Reuse

What is adaptive reuse? "Adaptive reuse refers to the process of reusing an old site or building for a purpose other than that for which it was built or designed" (Davenport, 2012). This is a definition echoed many times over when discussing the preservation of old buildings. Adaptive reuse is a term widely circulated in the architecture community in regards to buildings of significant or historic nature and their life after their original intended use. Most often the repurposing of historic places has applied primarily to early 20th century and older buildings. That being said, there is a new genre to be considered; mid-century modern structures. In a distinctly different class and time than their commonly retrofitted counterparts, mid-century designs have been overlooked and undervalued, that is, until recently. With growing interest in mid-century furniture and design, it is only fitting that we begin to consider architecture of that period worthy of rescue and reconstitution. It should be noted that adaptive reuse is not to be confused with historic preservation though the two are often simultaneous and intimately connected. Adaptive reuse is in fact more versatile, less restricting, and often a more economically feasible option for ensuring the futures of the built past (Ozik, 2006). McLaughlin utilized this quote from David Woodcock to further illustrate the key difference that sets adaptive reuse apart, "[t]he museum approach to historic preservation, while appropriate in some cases, will not work as a general pattern. Change is an inevitable part of life and it should be celebrated rather than regretted" (McLaughlin, 2008, p. 9)

In the years since urban renewal tattered the historic fabric of cities across America, there has been a strong interest in the preservation and reuse of the remaining historic architecture. But a new question is upon us, what to do with mid-century

modern structures just on the cusp of what is considered historic and how to we use or reuse them in order to ensure their survival? With industry and business booming the middle of the last century, there was significant strides in advancing architecture and design. Today, companies more often are influenced by investors and shareholders who are concerned with profit over preservation (Emerson, 1999). Unfortunate as it may be, the way business is conducted in the United States has changed drastically in the last 50 years. What sets large scale corporate mid-century design apart, beyond its avant-garde style, is that it harkens back to a time of immense prosperity and growth. Today, businesses are moving toward less and less being an owner of large campuses but rather selling those campuses and leasing back only the space they need (M. Carlson, personal communication, October 7, 2016). This is a way of reducing overhead and unused space while also diversifying the types of professional sharing common spaces. Off-shoring, declines in production, and changing markets have shifted the needs for many businesses resulting in massive compounds sitting empty or underutilized (Kerr, Robinson, & Elliott, 2016). By creatively adapting these structures to suit modern needs and uses, we can both save and preserve the past while simultaneously moving forward.

Large Scale Structures

Large commercial structures have the potential through rehabilitation and reuse to reduce several negative side effects of the under-utilized built environment. Urban sprawl, a concept ironically perpetuated by the very building this paper addresses, can in effect be managed or reduced by finding new uses for existing large scale corporate structures (McLaughlin, 2008). Massive corporate edifices that have outlived their original use are in perfect position to be converted into multi-use, diverse communities. These large scale buildings sitting empty can have negative effects on communities. McLaughlin points out that beyond the potential loss of jobs, communities are burdened with the maintenance and empty commercial space left behind when big-box stores have become obsolete. Similar effects can be felt with large scale corporate campuses which today have downsized to only occupy portions of their original footprints. The most drastic results of corporate downsizing in the humanistic sense are the jobs lost, thus affecting large sectors of community populations. Adaptively reusing large scale, mid-century campuses has the potential added value of boosting a struggling local economy while preserving mid twentieth century icons.

Worthiness of Reuse

What is it that makes large mid-century buildings good candidates for re-purposing? Christopher Smith of the University of Texas at Austin explains that, "These industrial buildings are highly adaptable. Given that they were built to house large scale processing systems and industrial machinery, they provide vast spaces within their interiors to be adapted for various uses" (Smith, n.d.). Smith is referring to the large expanses of open floor space typically found in facilities that focused on manufacturing technologies. Mid-century modern design is inherently good for re-purposing because it tends to be modular in structure and form, often strongly tied to standard geometry.

Another component when considering worthiness of reuse as opposed to demolition and new construction is age. When considering the historic significance of a building, age plays a key role and is one of the reasons why mid-century design has been so overlooked in the past. The standard minimum age for a building to qualify for historic designation and protection is 50

years ("Preservation Spotlight: Michael Bjornberg | HGA).

Mid-century buildings have just recently started to be within the age range for historic designation. Unfortunately, in the time between construction and qualifying for historic status, many have been lost. Complications arise when connecting corporate architecture of the period with historical designations, in that, companies may prefer not to have their buildings listed on historic registers as to limit their ability to make changes to the structures. Vanessa Morehead says in her graduate thesis, "even some preservationists have difficulty in valuing newer modernist structures because they feel that they have not had time to gain significance. Further, because modernist structures sit within the suburban landscape and quite often occupy large tracts of land, the property on which these [buildings] sit represents a greater perceived commodity than the [buildings] themselves" (Morehead, 2010). The reality is that corporations, though they may own significant works of iconic and uniquely American design, are not real estate companies and are not interested so much in the authentic preservation of modernism as they are function and profitability (Emerson, 1999).

Problems

Adaptive reuse is only one of many possible solutions that can be used for preserving our built history (Bond, 2011). It is not without its issues which must be considered in any project dealing with historically significant property. Often, it is necessary to employ multiple strategies in tandem. Though there are many benefits associated with adaptive reuse, there are also some problems resultant from urban reinvestment (McMullen, 2016). In cases of industrial or inner city sites, adaptive change and improvements can also bring about increased land values and taxation which has the potential to prohibitive for a neighborhoods current residents. Gentrification is a double edged sword that comes with the territory of reinvesting in our past built environment. McMullen adds that adaptive reuse of historic properties often requires highly skilled labor thus adding costs to projects beyond that of normal new construction (McMullen, 2016).

To make adaptive reuse work there needs to be financial benefit in doing so. In many cases it is developers and investors who supply the vision and capital to undertake such projects and beyond the noble efforts of saving and preserving history is to bottom line. Specifically, in the case of mid-century industrial or corporate structures, the large scale open spaces present a unique challenge of both great flexibility and difficulty in terms of sectioning off large volumes of space. Large square footage can be daunting and overwhelming to re-purpose requiring careful thought and assessment.

Economic Impact

Unused and abandoned buildings are in several ways a blight to communities. Loss of jobs is just one factor tied to empty industrial real estate. When businesses, either large corporations or big box retailers, close their doors it often impacts local economies in the process. Adapting large scale structures into several new uses has the potential to put people back to work both short and long term. Short term employment as a result of adaptive rehabilitation is labor relating to the According to Cantell, one of the key factors cited by developers in feasibility of adaptive reuse of large scale projects is the inclusion of residential units within the projects' program (Cantell, 2005, p. 3). Residential components are thus a way of offsetting the high costs associated with large scale reuse. This is not to say that residential is to be included in every project but, when appropriate, can be a catalyst for project

financing. Adaptive reuse has numerous positive impacts including higher property values, long tern job potential, and less burden on local governments (McMullen, 2016, pp. 7–8).

Environmental Impact

One of the basic tenants of adaptive reuse is its potential as a more sustainable option to new construction. By using existing buildings and infrastructure, environmental savings can be made in the form of land use and embodied energy (McMullen, 2016, p. 6). Urban reuse projects have the advantage of existing roadways and utilities reducing the amount of materials and energy needed for these services as compared to newly constructed buildings. McMullen offers a statistic from the Preservation Alliance of Minnesota 2013 that 4,000 tons of demolition waste/ 50,000 sf of space can be saved by reusing materials in existing structures. This significant reduction helps reduce the amount of demolition waste sent to landfills. In doing so, projects can gain points for certification standards like LEED for sustainability measures.

Social Impact

In the social context, adaptive reuse plays a role in preserving landmarks which communities have identified with for years. Mid-century structures represent a period of time in American history of great economic growth and industry. Bond maintains that "historic downtowns" give people something to connect with in their communities, a "sense of place" (Bond, 2011, p. 5). Adaptive reuse of buildings of different eras helps to maintain aspects of community identity. For the communities where large mid-century corporate campuses were built, these buildings serve as icons of the recent past. Many people will still identify with mid-mod giants seeing them as key to their community identity.

Cantell discusses the social impact of adaptive reuse in terms of quantifiable factors; solutions to vandalism, alleviation of public financial burden, and increased tax values (Cantell, 2005, p. 5). By investing in historic structures and bringing people and businesses back, the surrounding neighborhood will often benefit and thrive. Abandonment is a much a psychological issue as it is physical. An area fallen into disrepair indicates a lack of concern and feelings of danger. When buildings are left to crumble, so too does the neighborhood fabric.

Conclusion

Adaptive reuse of existing large scale mid-century structures is important to the preservation and commemoration of post-war American ingenuity. These structures were built to align with 'modern' business practices, experiment with new methods, increase worker productivity, and express corporate identity through forward thinking design (Kerr et al., 2016, p. 132). McLaughlin uses the words of David Woodcock saying "change is an inevitable… [and] should be celebrated rather than regretted" to describe how adaptive reuse, as a tool for historic preservation, is able to use the past to look toward the future (McLaughlin, 2008). This should be the goal of adaptive reuse, to preserve the existing past by giving it new life.

ANNOTATED BIBLIOGRAPHY

Bond, C. (2011). Adaptive reuse: Explaining collaborations within a complex process. Department of Planning, Public Policy & Management, University of Oregon. Retrieved from https://scholarsbank.uoregon.edu/xmlui/handle/1794/11680

In this document, Bond aims to inform readers on the many different players when it comes to adaptive reuse. She describes some of the complicated issues of rehabilitating historic structures and the many different groups that have a hand in the process. First, the author provides background information on what adaptive reuse is and how it has historically been applied. Bond notes that adaptive reuse can be a difficult process because of the many different people, groups, considerations, and restrictions involved. It is her hope that this document is helpful to those considering an adaptive reuse project or who seek information on to best navigate its challenges. She also provides several case studies where adaptive reuse has been employed to help save and preserve historic structures. The document ends some best practices for adaptive reuse based on Bond's research and case studies.

Camocini, B., & Rebaglio, A. (n.d.). Restoration Economy, 1.

The introduction of this document contains information on the history and importance of adaptive reuse. It gives a brief background on the subject how the repurposing of large structures is growing in popularity in recent years. The main body of the article is a case study of a former textile factory in Poland which has been turned into a hotel.

Cantell, S. F. (2005). The adaptive reuse of historic industrial buildings: regulation barriers, best practices and case studies. Virginia Polytechnic Institute and State University. Retrieved from http://sig.urbanismosevilla.org/Sevilla.art/SevLab/r001US1_files/r001_US_1.pdf

Cantell's paper gives detailed information on several major topics associated with adaptive reuse. She begins with and overview of what adaptive reuse is and its importance, especially within the context of large industrial projects. Then she covers potential factors that my complicate the adaptive reuse process. There is a range of issues covered from the importance of preserving historical building and making them useful once again to social and environmental issues and benefits associated with reuse projects. She also provides a series of case studies as well as best practice standards outlined by the Secretary of the Interior in regards to work on historic properties.

Davenport, G. (2012, January 12). Embracing Adaptive Reuse – DesignIntelligence. Retrieved October 11, 2016, from http://www.di.net/articles/embracing_adaptive_reuse/

This post from Design Intelligence spotlights the growing interest in adaptive reuse. They outline what reuse is and how it is being applied today. The article provides several great examples of larger scale buildings across the United States which have been converted to serve different purposes. The author builds the case for reusing existing buildings and explains what makes it prudent to do so.

Emerson, D. (1999). Edifice complex passe. Plants, Sites and Parks, 26(2), 16–20.

Edifice complex explains the shift in corporate architecture from monuments to industrial egos to more "form follows function approaches," a term popularized in the 1890's by Louis Sullivan. It follows projects by different firms across the country who, together with their corporate clients, are embracing scaled back designs that focus more on the comfort of the majority and less on special distinction for only the upper echelon. The authors make the point that though modern corporate architecture may not be as "flashy" or make a socioeconomic/political statement, designs are still well thought out and high quality.

Engwall, L. (2006). Corporate Architecture in Finland in the 1940s and 1950s: Factory Building as Architecture, Investment and Image (review). Enterprise & Society, 7(3), 616–618.

This work discusses the significance of industrial buildings in Finland. It highlights how mid-20th century industry is an icon of our past. Moreover it is a narrative on the potential social importance of these structures which serve as symbols of another time. They have become, in some instances, a corporate image.

Fenton, L. (2015, April 8). Why The World Is Obsessed With Midcentury Modern Design. Retrieved October 11, 2016, from http://www.curbed.com/2015/4/8/9973300/why-everyone-is-obsessed-with-midcentury-modern-design

Curbed recently published this article online relating to the renewed interest in mid-mod design primarily as it relates to furniture of the period. The author gives readers a history of mic-century architecture and furnishings as well as describes varied public perception. There have been times in the last 50 years where mid-century modern has been in and out of fashion but seems to be making another comeback, in large part to its clean lines and somehow timeless feel.

Kerr, R., Robinson, S. K., & Elliott, C. (2016a). Modernism, Postmodernism, and corporate power: historicizing the architectural typology of the corporate campus. Management & Organizational History, 11(2), 123–146. https://doi.org/10.1080/17449359.2016.1141690

This paper was extremely helpful in researching mid-century corporate designs history. All of the key players and their works are described in detail with significant content relating to my thesis project. The researchers have put an emphasis on the role mid-century corporate architecture plays in the social context. Adapting and preserving it is important to retaining a part of American history. It also outlines how architecture of the 50s and 60s was a key component of corporate image which in the process helped further innovative design.

McLaughlin, S. B. (2008, January 1). Large Scale Adaptive Re-Use: An Alternative to BigBox Sprawl. Retrieved from http://repository.upenn.edu/hp_theses/

In McLaughlin's thesis, she tackles the issue of large scale corporate abandonment and what the possibilities are for giving them new life. Her specific purpose is the issue of sprawl as it relates to large scale unused places while examining the positive and negative effects. Covered in the document are issues of identity and place, economy, and social factors associated with adaptive reuse of large scale projects.

McMullen, M. (2016). Sears, Roebuck & Company Warehouse Buildings: A Comparative Study in Large-Scale Adaptive Reuse. Retrieved from https://smartech.gatech.edu/handle/1853/55161

McMullen gives an overview of large scale adaptive reuse as well as key statistics and points of view on the major issues of large scale adaptive reuse. She provides extensive case studies and documentation of the nationwide conversion and repurposing of several former Sears & Roebuck warehouses.

Morehead, V. J. (2010). Conserving America's recent past heritage: The mid-century modern rehabilitation process (M.S.). The University of North Carolina at Greensboro, United States -- North Carolina. Retrieved from http://search.proquest.com.ezproxy.lib.ndsu.nodak.edu/docview/366386695/abstract/36EECB45696A442EPQ/1

Morehead's work focuses on the preservation on mid-century residential design. A large portion is devoted to explaining why mid-century and the recent past are worthy of being considered for preservation and adaptation. She discusses the materiality of the period and the now know issues that surround it but also addresses the significance of the style in terms of architectural advancement.

Ozik, D. (2006). Reinvention through reuse : strategies for the adaptive reuse of large-scale buildings (Thesis). Massachusetts Institute of Technology. Retrieved from http://dspace.mit.edu/handle/1721.1/37578

I found this thesis of particular interest because it addresses large scale adaptive reuse. Ozik discusses the evolution of adaptive reuse, its importance, and how it manifests today. The intent is to bring understanding to the importance of adaptive reuse in the social and economic context.

Preservation Spotlight: Michael Bjornberg | HGA. (n.d.). Retrieved October 11, 2016, from https://hga.com/media/publications/preservation-spotlight-michael-bjornberg

Michael Bjornberg is an architect with HGA Architects in Minneapolis, Minnesota. He has expertise in the fields of historic preservation and adaptive reuse. In this spotlight, Bjornberg talks about the often overlooked mid-century architecture and the importance of preserving it. The article addresses questions from 'what is mid-century architecture?' to ' why is it important?' and 'How can it be preserved?' This short Q&A offers some interesting insight into a relatively new sector of preservation architecture.

Smith, C. (n.d.). The Adaptive Reuse of Industrial Buildings. The University of Texas at Austin School of Architecture Center for Sustainable Development. Retrieved from https://soa.utexas.edu/sites/default/disk/munich_papers/munich_papers/10_02_su_smith_christopher.pdf

In his paper, Smith discusses a bygone area of America's industrial past. He highlights the merits of repurposing industrial buildings and what makes them so well suited for adaptive reuse. This document covers many critical aspects of reuse including creative vision for historic places and the measures that need to be employed. Also covered is the value that rehabilitation and reuse can have on cities and communities.

PRECEDENT ANALYSIS

One way to proceed with planning a large scale adaptive reuse project is to look to other instances of similar typology. The following case studies examine elements of large scale industrial buildings which have been modified or re-purposed. These serve as guides for possible programming and design elements which can be incorporated at the IBM Rochester site. The selected studies are important not only for historic purposes but for their context within the social realm as well. Each example is a unique way of preserving the past while transforming the site for future use.

It is important to note that these studies are of buildings outside of the United States and are generally predating the IBM Rochester campus. They do still embody the basic principles of adaptive reuse as it applies to large scale industrial structures.

fig 11, docks malraux

DOCKS MALRAUX

Strasbourg, France

Conclusions

The original building was built in the 1930s and is a defining place for the city of Strasbourg. The adaptive reuse of the building seeks to pay tribute to its industrial past while transforming it in to a multi-use center. The large steel addition of three upper levels on top of the existing structure drew inspiration from the surrounding docks while keeping with the already established rhythm of the brick and concrete. One of the challenges relating to the reuse of IBM Rochester is the potential for many different uses within the same structure. This buildings program consists of many diverse uses from retail, dining, and office space to high performing residential units. It was important to maintain the buildings exterior aesthetic while accommodating all of these different functions within the existing confines.

fig 12,
tasmania school of
architecture + design

SCHOOL OF ARCHITECTURE AND DESIGN

University of Tasmania

Conclusions

Originally a diesel workshop, built in the 1950s at the Inveresk Railyards, the building accommodates the needs of the architecture school by allowing for flexible, reconfigurable spaces within its large open expanses. The reuse of the space payed careful attention to the schools philosophy of 'design through making.' Because the building is located within a designated historic district, the architectural features of the existing building were maintained. Additions are in keeping with the original style while being distinctly modern in materiality and appearance. I intend to use this idea with the IBM campus by retaining as much of the historic Saarinen designed facades while incorporating new designs of complementing materiality in a distinctly contemporary way.

fig 13, zollverein coal mine, essen germany

ZOLLVEREIN

Essen, Germany

Conclusions

Zollverein is a former coal mine located in Essen Germany. It relates to my thesis project in that is a grouping of large structures designed in the Bauhaus Style and has been remarkably preserved. The architectural significance and preservation from the exterior earned Zollverein UNESCO World Heritage Site status since 2001. Mining operations at Zollverein began in the 1850s and ended on December 23, 1983. Similar to the IBM campus in Rochester, Zollverein is a remnant of the cities industrial past. When the mine closed, the economic impacts were devastating for the Essen community who for the last nearly 150 years had been one of Germany's largest coal mining regions. The preservation of this local and nation icon has many parallels to IBM Rochester that I will draw on in my design for reuse. Having actually visited Zollverein, I can tell that it is significant not only architecturally but also within the social context.

PROGRAM

Programming for the IBM campus consists of three main uses. Because of the logical layout of form and space, the program easily fits linearly along the east/west axis. The three main uses include; a consolidated IBM in the east, multi-family residential in the center, and designation for a technology focused extension of the University of Minnesota -Rochester west of the central pavilion.

It should be noted that this is just one possible programming scenario and is not intended as a final solution but simply and idea to spark conversation.

The three uses are bridged in the middle via the central pavilion (currently the IBM entry and cafeteria), and an area designated as shared amenities for all three programmatic functions. Though these serve as connections, in an alternate scenario, the program could become even more interconnected by utilizing the existing hallways which span the length of the buildings from east to west at both the north and south boundaries of the middle set of buildings.

The diagrams on the following page are representative of the programming process I used. The program functions were narrowed down in scope and adjusted based on research of city needs and on discussions with advisors.

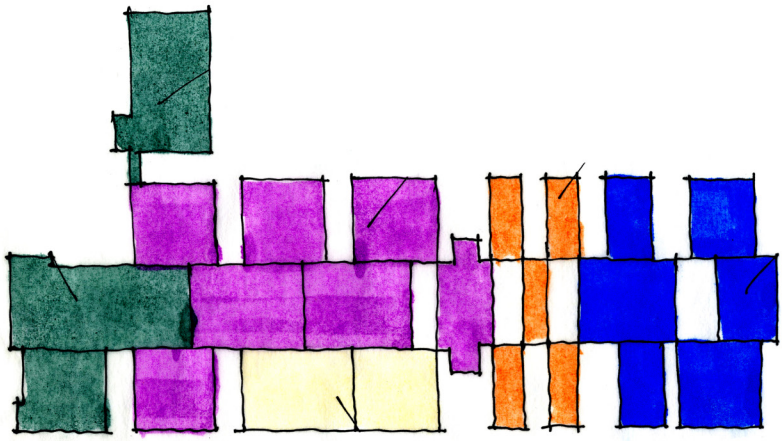


fig 14, initial programming sketch

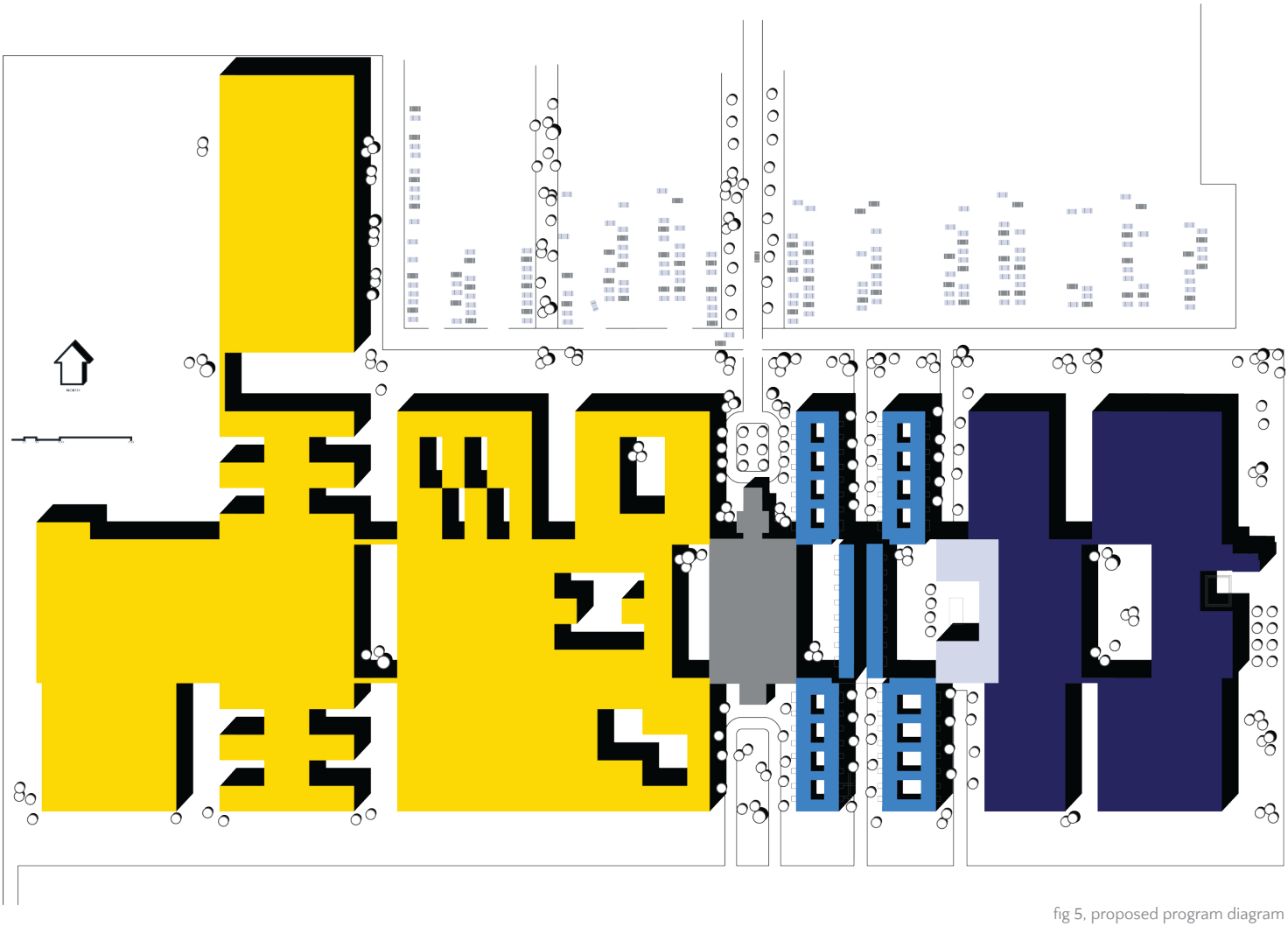


fig 5, proposed program diagram

SITE ANALYSIS

Selecting the appropriate site is crucial to the success of any project. The IBM Rochester site is different from the that of newly constructed places given its 60 year history. Earth was first moved in 1956 when the location, just off highway 52 in northwest Rochester, was barely within the city's limits. Though the city has now expanded well beyond, the site is recognizable and established. What once was open farmland is now acres of paved surface parking and manicured lawns though a portion of the over 300 acres remains in use for agricultural production. Existing structures total over 3.1 million square feet of space including offices, manufacturing warehouses, and a power station. Native prairie grasses and plants serve as buffer between the highway and the expanses of green lawn and buildings beyond. Recreational facilities such as tennis courts, park pavilions, and walking paths are also found throughout the campus. Access to the Douglas Trail bike path is adjacent to the NW corner of the site.

Original landscaping of the campus was done by Sasaki Walker & Associates in conjunction with Eero Saarinen's office. The design echoed the strong but simple geometric forms of the buildings. Much, if not all, of the original design has been changed throughout the years as the campus grew and maintenance became an issue. Some courtyards between buildings have been recently remodeled in the past 15 years for better functionality and necessary accessibility updates.

fig 16, IBM site plan

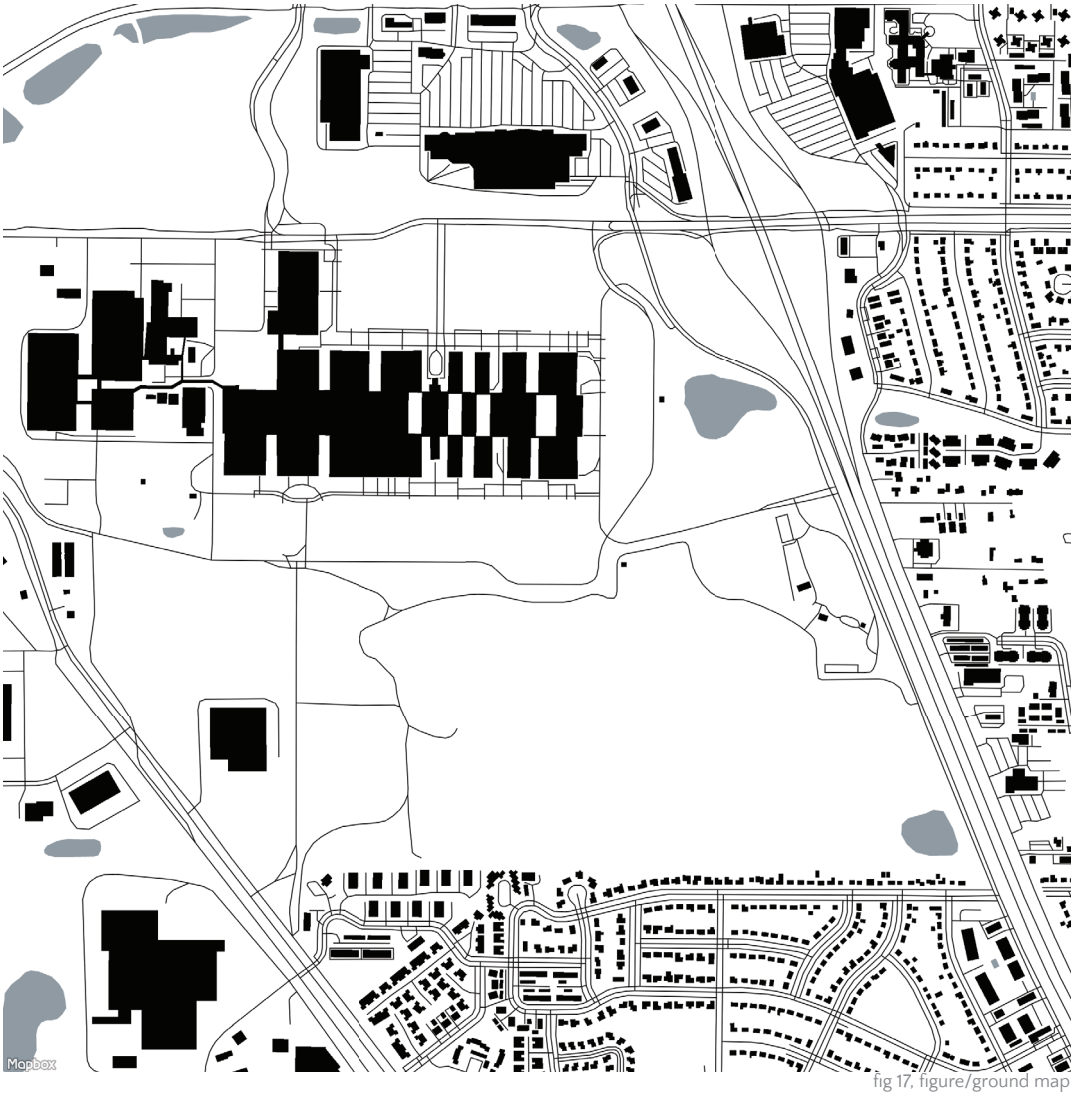


fig 17, figure/ground map

Figure Ground/ Site

The site is unique in a couple of ways. First, it is very large. Much of the land is open with areas of manicured lawn and prairie grasses. The southern edges are used as agricultural fields. Within the very expansive site are parks and recreation facilities for IBM employees. A second unique characteristic is the presence of existing buildings. Since this is an adaptive reuse site, the existing buildings and infrastructure are especially important. I anticipate that the design will stay within the confines of the existing built environment and will not necessitate the use of additional unbuilt upon land.

fig 18, major topography

Topography

The topography of the site is relatively flat on the northern half where the existing buildings are located. Significant grade work had been done when the buildings were first built. Alterations to the landscape have happened over the years as additional buildings and parking lots were constructed. The southern portion of the site is slightly hilly and is currently used as farmland. A small hill, covered in trees and grasses, separates the IBM complex from the fields. Between the two are also several recreation facilities including tennis courts, playgrounds, and a picnic shelter. The fields are slightly hilly sloping down to the neighboring residential development.

fig 19, IBM buildings

Parking

Because the site at its peak employed some 8,000 people, there are extensive paved parking areas which are now underutilized. The amount of existing parking is much more than needed and I will aim to reduce the amount of outdoor paved space. Because of the nature of some existing structures, there is great opportunity for indoor parking facilities thus reducing the need for so much exterior, non permeable paved areas. These large parking lots could be transformed back into natural grasslands or park like areas serving as a buffer between the buildings and the nearby highway.


fig 20, IBM buildings with prairie grasses


fig 21, original bench


fig 22, courtyard cafeteria west

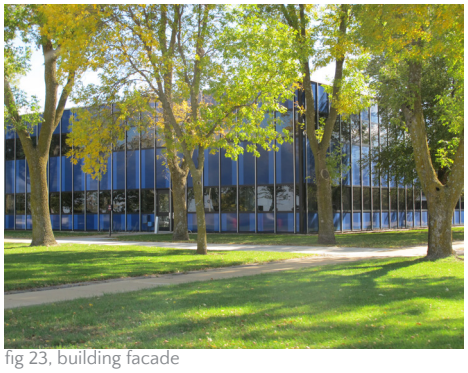


fig 23, building facade


fig 24, south facade


fig 25, tennis courts


fig 26, courtyard lobby loop west

fig 27, view between administration buildings


fig 28, courtyard cafeteria east

fig 29, courtyard cafeteria west

fig 30, facade with mullions

"I have come to the conviction that once one embarks on a concept for a building, this concept has to be exaggerated and overstated and repeated in every part of its interior so that wherever you are, inside or outside, the building sings with the same message." –Eero Saarinen

2 OBJECTIVES

"The architect's primary objectives in the manufacturing administrative and educational plant for International Business Machines at Rochester were two fold: one, to provide an orderly scheme of growth, and two, to create harmonious and efficient working conditions. It was with these objectives in mind that the buildings were designed."

–Rochester Post Bulletin, September 27, 1958

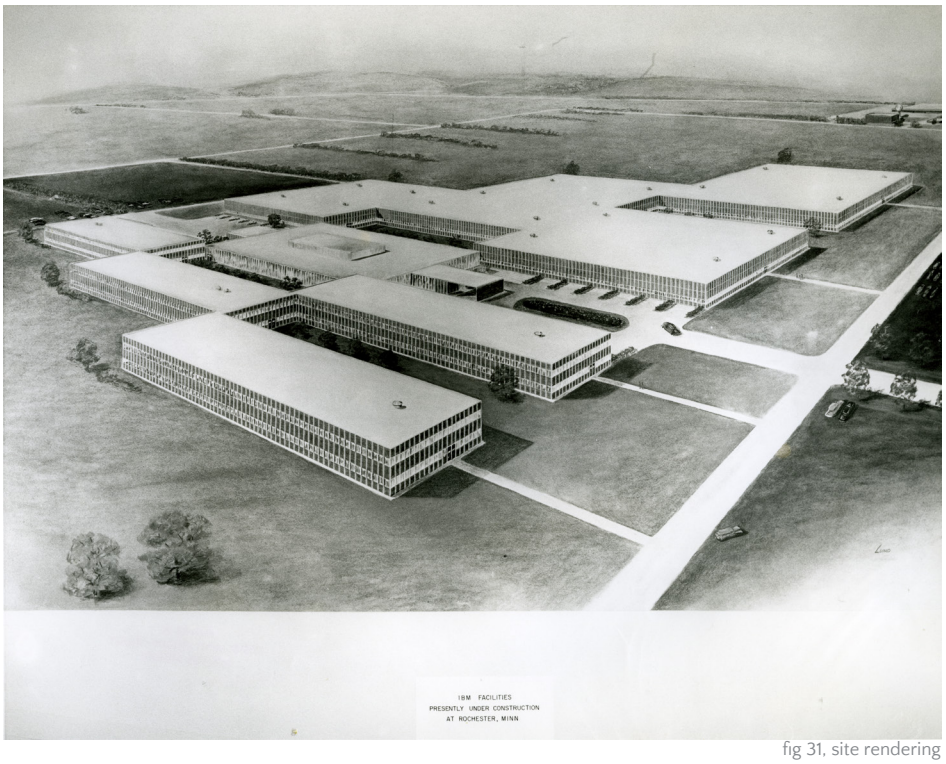


fig 31, site rendering

In 1956, it was decided that International Business Machines (IBM) would construct a manufacturing and training facility in Rochester, Minnesota. The company was interesting in hiring the leading designers of the time to propel the image of being a cutting edge entity in the post-industrial era. Eero Saarinen was hired to design the new facility which by IBM's definition needed to accommodate future expansion in an orderly and predictable fashion.
Saarinen accomplished this by setting modules based on square footages which were determined to be ideal for the distinctly different programmatic functions. Administrative buildings, built to the east of the central cafeteria and entry, would follow an 80'x250' module with 2 stories. To the west, manufacturing buildings measuring 250'x250' on one level provided increments of 60,00 square feet. The entire exterior follows a 4 foot grid of curtain wall panels, a major innovation for the time. The buildings are bounded at the 4 foot level with ribbons of 4 foot high windows on both levels. It was Saarinen's desire that only the verticals be accentuated thus the panels were set in 5-inch deep aluminum mullions. Horizontally the panels of glass were held in place with rubber gaskets which minimized their visual effect.
The following pages show the rapid, but predictable, expansion of the campus through the 1960s as laid out by Saarinen.

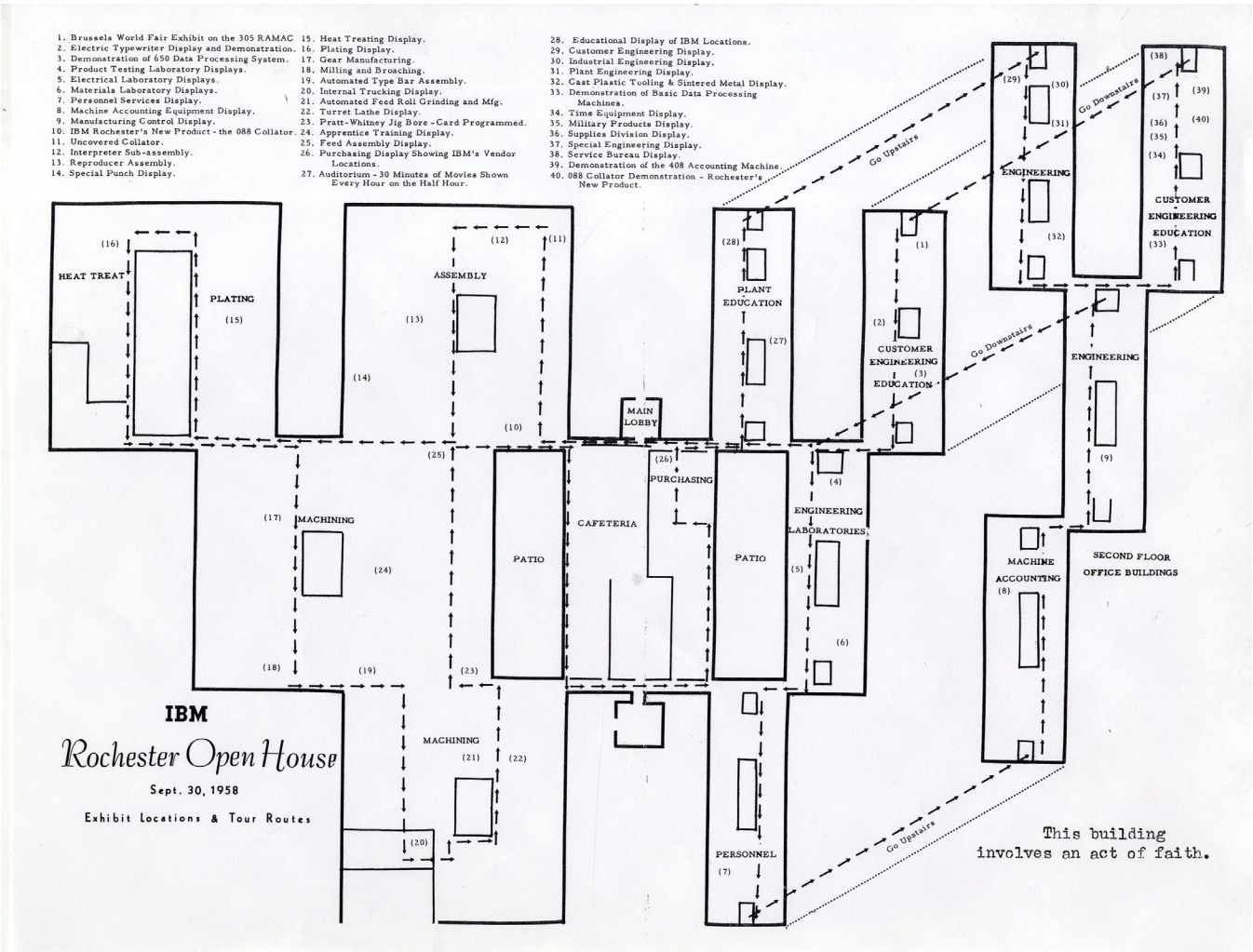


fig 32, open house program

Program from site open house, September 30, 1958. Some 25,000 people attended the event.

fig 33, IBM workers in the employee cafeteria

fig 34, office interior 1958

Administration building interior 1958. Saarinen furniture and bright colors were used throughout.

fig 35, office (disused) october 2016

fig 36, hallway (disused) october 2016

Administration building interior, October 2016. Currently unused space.

fig 37, employee cafeteria ca. 1960s

IBM employee cafeteria in the 1960s. Note the Saarinen furniture and curtain wall without horizontal mullions.

fig 38, employee cafeteria october 2016

IBM employee cafeteria, October 2016. Curtain wall panels have been replaced with more efficient glass and horizontal mullions have been added.

fig 39, manufacturing machine shop 1958

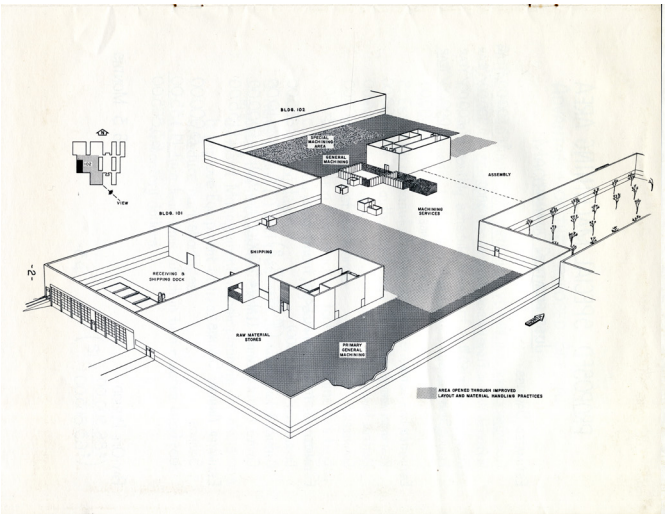


fig 40, cutaway loading dock section

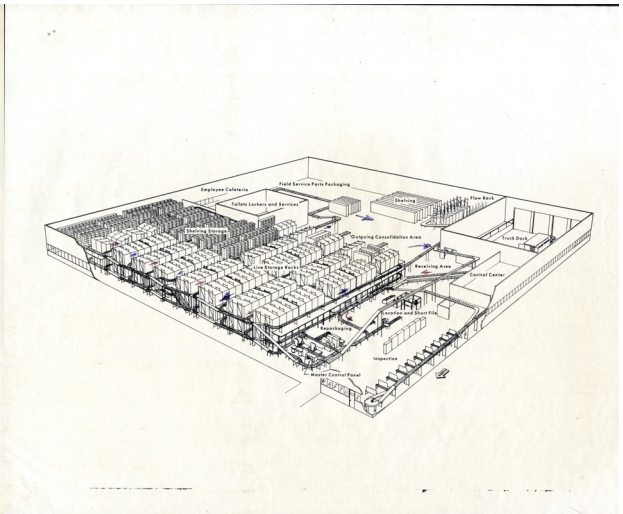


fig 41, cutaway manufacturing section

IBM manufacturing machine shop area as seen in 1958. IBM machinery was painted with the companies signature blue color. Not the light eggshell blue on the ceiling and above the windows, a Saarinen color choice.

fig 42, manufacturing (disused) october 2016

An area of the manufacturing floor as it appears in October 2016. Nearly all manufacturing lines on site have been moved to locations in Mexico and China.

PROCESS

Process work for the thesis design utilized a mix of materials and methods. The primary mode of design development was through sketching and modeling. Sketches of existing site elements, Saarinen designs, and building plans led the process.

After programming possible uses, it became necessary to develop the project in 3 main parts; multi-family housing, IBM/ new entry condition, and general schematic programming for an University of Minnesota -Rochester campus expansion.

Multi-family housing became the most detailed part of the project and required the most varied range of media for study. Along with constant sketch iterations, several section models and an overall site model were constructed in order to better understand both the size and scale of the existing buildings and the proposed changes to the structure.

Digital modeling and drawing allowed for 3D views of the design interventions with the ability to see, in real time, how the design elements could be implemented. This allowed the design to change rapidly, primarily in form, material, and module.

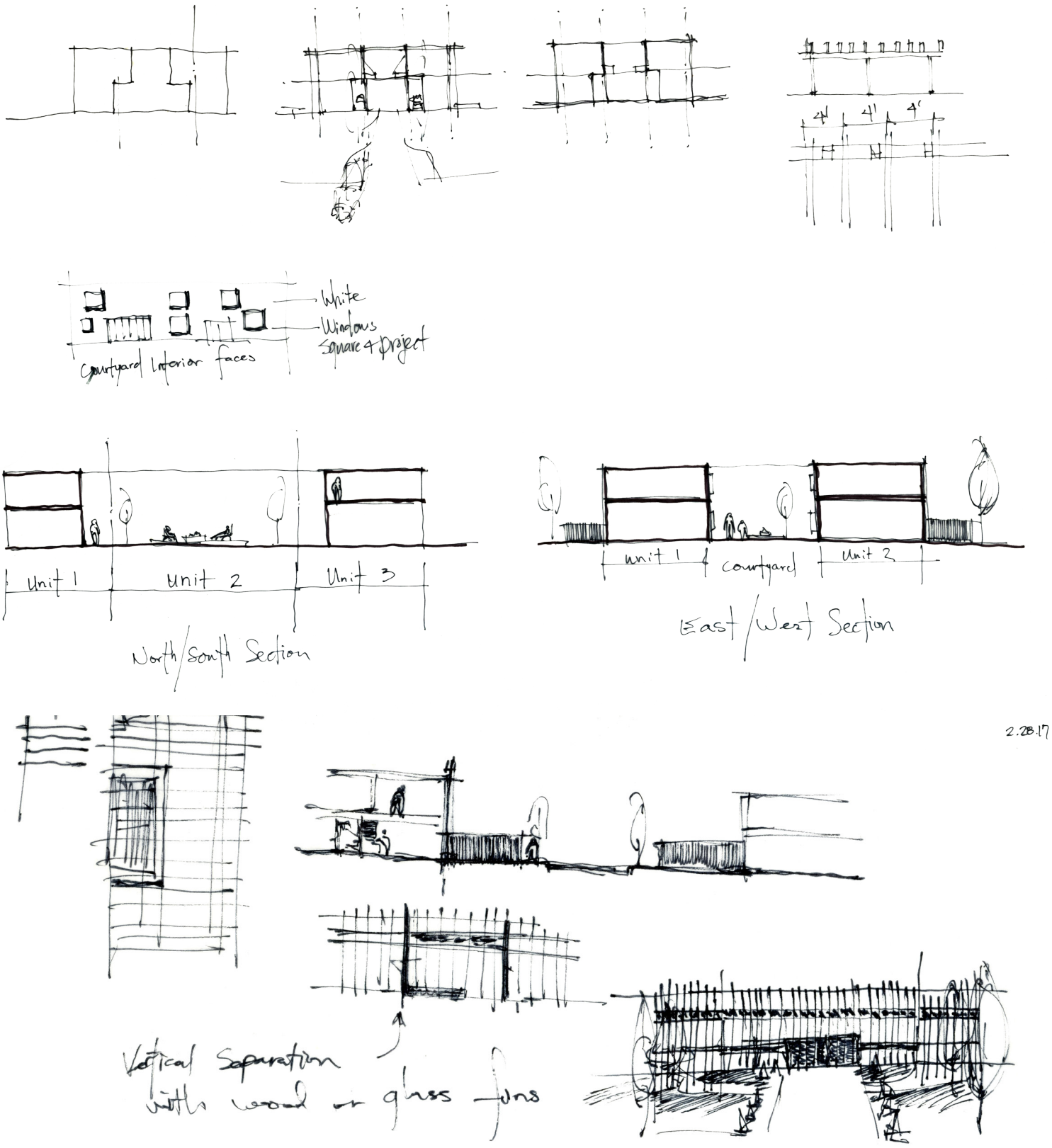


fig 43, multi-family residential process sketches

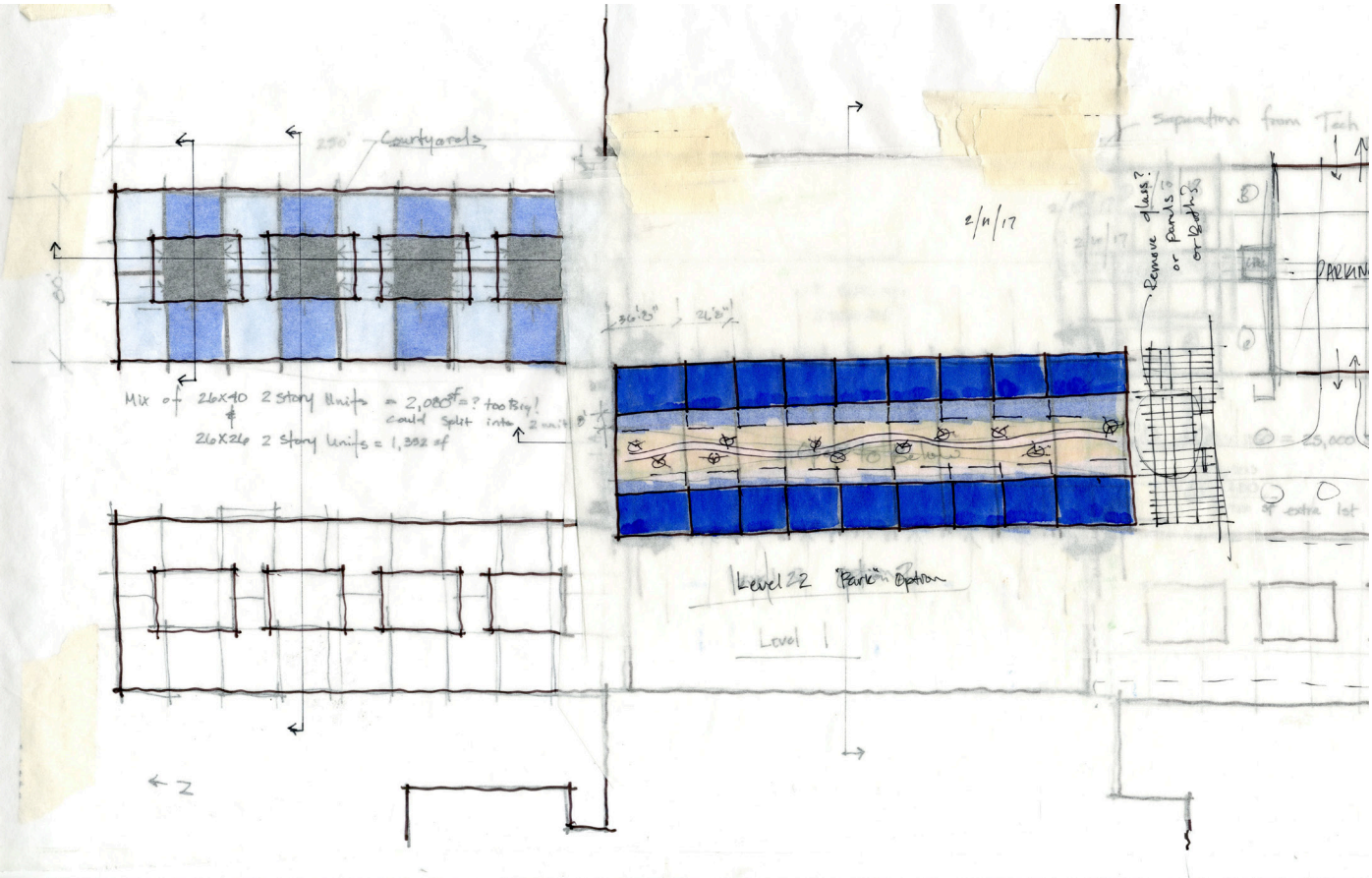
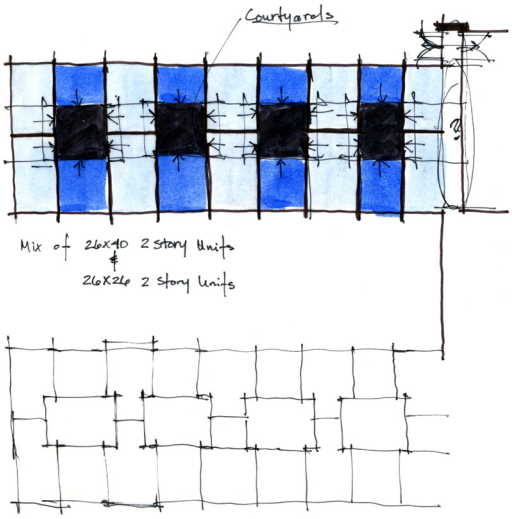


fig 44, multi-family residential process plan



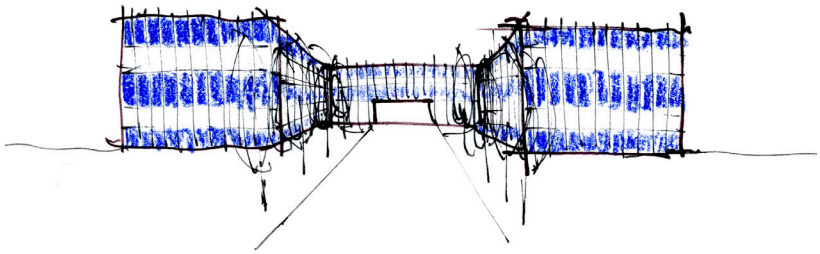


fig 45, multi-family residential exterior perspective

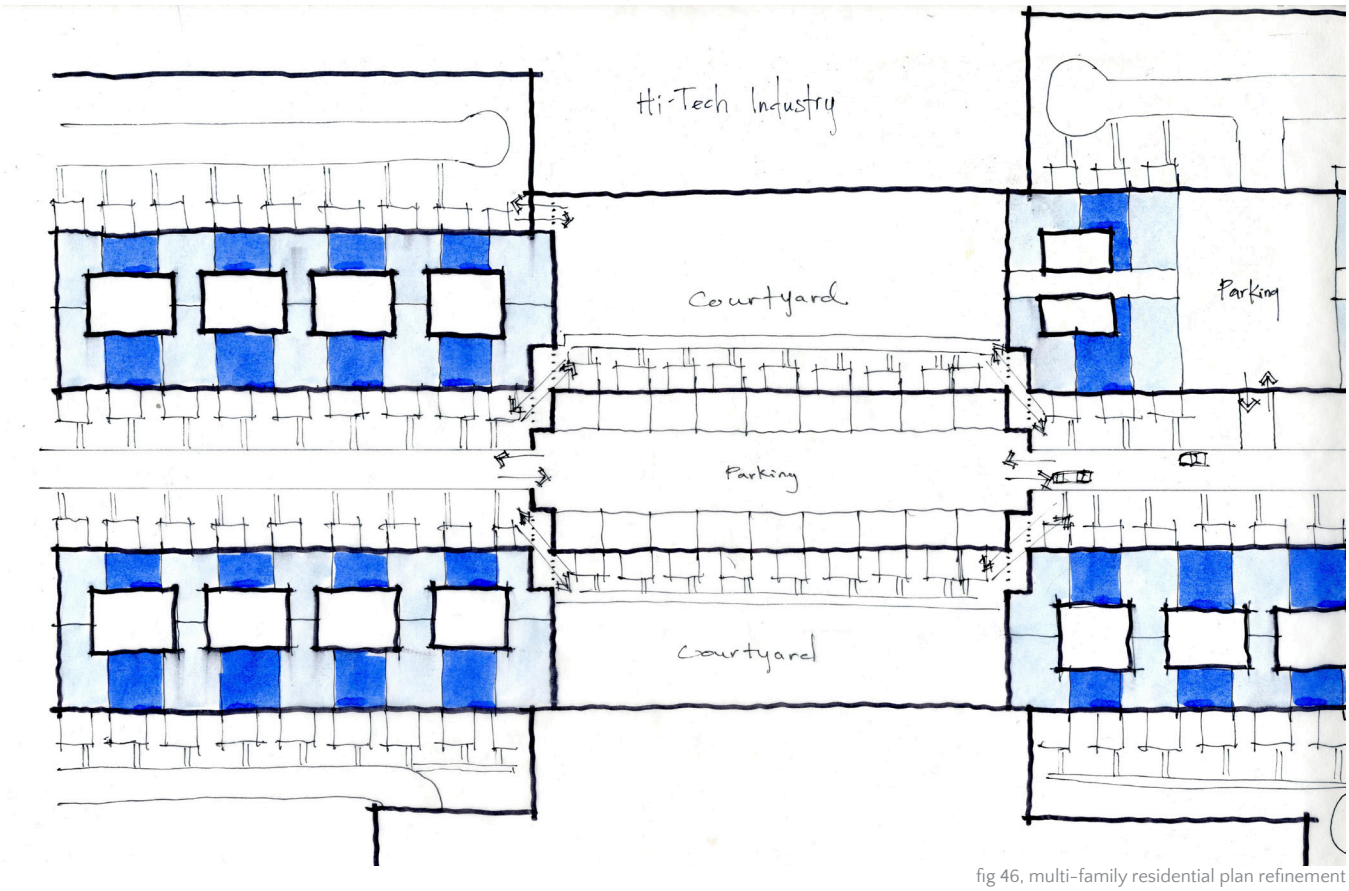


fig 46, multi-family residential plan refinement

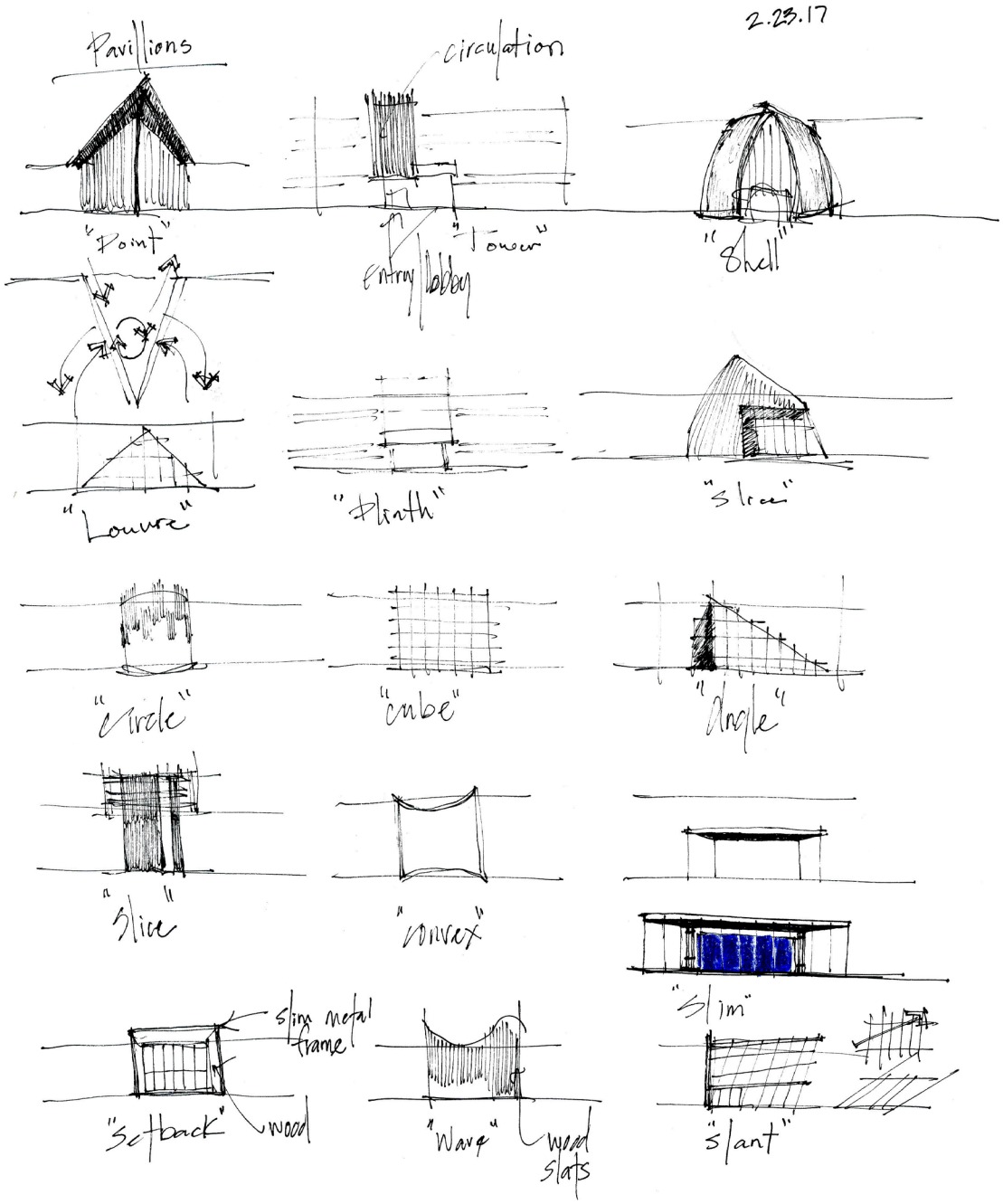
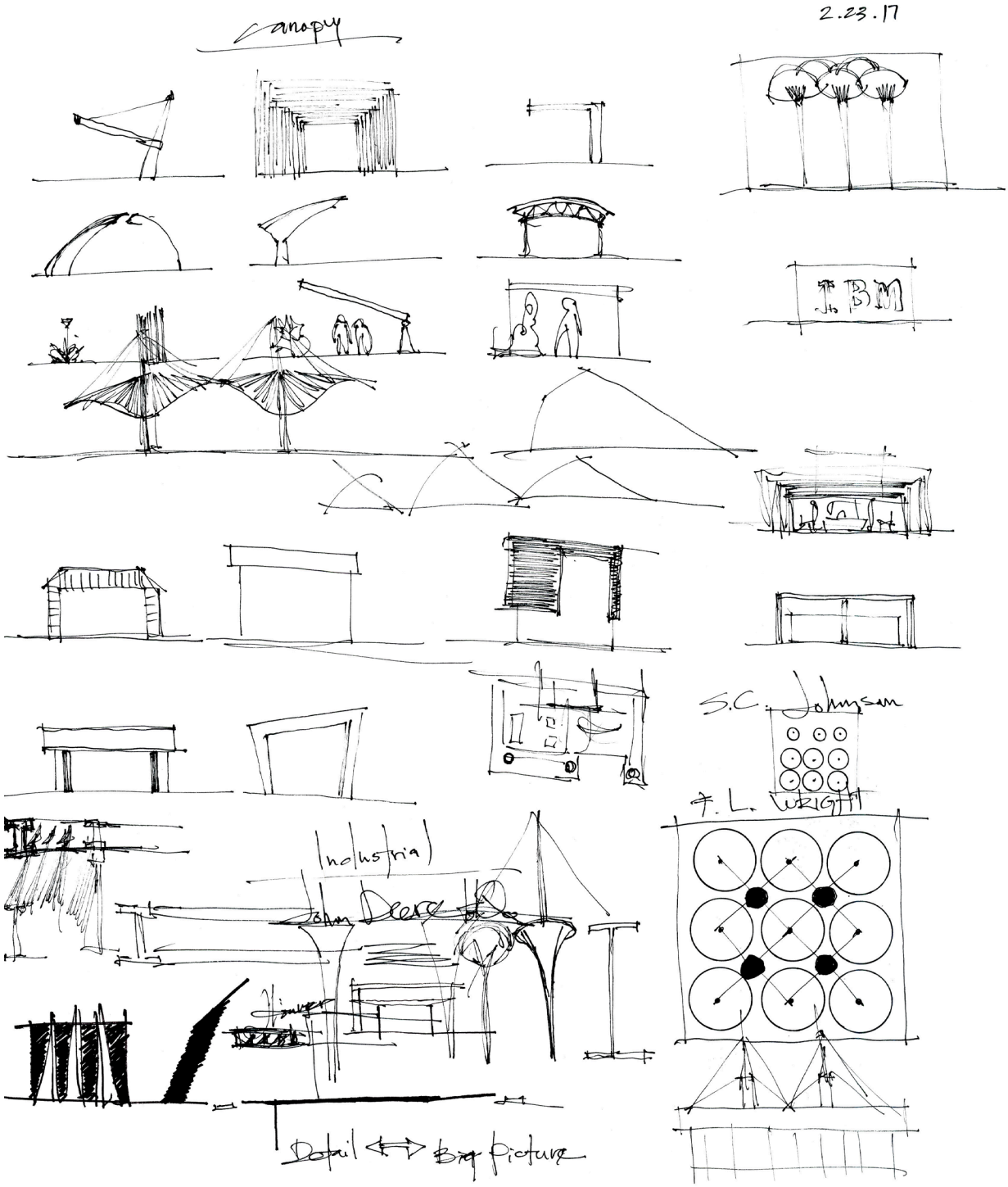


fig 47, IBM pavilion process sketches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Industrial
John Deere
Detail ⟷ Big Picture

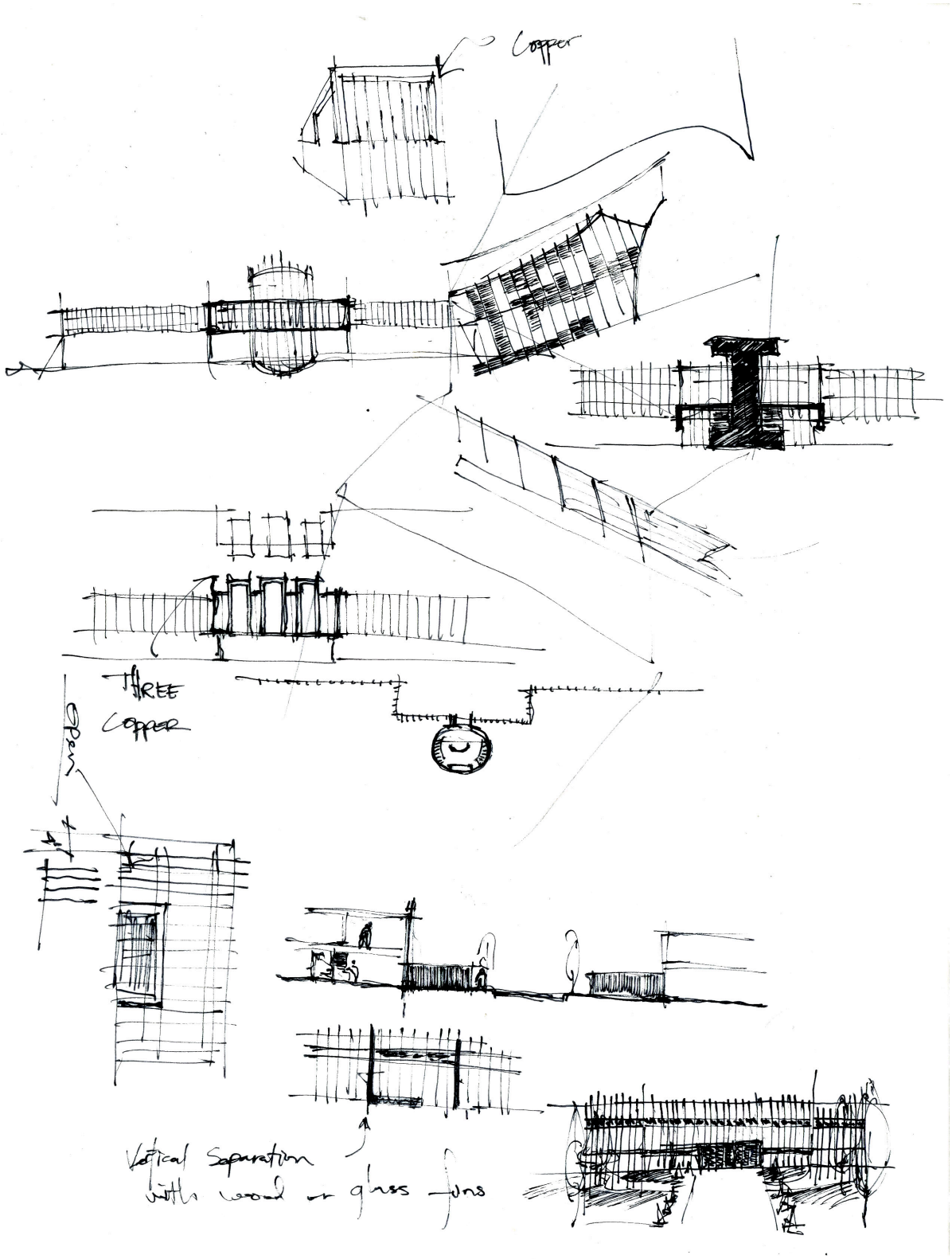
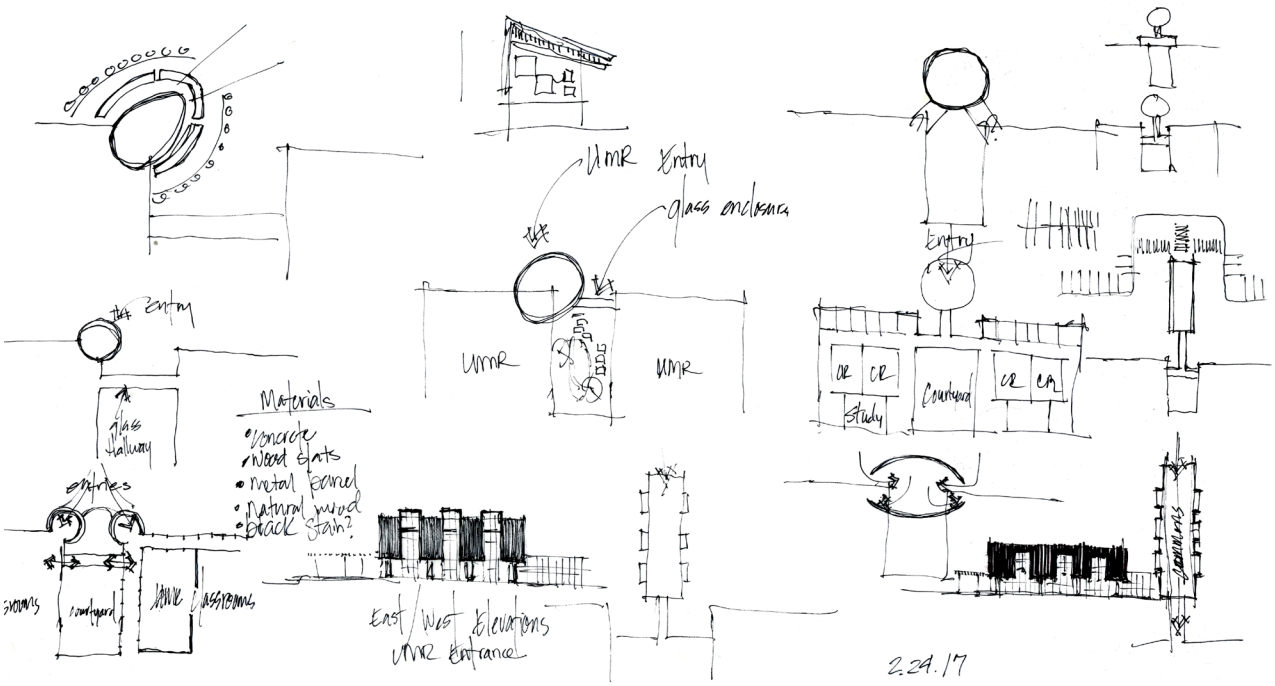


fig 48, IBM entry condition sketches



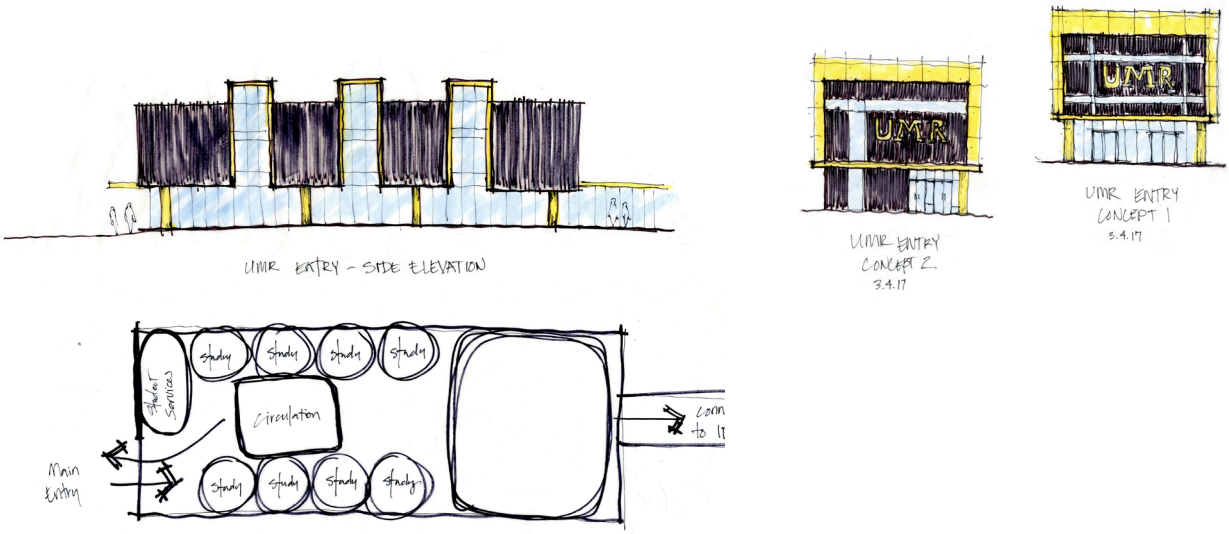
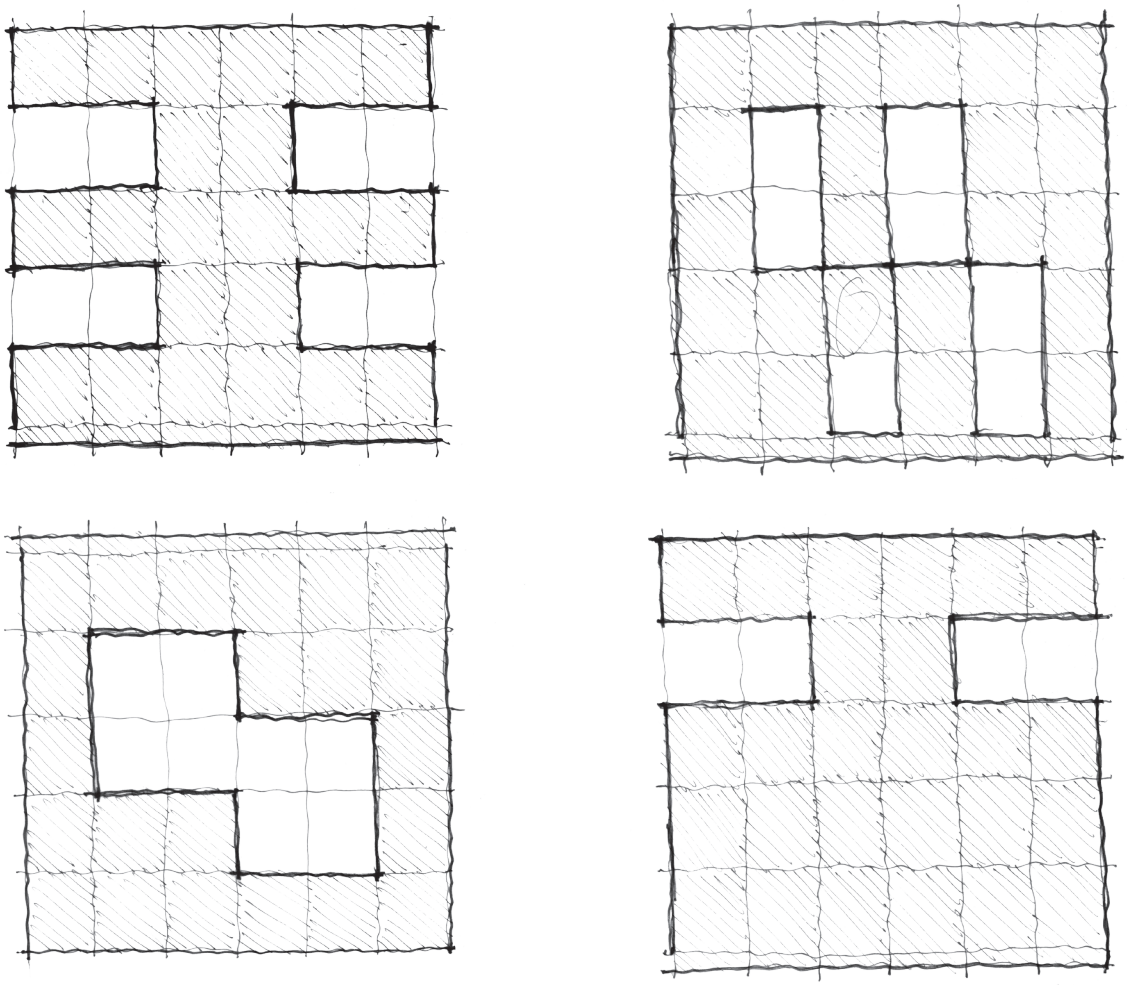


fig 49, UMR pavilion process sketches + facade concepts



Planning diagrams for voids cut from the former manufacturing buildings. The voids follow the buildings existing structural grid. The design is not suggesting a utilization of all of these concepts together nor are these the only possibilities. The diagrams are meant to serve as an idea for breaking up unnecessarily large quantities of space while respecting the original architecture. Voids demonstrate the power of subtractive architecture and how it might be applied at the IBM site. New facades created by the voids create opportunities for a new architectural language of material pattern, or module.

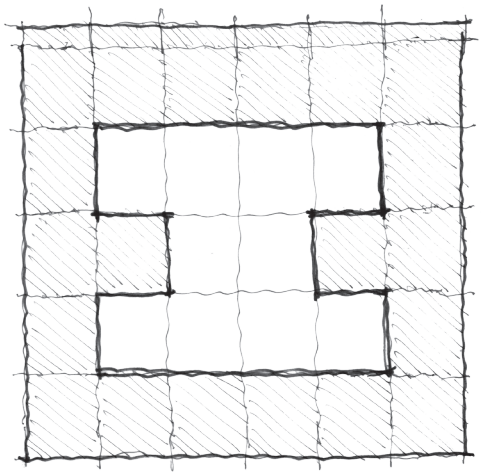


fig 50, UMR void concept sketches

DESIGN IDEAS

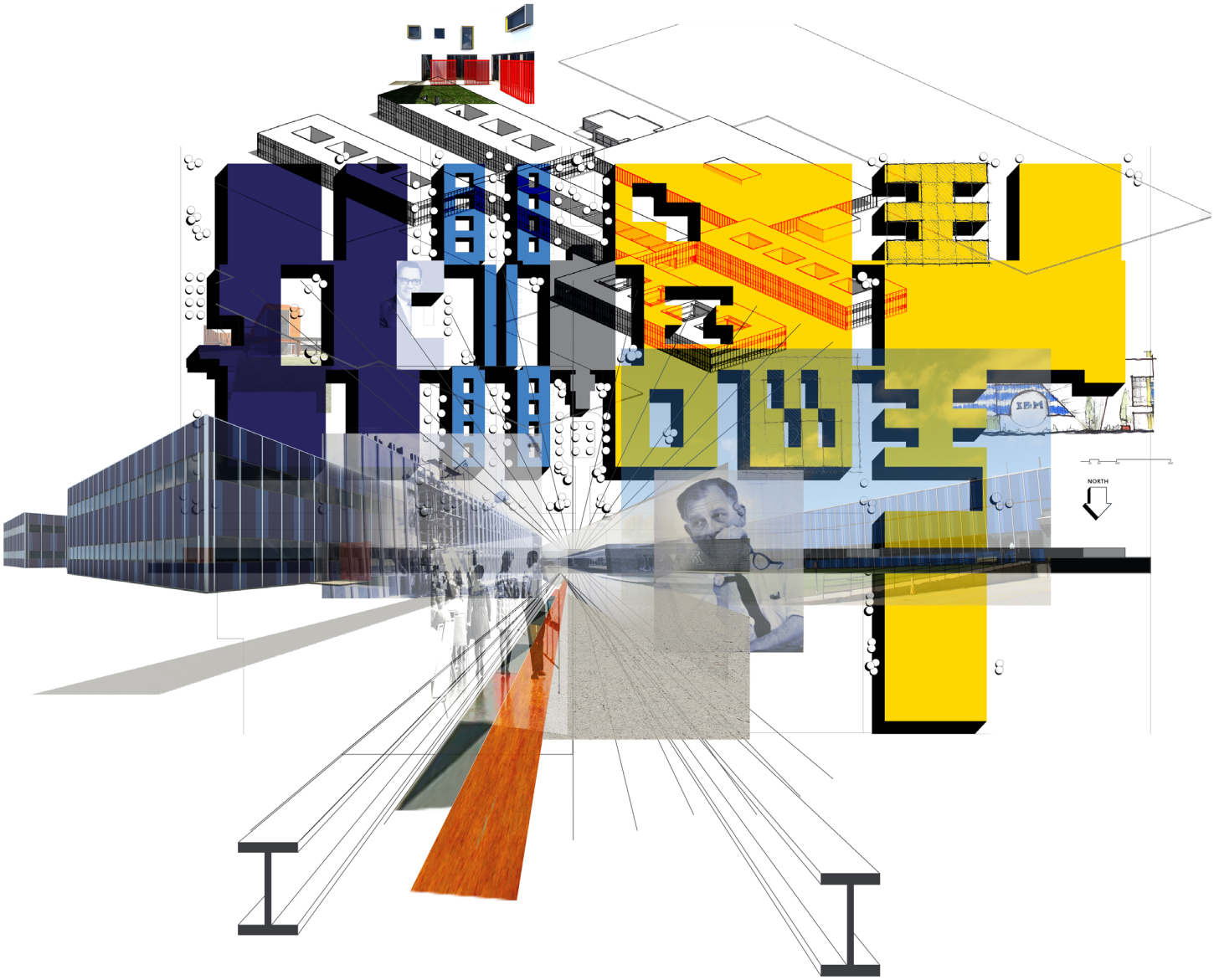


fig 51, project elements graphic

This image is meant to embody the major focus elements of the thesis. These include; history, research, personal and social context, masterplanning, adaptive reuse, color, and materiality.

"The vibrancy of the two blues, which helps avoid monotony at close view, changes when seen from the distance. Then the total effect is a dark blue band making a transition from the tawny-green, rolling landscape to the sky. In winter, the blue vibrates with greater intensity against the snowscape. The result is a building made up logically and appropriately for IBM of precise. Machine-manufactured parts." – Eero Saarinen

fig 52, IBM facade

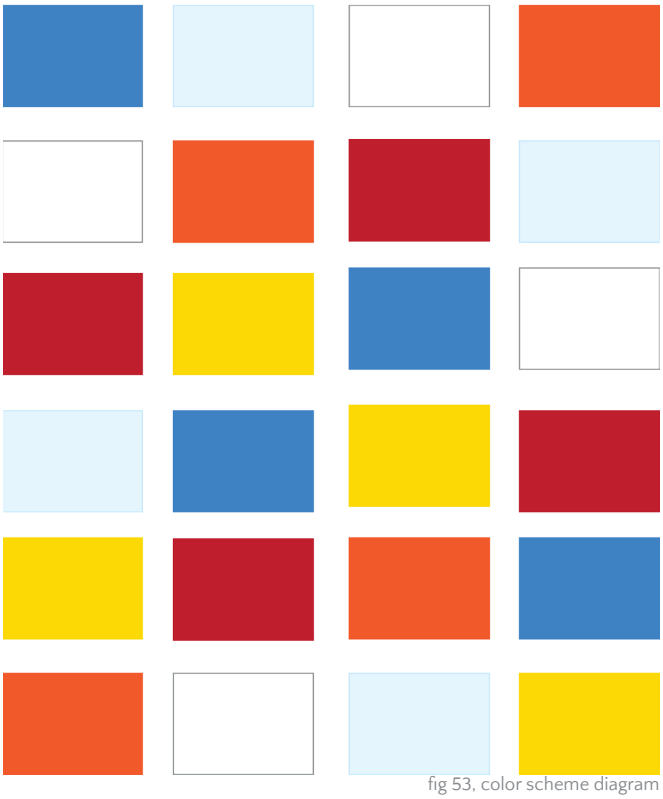


fig 53, color scheme diagram

Color was very important in informing the design ideas for adapting IBM Rochester. Saarinen's bold use of color set a precedent for how it can be used to articulate architectural expressions. He had an acute understanding of color and the effects it could have visually and psychologically within the built environment.

The illustration at left shows a proposed color scheme for elements of the campus based on research of Saarinen's original work. The design for IBM included 6 brightly colored bins for the manufacturing floor which broke up monotony and added vibrancy to the interior. A light eggshell blue was used on the ceilings and interior faces of curtain wall panels to produce a sky effect. Structural elements throughout were painted a crisp white.

Inspiration for the scheme shown here came from photos of the original interior spaces, historical descriptions, and speculation based on Saarinen's other work. Additional influence also came from popular color schemes of the 1960s which complement the original blue.

Multi-Family Housing

A plan for multi-family housing development on the site is shown at right. This concept consists of 50, 1-bedroom and 40, 2-bedroom units. It occupies four original Saarinen designed administration buildings and a fifth built later. The plan takes advantage of the existing courtyards creating a park-like setting. Additional courtyards have been carved out of the existing structure to allow natural light to penetrate each unit from at least two sides.

Each unit is two stories and designed to fit within the structural grid. Window openings, though different on the new courtyard faces from the iconic curtain wall exterior are in keeping with the established 4 foot module. Yellow and red are used throughout to distinguish the new design elements.

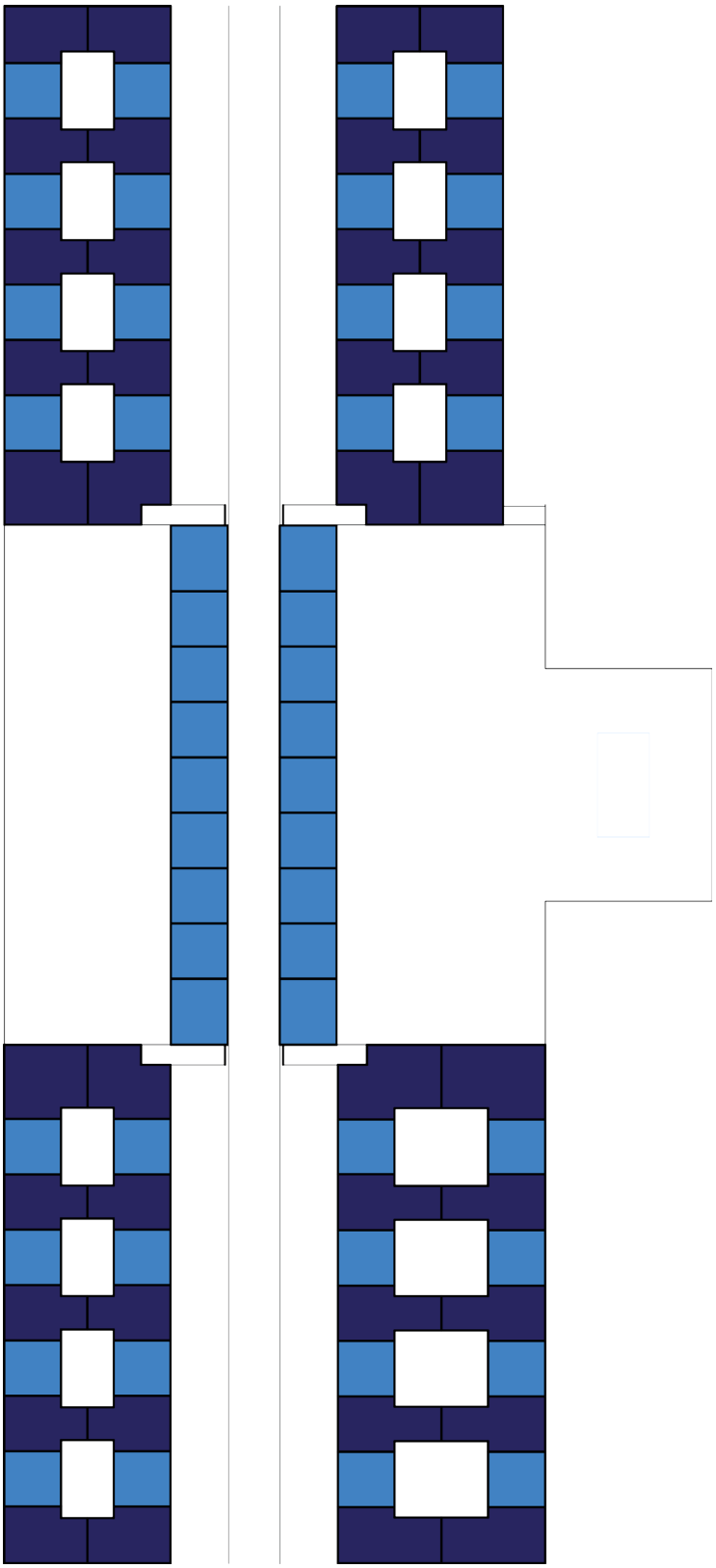


fig 54, multi-family residential plan

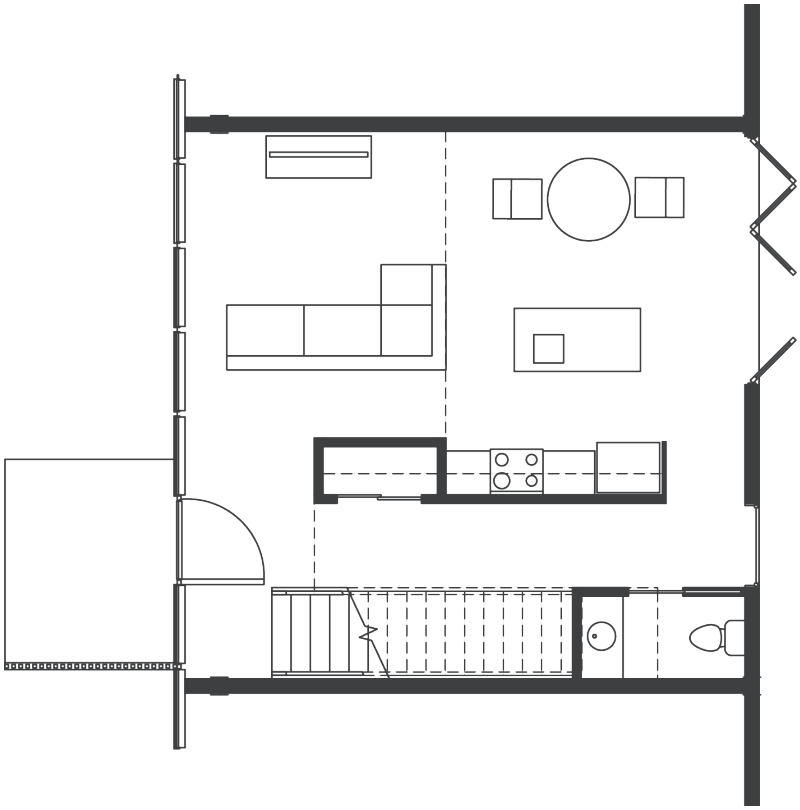


fig 55, 1 bedroom, level 1 plan

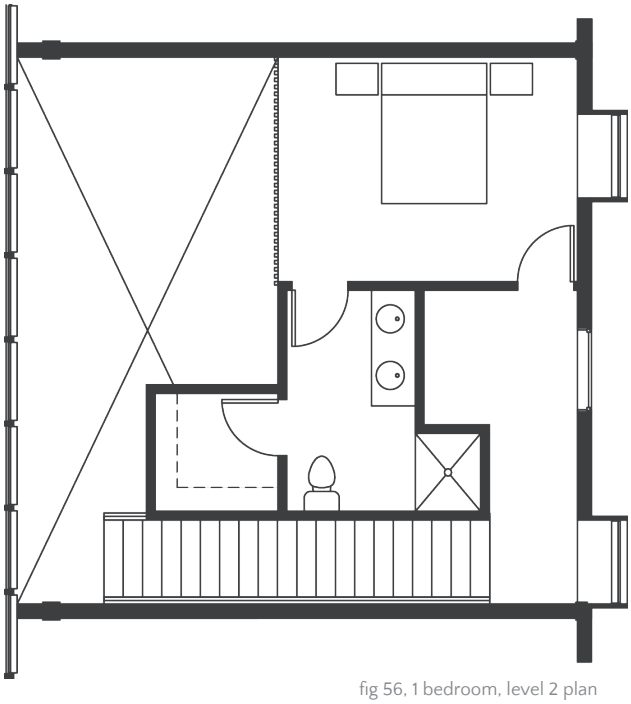


fig 56, 1 bedroom, level 2 plan

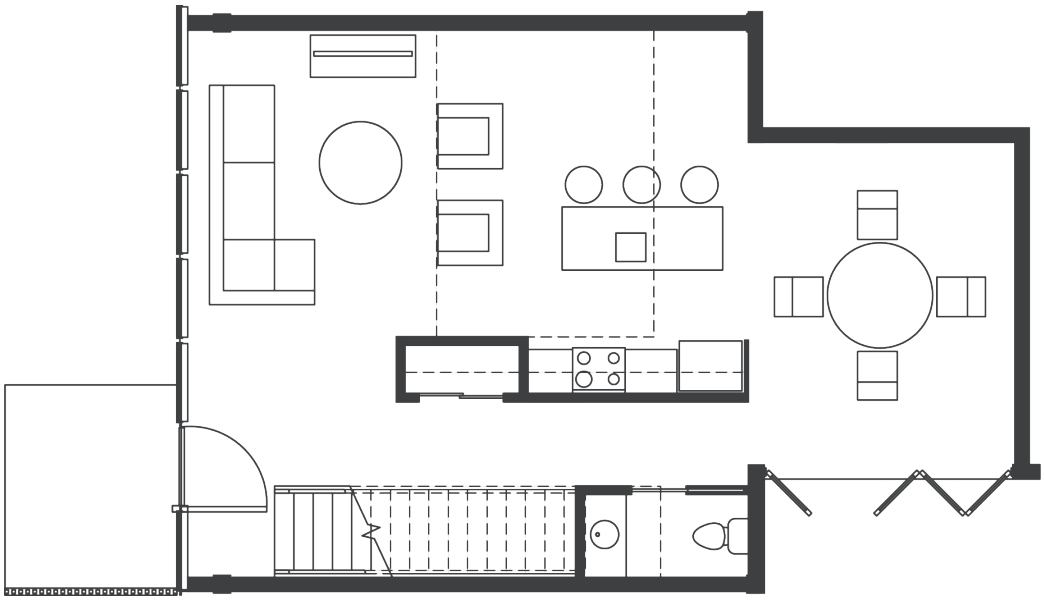


fig 57, 2 bedroom, level 1 plan

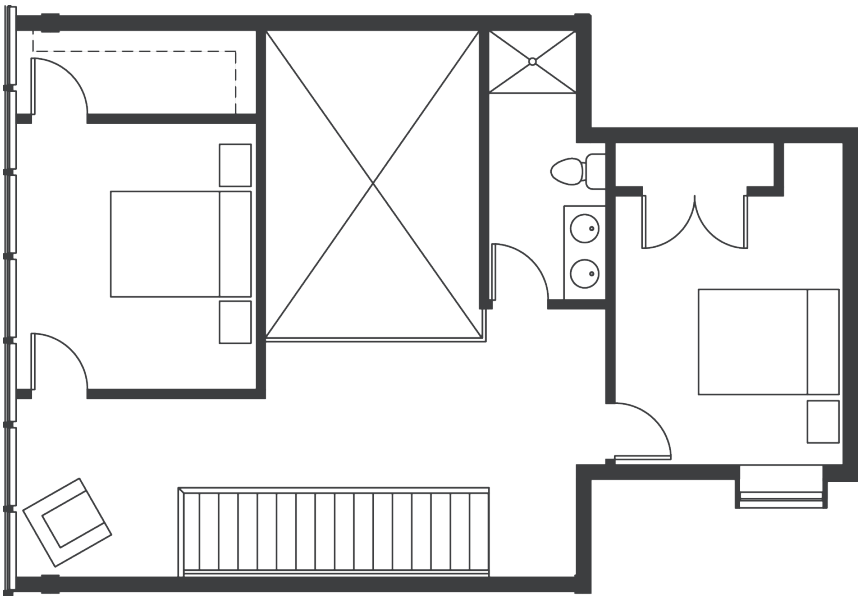


fig 58, 2 bedroom, level 2 plan

fig 59, residential courtyard rendering

The center building, bounded by courtyards on its east and west sides, posed a challenge for entry points into the individual units. Openings through the building at the north and south ends allow for entry via the courtyard facades.

The building is but through the middle allowing traffic to navigate the complex via a narrow street. Hard-scape paving runs from edge to edge and is broken up by injecting areas of vegetation. The overall feel is meant to create a sense of closeness found in European neighborhoods. Though the building is cut through, its original outline would remain in the form of exposed structural elements. This is one of the few changes to the exterior faces of the buildings designated for multi-family housing.

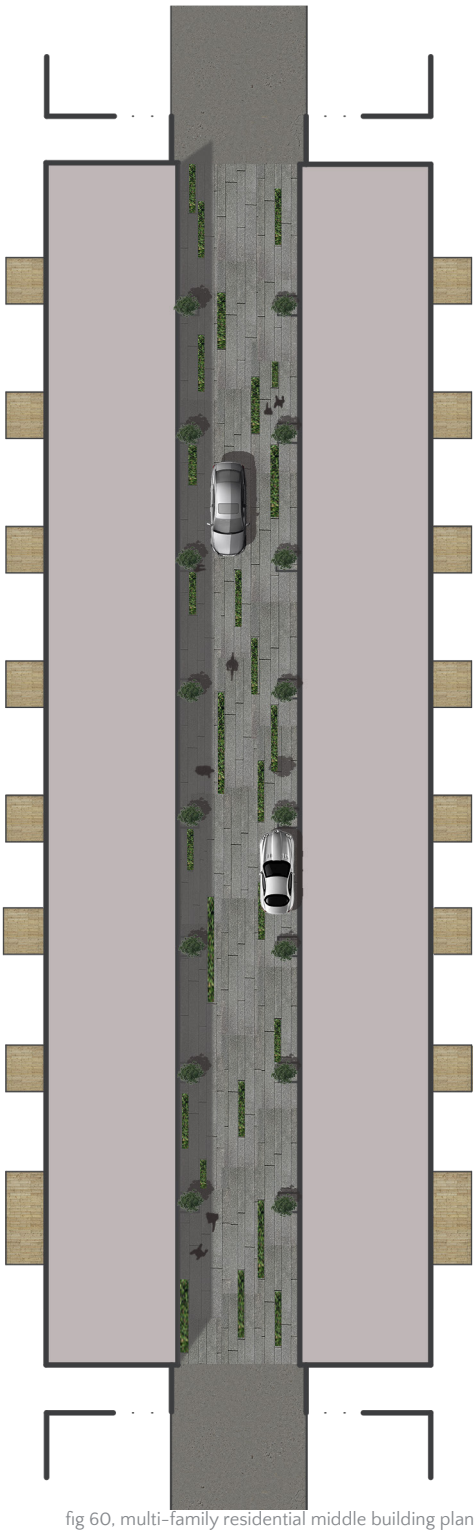


fig 60, multi-family residential middle building plan

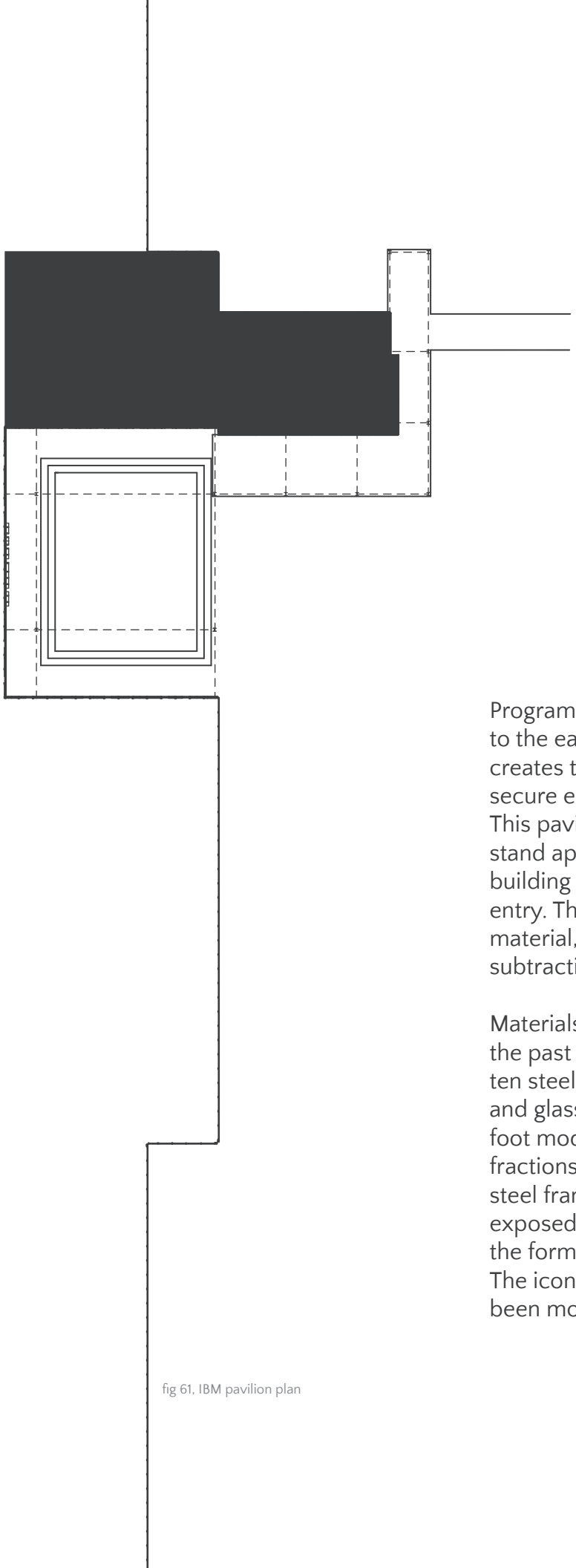


fig 61, IBM pavilion plan

Programmatically, IBMs' shift to the eastern-most buildings creates the need for a new secure entry point or 'pavilion.' This pavilion was designed to stand apart from the existing building as a clear point of entry. This is achieved through material, pattern, addition, and subtraction.

Materials chosen reflect both the past and present with Cor-ten steel, black metal panel, and glass arranged on a four foot module or multiples/ fractions thereof. Here too, the steel framework has been left exposed on the exterior to fill in the form of the existing building. The iconic IBM sign has also been moved to this location.

fig 2, IBM pavilion rendering collage

This rendering collage meshes the existing with the proposed. A new centralized entry pavilion for IBM just from the long east facade, interrupted by a void. Within the void is a new exterior courtyard. The design keeps within the four foot module or variations thereof and utilizes a material palette that is distinctly contemporary while complementing the existing architecture. The exiting structure is emphasized in the void by being left exposed. The iconic IBM letters have been moved to this new facade from the original site entry point.

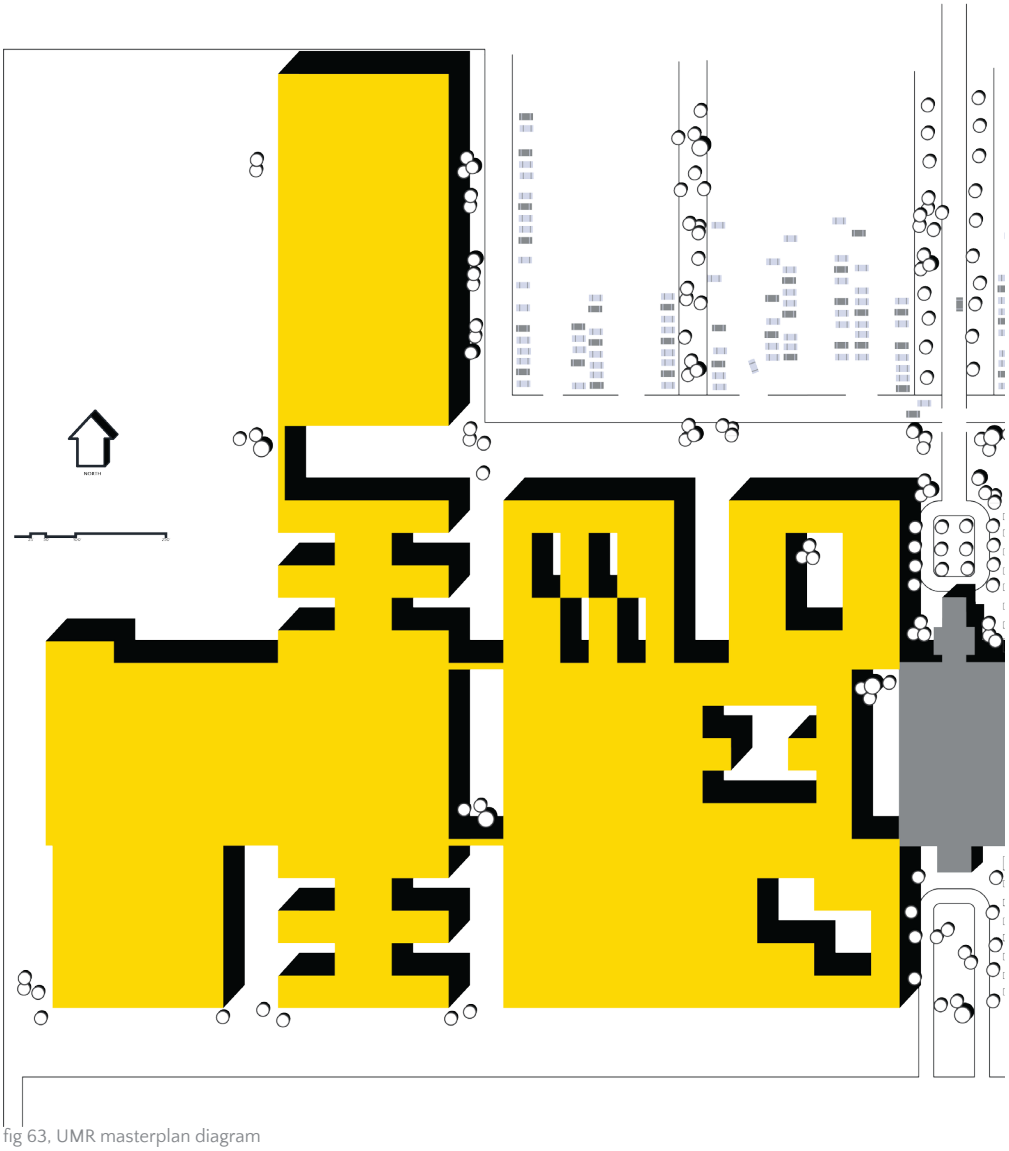


fig 63, UMR masterplan diagram

This diagram illustrates the third major programmatic element, space for the University of Minnesota -Rochester. Though the ideas for this function are not thoroughly vetted in this project, it serves as a suggestion for possible future use. The ample space would allow for university expansion and could encompass several related functions tied to university functions. Space within could also be dedicated to medical and engineering startup companies which have expressed interest in the site. These, together with the university, IBM, and Mayo Clinic could work together to make significant advancements in the field of medical technology.

The plan graphic above illustrates possible design interventions within the existing structure

PERFORMANCE ANALYSIS

Site + Context

The projects works within the given site and context to bring about ideas for the reuse of a specific place and of places of a similar nature. This aspect is unique to this thesis in that site and context are heavily rooted in what is already in existence for it is the site which is the project and the project is the site. The ability to adapt the site in a way that ensures its future survival while at the same time preserving the original design intent has always been at the forefront of my design work. I believe that intention was achieved through the form of research and intentional design which respected the spirit of the architecture.

Typology +Program

Typology and program were influenced heavily by the Bell Works project in Holmdel, New Jersey. Examination of the actions taken to adapt and preserve that site, along with it's similar characteristics to IBM, helped me to understand how the program I determined could be accomplished. This particular case study gave me hope and encouragement as I moved forward with design ideas. It is my hope that these ideas could be applied by a like minded group of people to save the IBM Rochester campus from architectural destruction.

Goals + Emphasis

My goals for the project stemmed from Saarinen's and IBM's stated goals. In addition, a major priority was to adapt the buildings to suit changing needs while maintaining the overall architectural integrity of the place. The design ideas developed are primarily based in historical reference.

If time and resources permitted, I would have liked to take the design interventions to more detail in introducing a new design language that would complement the existing forms. Overall, the goal was to spark a conversation as to what the next steps could be for the site and to imagine possible scenarios in which adaptation and preservation could exist together.

PROJECT INSTALLATION

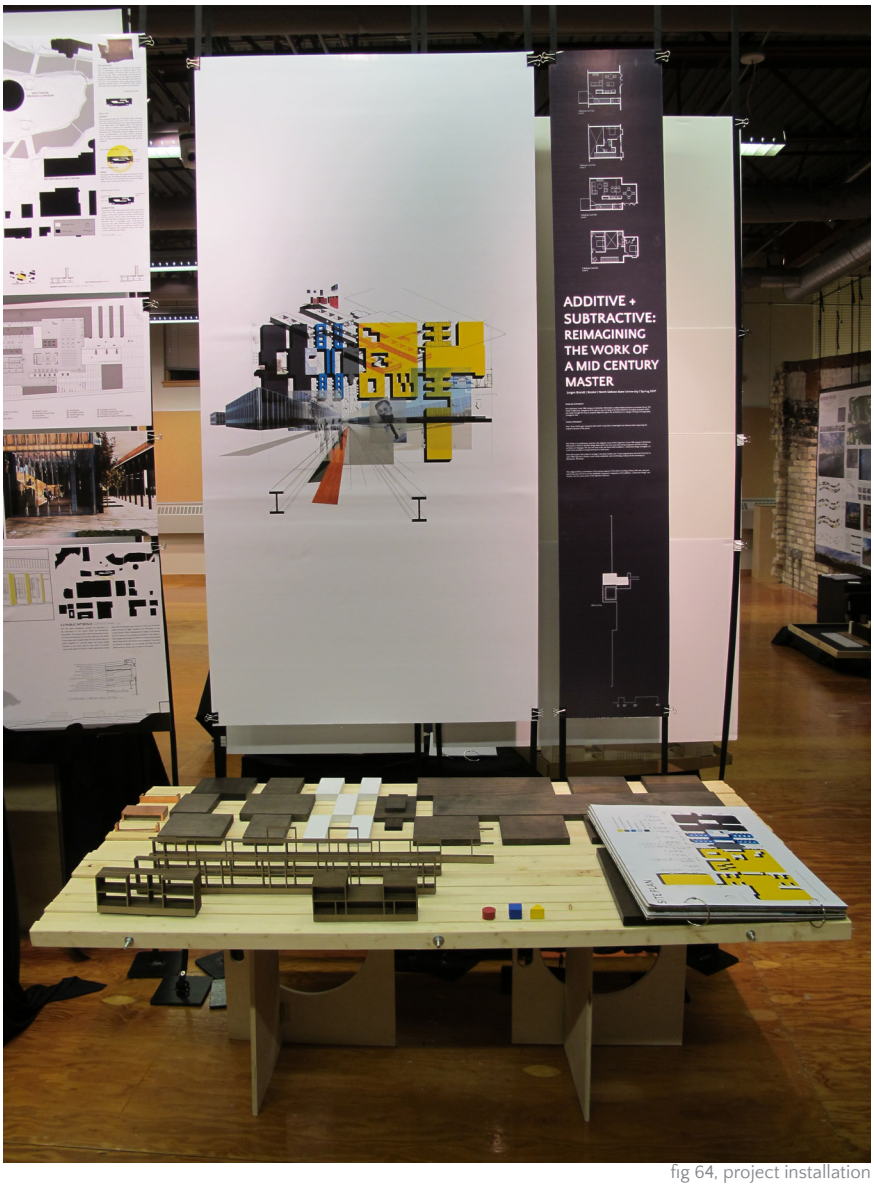


fig 64, project installation

fig 65, massing + section model display

“Always design a thing by considering it in its next larger context –a chair in a room, a room in a house, a house in an environment, an environment in a city plan.” – Eliel Saarinen

ACKNOWLEDGMENTS

Thank you to Grandpa Bud for your wealth of photos and documents from your years at IBM, for inspiring the intrinsic context of the project, and for instilling in me a love of drawing.

Thank you Dad, for the site visits and knowledge of all things IBM.

Thank you Mom, for scanning in all of grandpas slides and for running our own little archive.

Thank you to faculty and professional mentors who helped me along the way,

To Cindy Urness, for the inspiration and the idea to look at something so close to home and for the use of your rocking chair.

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Thank you to the archives staff at the History Center of Olmsted County for you assistance in gathering historical materials, it has been an invaluable help.

Thank you to my peers who encouraged me along the way and who have made me better in so many ways.

To Eero Saarinen, for the body of work that you left behind and for inspiring me to design with purpose.

fig 66, Eero Saarinen

APPENDIX

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