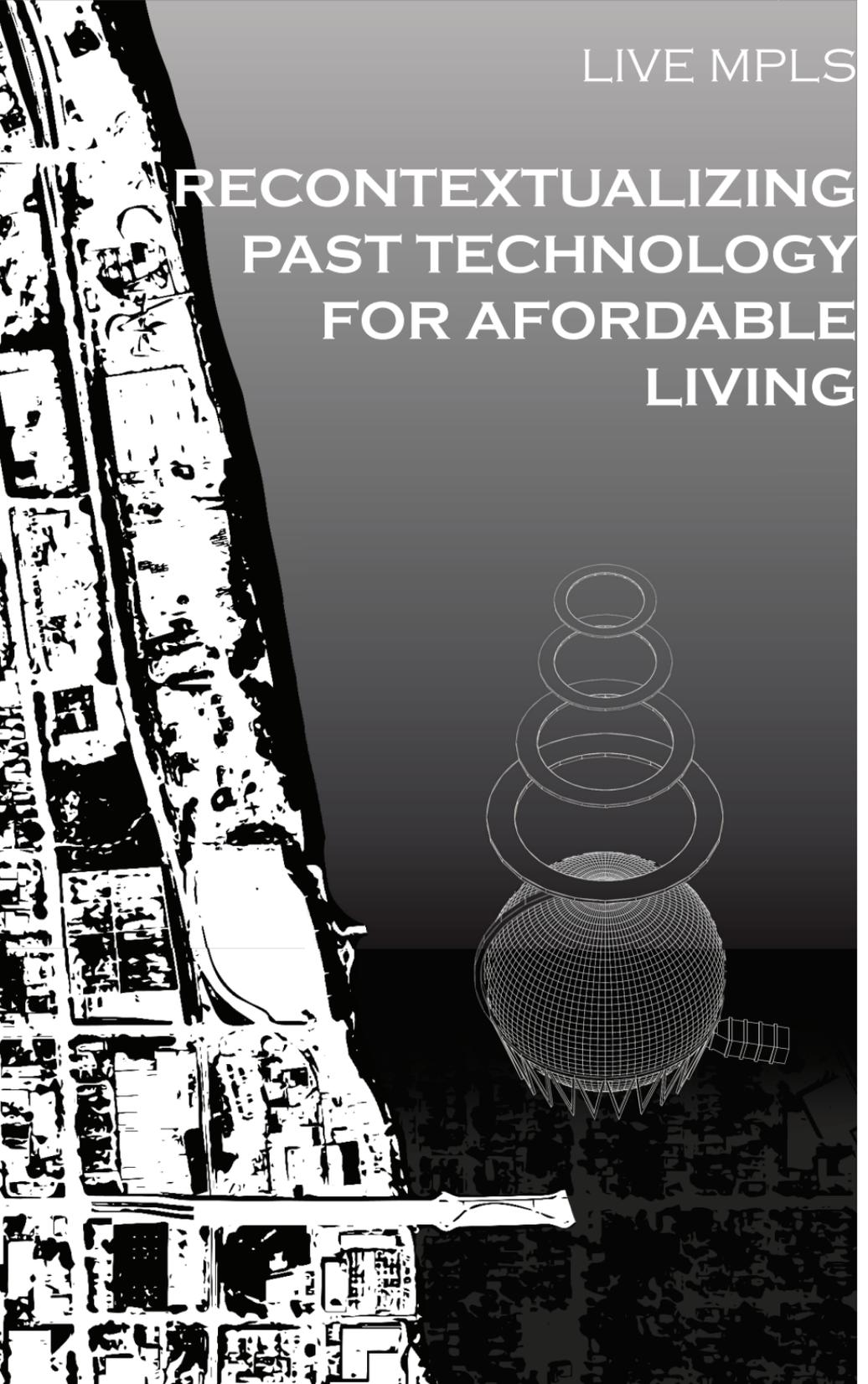
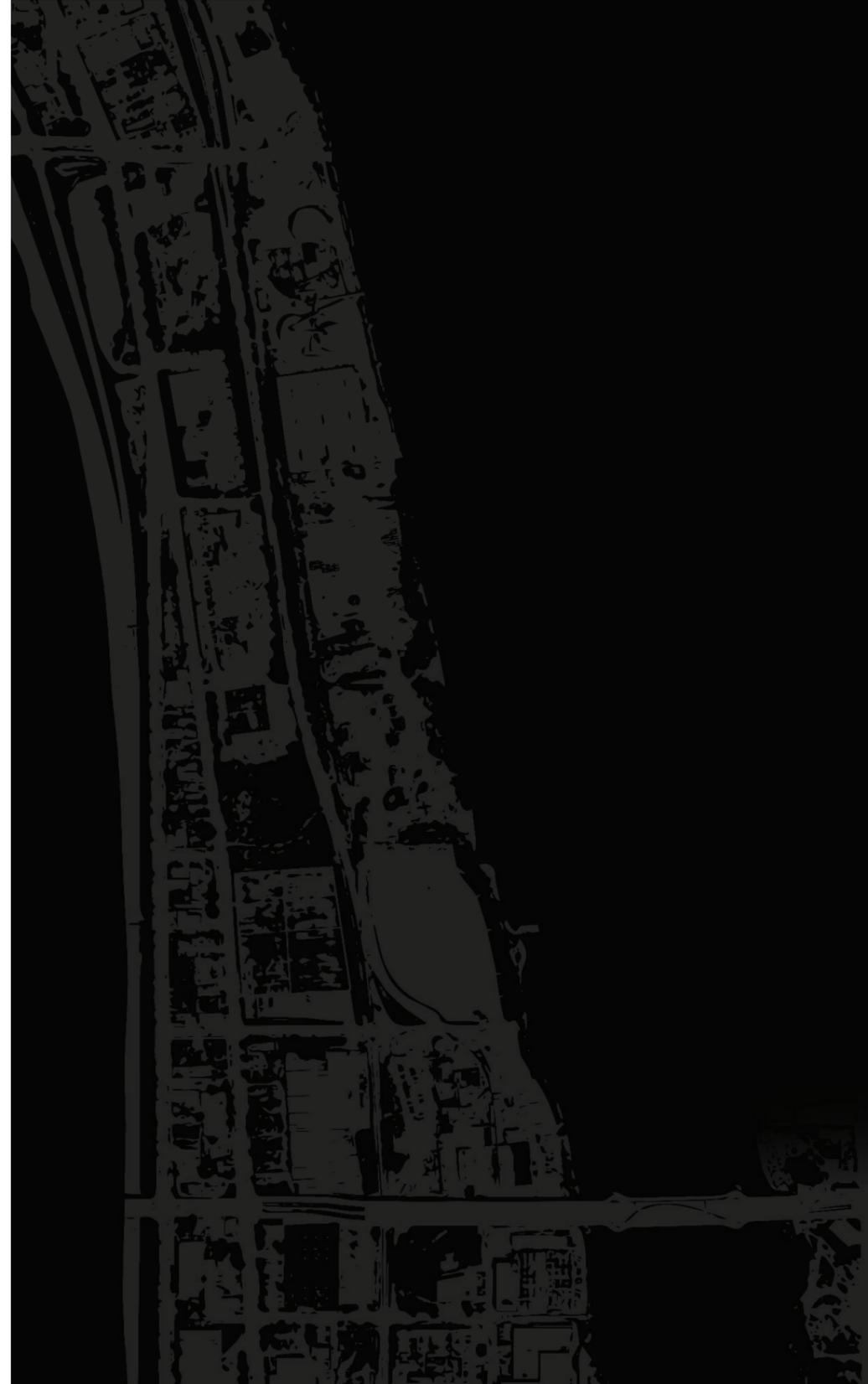


LIVE MPLS

RECONTEXTUALIZING  
PAST TECHNOLOGY  
FOR AFFORDABLE  
LIVING





# LIVE MPLS

A DESIGN THESIS SUBMITTED TO THE DEPARTMENT  
OF  
ARCHITECTURE AND LANDSCAPE ARCHITECTURE OF  
NORTH  
DAKOTA STATE UNIVERSITY

BY

ALEXANDER ORMSBY

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR  
THE DEGREE OF  
MASTERS OF ARCHITECTURE

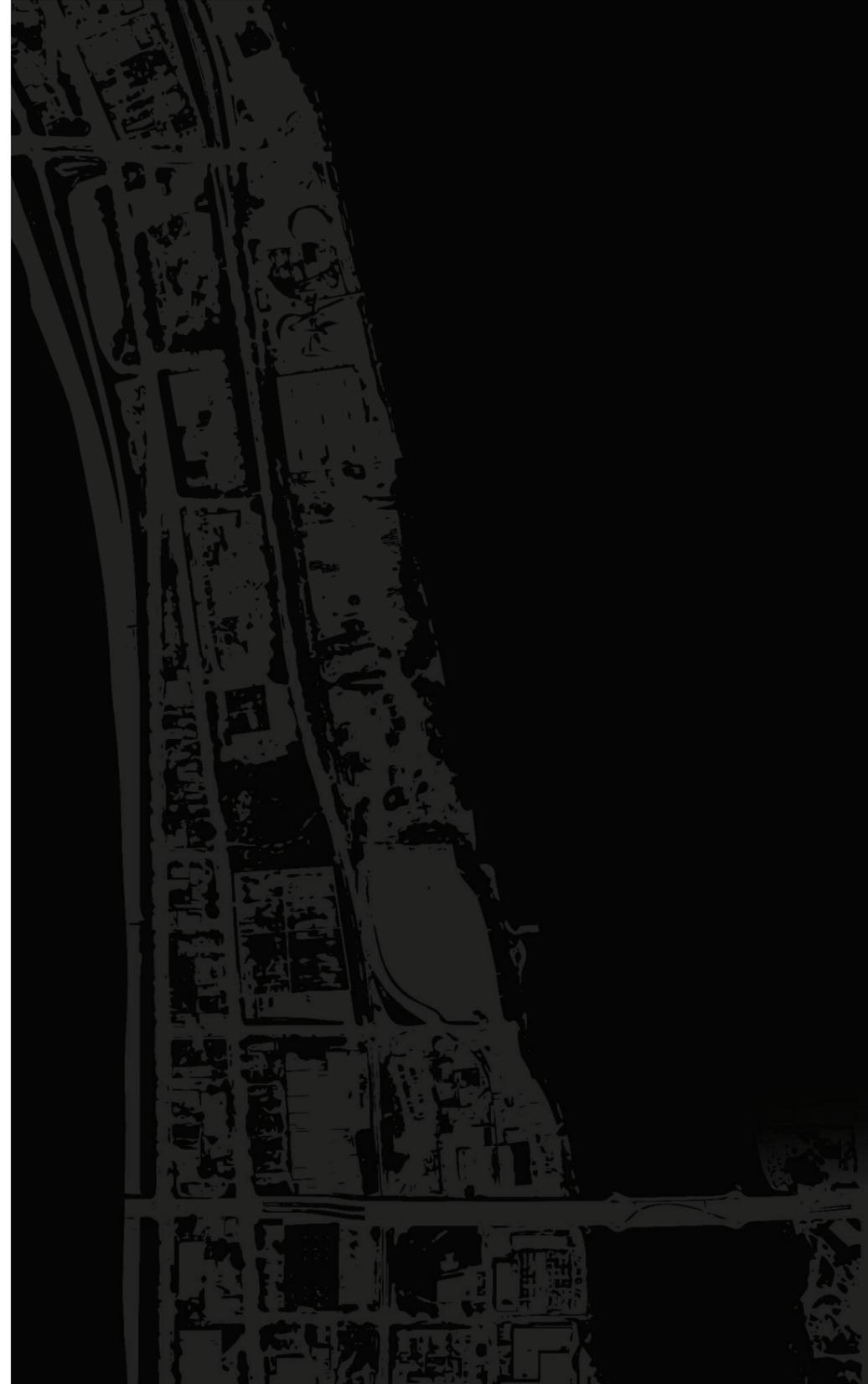
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PRIMARY THESIS ADVISOR

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THESIS COMMITTEE CHAIR





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# THESIS ABSTRACT



FIGURE 1 | COMPONENTS

TODAY WE HAVE THE LUXURY OF HINDSIGHT; THIS ALLOWS FOR THE TRUTH OF PAST ACTIONS TO REVEAL ITSELF TO US. WE CAN LOOK BACK ON OUR SHARED HUMAN HISTORY AND RECOGNIZE THE REPERCUSSIONS OF CERTAIN ACTIONS, AND IT IS WITH THIS LENS HUMANITY MUST VIEW THE PAST; WITHOUT IT, TRUE PROGRESS IS NOT POSSIBLE. THE PAST IS, IN FACT, THE KEY COMPONENT IN INSPIRING THE FUTURE. AS THE FAMOUS GEORGE SANTAYANA QUOTE GOES, "THOSE WHO CANNOT REMEMBER THE PAST ARE CONDEMNED TO REPEAT IT." WHILE THIS QUOTE HAS BEEN TWISTED THOUSANDS OF TIMES OVER TO DEFEND A VAST ARRAY OF ARGUMENTS, AS DESIGNERS WE STILL HAVE MUCH TO LEARN FROM IT. WE MUST TAKE IT UPON OURSELVES TO DISSECT THE PAST—TO BREAK IT DOWN INTO ITS INDIVIDUAL COMPONENTS. IT IS ONLY ONCE THESE UNIQUE PARTS ARE BROKEN DOWN INTO THEIR FUNDAMENTALS THAT THEIR TRUE PURPOSE, THEIR TRUE ESSENCE, IS REVEALED TO US. ONCE THIS ESSENCE IS DISCOVERED IT IS THEN POSSIBLE TO RECONTEXTUALIZE THE FRAGMENTS OF OLD INTO A DESIGN OF NEW. IT IS THIS TRANSFORMATION OF TECHNOLOGY FROM THE PAST INTO THE NEW CONTEXT OF THE PRESENT THAT ALLOWS FOR A REIMAGINING OF THE WORLD ON A NATURAL AND CULTURAL LEVEL.



FIGURE 2 | REVEAL

# THESIS NARRATIVE

INDUSTRY OF THE 20TH CENTURY WAS A BRUTAL YET ESSENTIAL WORLD. ON ONE HAND, THE UNRESTRICTED NATURE OF THIS BEAST ALLOWED FOR IMMENSE PROGRESS IN TERMS OF MODERNIZING TECHNOLOGY ON A WORLDWIDE SCALE. THE ABILITY TO PRODUCE, MANUFACTURE, AND TRADE COMMODITIES ACROSS THE GLOBE WITH EASE WAS A MONUMENTAL STEP FORWARD FOR HUMANITY. AS INDUSTRIAL TECHNOLOGY PROGRESSED IN AN EXPONENTIAL FASHION, THE WORLD AS A WHOLE BECAME SMALLER. INTERNATIONAL COOPERATION, AS WE KNOW IT TODAY, WOULD NOT BE POSSIBLE IF IT WERE NOT FOR THESE IMPORTANT, RAPID ADVANCEMENTS. BUT EVEN WITH ALL OF THE GOOD THAT HAS COME FROM THE MODERN ERA OF TECHNOLOGY, WE MUST TAKE NOTE OF, AND RESPONSIBILITY FOR, THE IRREVERSIBLE DAMAGE HAS BEEN DONE TO THE NATURAL AND CULTURAL WORLD AS A RESULT OF THIS RAPID EVOLUTION.

WE HAVE BECOME A SOCIETY THAT IS OBSESSED WITH THE IDEA OF PERFECTION—OF A UTOPIA—AND IT IS WITHIN THIS OBSESSION THAT WE HAVE LOST SIGHT OF THE TRUE PURPOSE OF TECHNOLOGY. ADVANCEMENT CAME PURELY AS A WAY TO ACHIEVE THIS PERFECTION. AS JONATHAN POWERS STATES IN CHORA, VOLUME SIX, “OURS IS A CULTURE HABITUATED TO THE SOCIAL MACHINE THAT IS UTOPIA. WE INTEND UTOPIA CONSTANTLY, MECHANICALLY, HAVING LOST THE AWARENESS THAT WE ARE DOING SO. THE PHANTOM POSSIBILITY OF ACTUALLY ACHIEVING UTOPIA HAUNTS OUR EVERY ENDEAVOR, SNEAKS INTO EVERY HOPE AND DREAM. WE PRACTICE UTOPIA CONSTANTLY IN OUR POSITIVISTIC SCIENCE, OUR TECHNOCRATIC SOCIAL STRUCTURES, OUR BANAL NOMENCLATURE, OUR OVER-FAMILIAR CONTEMPT FOR THE VISIBLE WORLD, AND, ABOVE ALL, OUR PEDAGOGY. AT EVERY STEP, WE PREPARE OUR WORLD AND OUR LIVES FOR THE ARRIVAL OF UTOPIA—ANY DAY NOW, SURELY—BY LIQUIDATING OUR WORLD, OUR KNOWLEDGE, OUR SOCIETY, AND OUR MINDS INTO THE CURRENCY OF IMAGES.” WE MUST TAKE IT UPON OURSELVES TO BREAK FREE OF THIS REDUCTIVE MINDSET—TO CHANGE THE CONTEXT IN WHICH WE EXPERIENCE THESE TECHNOLOGIES.

HOW CAN WE AS DESIGNERS CHANGE THE WAY THAT THESE SCARS OF THE TECHNOLOGY OF THE PAST SIT IN THE CONTEXT OF THE MODERN WORLD? I ARGUE THAT THE MOST EFFECTIVE MANNER FOR CHANGING THIS PERCEPTION IS RECONTEXTUALIZATION. PAUL RICOEUR DISCUSSES IN HIS ESSAY THE FUNCTION OF FICTION IN SHAPING REALITY HOW ALL FORMS OF FICTION THAT AN INDIVIDUAL COULD CONCEIVE, STEM FROM PREVIOUSLY LIVED EXPERIENCES; ONE CANNOT CREATE AN ORIGINAL IDEA FROM NOTHING AT ALL. HIS EXAMPLE DISCUSSES THE WORKS OF POETS AND PAINTERS, BUT THIS IS ALSO TRUE FOR ARCHITECTS AS ARCHITECTURE IS IN FACT THE POETIC USE OF FORMS TO CREATE LIVED EXPERIENCES. AT THE CORE OF WHAT AN ARCHITECT DOES IS THE RECONTEXTUALIZING OF INDIVIDUAL COMPONENTS. MATERIAL CHOICES, THE SHAPE THAT A ROOM TAKES, AND HOW LIGHT ENTERS A SPACE ARE ALL EXAMPLES OF THIS IN ACTION. WHAT I PROPOSE SHOULD BE DONE HERE INSTEAD OF THE DEMOLITION AND REPLACEMENT OF THE EXISTING IS THE REARRANGEMENT—TO TAKE THE PHYSICAL COMPONENTS OF THESE FACTORIES AND REMOLD THEM INTO SOMETHING NEW.



FIGURE 3 | UTOPIA

# PROJECT TYPOLOGY

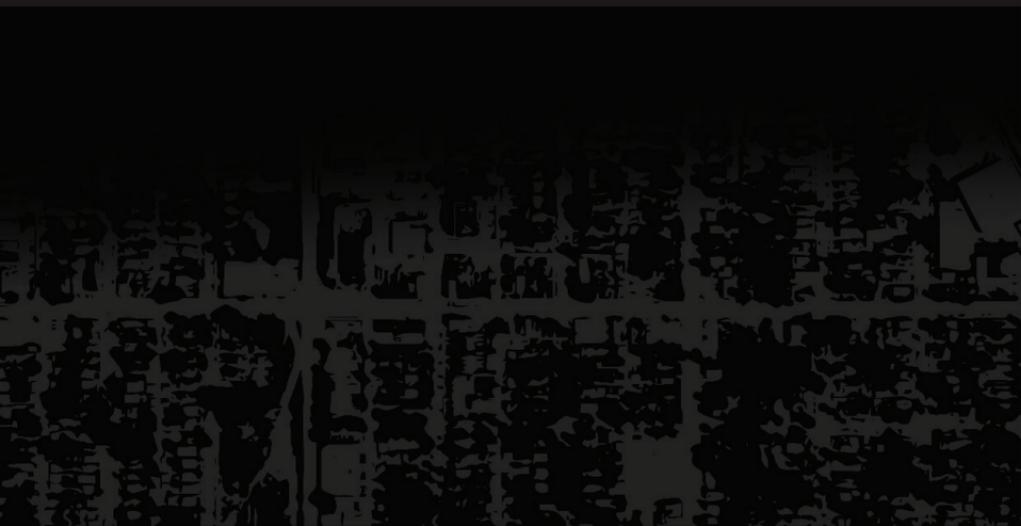


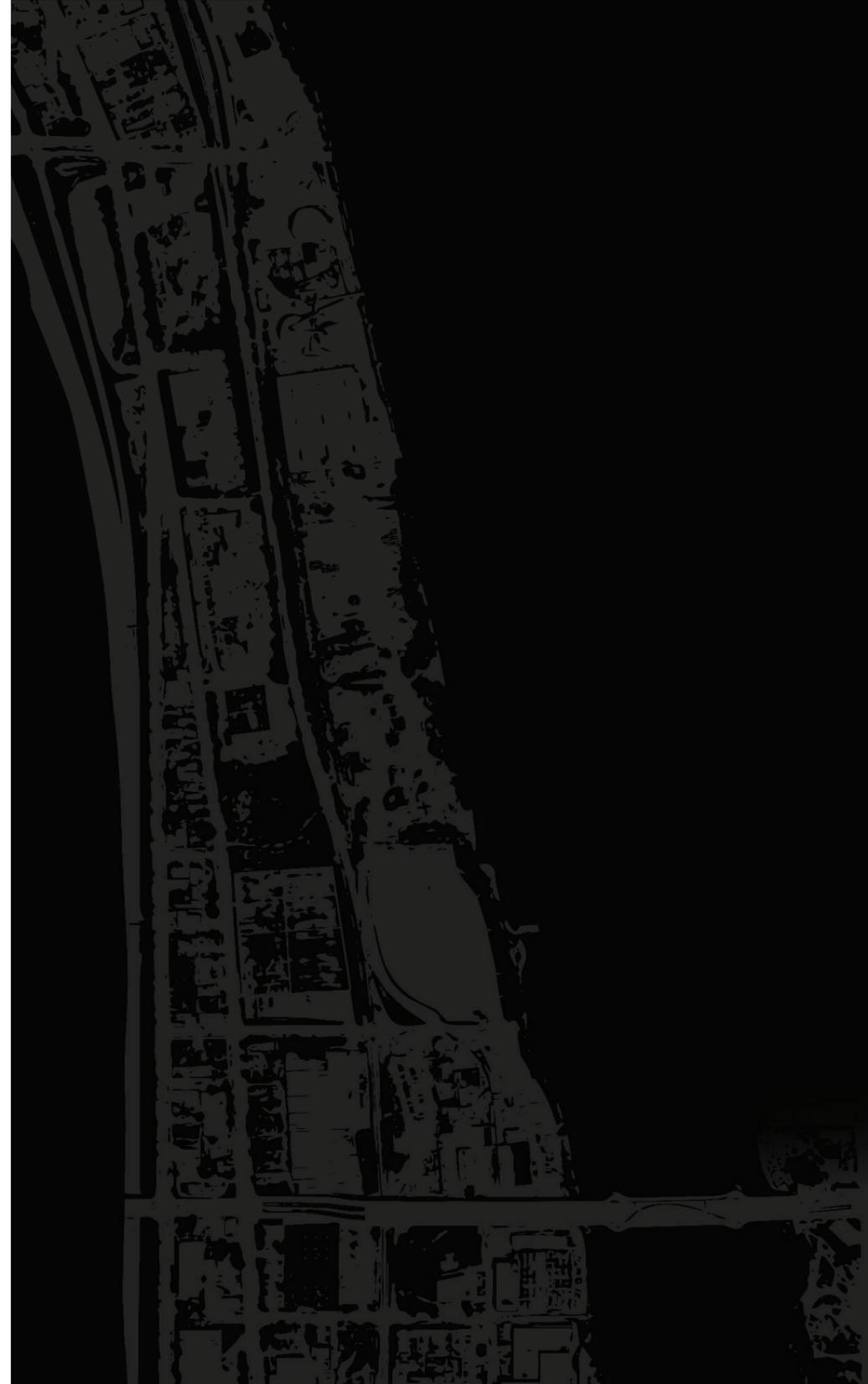
FIGURE 4



FIGURE 5

WHAT THIS THESIS AIMS TO DO IS TO REIMAGINE THE WAY THAT WE, AS HUMANS, LIVE AMONGST TECHNOLOGY OF THE PAST. THE WORLD OF INDUSTRY, AND THE TECHNOLOGY THAT MAKES MODERN INDUSTRY POSSIBLE, HAS LARGELY STOOD ON ITS OWN, SEPARATE FROM THE DAILY LIVES OF THE AVERAGE INDIVIDUAL. WHAT IF WE BRING THESE TWO REALMS TOGETHER? BY DOING SO A NEW PERSPECTIVE IS MADE POSSIBLE. A PERSPECTIVE THAT TAKES THE CONCEPTUAL IDEAS OF TECHNOLOGY THAT ONE WOULD HAVE IN THEIR HEAD AND REALIZES IT IN A TANGIBLE WAY. THIS PROJECT TAKES AN OUTDATED FACTORY, AND THE GROUNDS IT SITS UPON, AND CREATES A MODERN COOPERATIVE HOUSING DEVELOPMENT AIMED AT FILLING THE VOID THAT EXISTS IN THE AFFORDABLE HOUSING MARKET.





# TYPOTOLOGICAL RESEARCH CASE STUDIES

CO-OP CITY

LILAC

R50



# CO-OP CITY

CO-OP CITY, NEW YORK

1969

320 ACRES - 80% GREENSPACE

35 HIGH RISES - 7 TOWN HOMES - 15,372 UNITS - 8 PARKING GARAGES - 3 SHOPPING CENTERS - 25 ACRE EDUCATIONAL PARK - HIGH SCHOOL - 2 MIDDLE SCHOOLS - 3 GRADE SCHOOLS - PLANETARIUM - POWER PLANT - FIREHOUSE - 40+ OFFICES - 15 PLACES OF WORSHIP - 6 NURSERIES AND DAY CARES - 4 BASKETBALL COURTS - 5 BASEBALL DIAMONDS - MOVIE THEATER - SUPERMARKET



FIGURE 6



FIGURE 7

CO-OP CITY IS COOPERATIVE LIVING ON A MASSIVE SCALE. WITH OVER 35,000 RESIDENTS IT IS PROOF THAT COOPERATIVE LIVING ISN'T JUST FOR THE SMALL 20-PERSON COMMUNITY. IN FACT, CO-OP CITY IS THE LARGEST COOPERATIVE HOUSING DEVELOPMENT IN THE WORLD. THE MEDIAN HOME PRICE IN NEW YORK IS OVER \$800,000 AND TO PURCHASE YOUR UNIT IN CO-OP CITY YOU WILL PAY RIGHT AROUND \$20,000. HOW DOES THIS WORK?

HOW DOES THIS WORK? WELL, WHEN YOU BUY INTO THE PROPERTY YOU AGREE THAT IF YOU DO DECIDE TO SELL IN THE FUTURE THAT YOU WILL SELL FOR THE SAME PRICE YOU PURCHASED AT. THIS AGREEMENT, AS WELL AS A RELATIVELY SMALL MONTHLY SERVICE CHARGE AND THE OCCASIONAL ADJUSTMENT FOR INFLATION, KEEP THE IDEA OF LIVING IN URBAN NEW YORK WITHIN THE REACH OF THE AVERAGE WORKING-CLASS CITIZEN. NOT ONLY DOES THIS MODEL KEEP CO-OP CITY FUNCTIONING, IT HAS LED TO ITS THRIVING PROSPERITY. AT A TIME WHEN MANY NEW YORK PUBLIC HOUSING OPTIONS ARE GOING BELLY-UP, OR SELLING TO PRIVATE DEVELOPERS, CO-OP CITY IS AMBITIOUSLY RENOVATING. THE BUDGET FOR THE COMMUNITY IS CURRENTLY SET THROUGH 2020, AND THERE IS NO REASON TO BELIEVE THEY WON'T BE STABLE GOING WELL PAST THAT DATE.



FIGURE 8



FIGURE 9



FIGURE 10

# LILAC

LEEDS, ENGLAND

2013

7500M<sup>2</sup> SITE

20 UNITS - 50 RESIDENTS

20 APARTMENT UNITS - 50 RESIDENTS -  
COMMON HOUSE - COMMUNITY KITCHEN AND LAUNDRY - COM-  
MUNAL GARDENS  
- CENTRALIZED PARKING - WORK SHED -  
RETAINING POND



FIGURE 11

LILAC, WHICH STANDS FOR LOW IMPACT LIVING AFFORDABLE COMMUNITY, IS AN EXAMPLE OF HOW SAVVY FINANCIAL THINKING AND A FOCUS ON SUSTAINABLE LIVING CAN LEAD TO A SUCCESSFUL HOUSING DEVELOPMENT. THIS IS DONE WITH WHAT IS CALLED MUTUAL HOME OWNERSHIP (MHO). THE GOAL OF AN MHO IS TO SHIFT THE WAY YOU OWN PROPERTY. INSTEAD OF A LONG TERM INVESTMENT AIMED AT MAKING THE INVESTOR AS MUCH MONEY AS POSSIBLE, THE CHANGE IS TO MAKE THE PROPERTY AS FUNCTIONAL AS POSSIBLE, AND IN THAT FUNCTION YOU FIND YOUR VALUE. THERE IS A SINGULAR MORTGAGE FOR THE ENTIRE PROPERTY THAT EACH OWNER PAYS A PORTION OF. THE TOTAL COST IS DIVIDED INTO SHARES, WHERE THE AMOUNT OF SHARES AN OWNER HAS IS RELATED TO THEIR INCOME. IF YOU EARN MORE MONEY YOU WILL PAY A LARGER PORTION OF THE TOTAL COST, BUT YOU ALSO OWN MORE EQUITY IN THE PROJECT.



FIGURE 12



FIGURE 13



FIGURE 14

ENVIRONMENTALLY, LILAC IS A GREAT EXAMPLE OF LOW IMPACT LIVING, LIKE THE NAME SUGGESTS. OF ALL OF THE SUSTAINABLE DESIGN CONCEPTS USED IN LILAC'S CONSTRUCTION, THE WALL PANELS MIGHT BE THE MOST INNOVATIVE. THE BUILDING SYSTEM FROM MODCELL USES PRE-FABRICATED TIMBER PANELS ARE STUFFED WITH INSULATED STRAW BALE AND COATED WITH LIME-BASED PLASTER; THE WHOLE CONSTRUCTION IS THEN SEALED TO BE AIRTIGHT. THIS CONSTRUCTION SYSTEM IS AROUND THREE TIMES BETTER AT INSULATION THAN CODE REQUIRES FOR IN THIS AREA OF ENGLAND. WHEN IT IS COMPARED TO TRADITIONAL HOME CONSTRUCTION, INSTEAD OF PRODUCING AROUND 50 TONS OF CARBON DIOXIDE, THIS STRAW BALE INSULATION ACTUALLY SEQUESTERS 12 TONS OF CO<sup>2</sup>.



FIGURE 15



FIGURE 16



FIGURE 17



FIGURE 18



FIGURE 19

# R50

BERLIN, GERMANY

2013

2037M<sup>2</sup>

19 APARTMENT UNITS - 1 STUDIO APARTMENT -  
6 STORIES - ACTIVE BASEMENT - ATTIC -  
ROOFTOP TERRACE - WRAP AROUND DECKS - COMMON LOUNG-  
ES - COMMUNITY KITCHEN - OPEN GREEN SPACE - MODULAR  
ROOM ASSEMBLY - APARTMENTS TO SPEC



FIGURE 20

R50 SHARES SOME FUNDAMENTAL ASPECTS WITH OTHER COOPERATIVES AND CO-LIVING DEVELOPMENTS, BUT IN GENERAL THIS PROJECT HAS SOME KEY DIFFERENCES. THE IDEOLOGY OF THE PROJECT IS A SIMILAR STORY TO MANY OTHER COMMUNAL LIVING DEVELOPMENTS. THE COST OF BUYING OR RENTING A DECENT PIECE OF PROPERTY IN AN URBAN SETTING, IN THIS CASE BERLIN, HAS BECOME UNATTAINABLE TO THE VAST MAJORITY OF THE PEOPLE IN THE CITY. TYPICAL DEVELOPER-DRIVEN CONSTRUCTION, MEANT TO CREATE A QUICK PROFIT, IS THE NORM WHEN IT COMES TO NEW CONSTRUCTION, BUT THIS LEADS TO QUICKLY INFLATED HOUSING COSTS AS VALUES INCREASE AFTER EACH SALE OF PROPERTY. BAUGRUPPE IS THE GERMAN WORD FOR "BUILDING GROUPS" AND IT IS A MODEL OF BUILDING CONSTRUCTION THAT IS LED BY AN ARCHITECT BUT FUNDED COLLECTIVELY BY THE WHOLE OF THE TENANTS. THE DESIGNERS HAD AN OVERALL VISION FOR THE PROJECT IN TERMS OF MATERIALS, FUNCTION, AND COMMON SPACES, BUT WHEN IT COMES TO THE LAYOUT OF EACH OF THE INDIVIDUAL HOUSING UNITS IT WAS PRIMARILY UP TO THE RESIDENTS. EACH FAMILY OR INDIVIDUAL WHO WAS INVESTING IN THE BUILDING WAS ABLE TO LAY OUT THEIR APARTMENT TO BEST FIT THEIR OWN LIFESTYLE.





FIGURE 21

THE DESIGNERS OF R50 WERE SURE TO BE ENVIRONMENTALLY CONSCIOUS IN DESIGNING THE BUILDING. BY USING PREFABRICATED CONSTRUCTION COMPONENTS MASS PRODUCTION OF BUILDING BLOCKS TO COMPLETE THIS PROJECT WAS ATTAINABLE. MANY ASPECTS OF THE CONSTRUCTION WERE LEFT "UNFINISHED" SUCH AS EXPOSED CONCRETE FLOORS AND BLANK WOODEN WALLS. THIS NOT ONLY KEEPS COST OF CONSTRUCTION DOWN, BUT IT PREVENTS THE WASTE OF EXCESS MATERIALS. A RESIDENT IS ALLOWED TO INSTALL FLOOR OR WALL COVERINGS, BUT IT IS AT THEIR OWN DISCRETION; THEY CAN DO IT THEIR WAY.

WHAT WE TAKE FROM THIS EXAMPLE IS THE INVOLVEMENT OF TENANTS FROM THE BEGINNING OF THE DESIGN. ONE THING THAT COMMONLY LEADS TO THE FAILURE OF HOUSING DEVELOPMENTS IS THE LACK OF FOCUS GIVEN TO THE PEOPLE WHO ACTUALLY LIVE IN THE BUILDINGS. WHEN YOU INVOLVE THE INDIVIDUALS FROM THE BEGINNING YOU NOT ONLY CREATE TAILOR-MADE SPACES FOR EACH FAMILY, BUT YOU CREATE A SENSE OF COMMUNITY RIGHT OFF THE BAT. BY DESIGNING IN A MODULAR WAY YOU CREATE SPACES THAT CAN BE CHANGED WHEN PEOPLE EVENTUALLY MOVE OUT AND NEW PEOPLE, WITH DIFFERENT LIFESTYLES, MOVE IN.



FIGURE 22



FIGURE 23



FIGURE 24

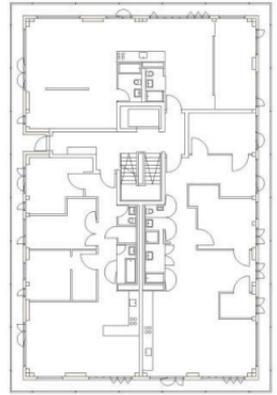
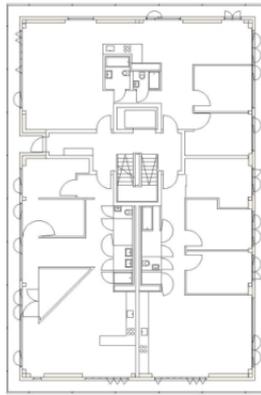
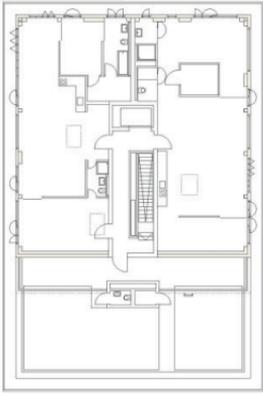
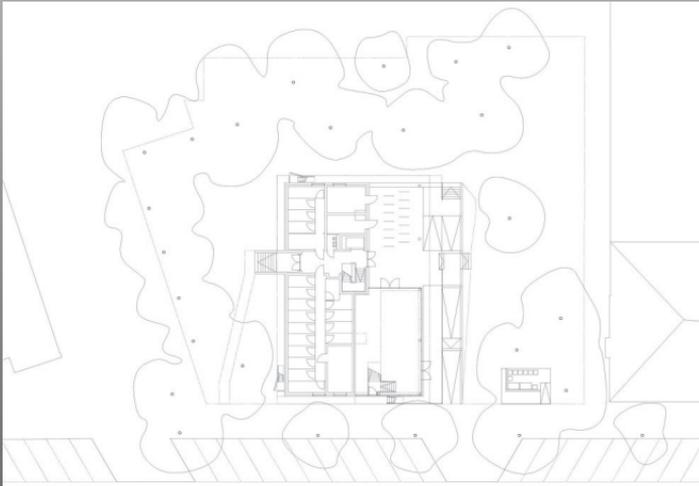


FIGURE 25



# TYPOTOLOGICAL RESEARCH SUMMARY

THROUGH THESE CASE STUDIES WE LOOKED AT THREE  
DIFFERENT  
EXAMPLES OF HOW TO IMPLEMENT A COOPERATIVE  
HOUSING  
DEVELOPMENT. EACH PROJECT HAS BOTH ITS UPSIDES  
AS WELL AS ITS FLAWS, THEREFORE WE MUST TAKE  
ASPECTS FROM EACH CASE AND IMPLEMENT THEM INTO  
THIS THESIS. EACH OF THESE PROJECTS ARE LOCATED  
ON A DIFFERENT PART OF THE GLOBE. NEW YORK, BER-  
LIN, AND LEEDS ARE ALL CONTEXTUALLY VERY DIFFER-  
ENT FROM EACH OTHER. THESE DIFFERENCES SHOW  
THAT THE COOPERATIVE MODEL IS  
RESILIENT, AND THAT LOCATION AND CULTURE AREN'T  
RESTRICTIVE  
FACTORS WHEN IT COME TO MOVING FORWARD WITH THE  
IDEA OF  
PLACING A CO-OP IN MINNEAPOLIS.

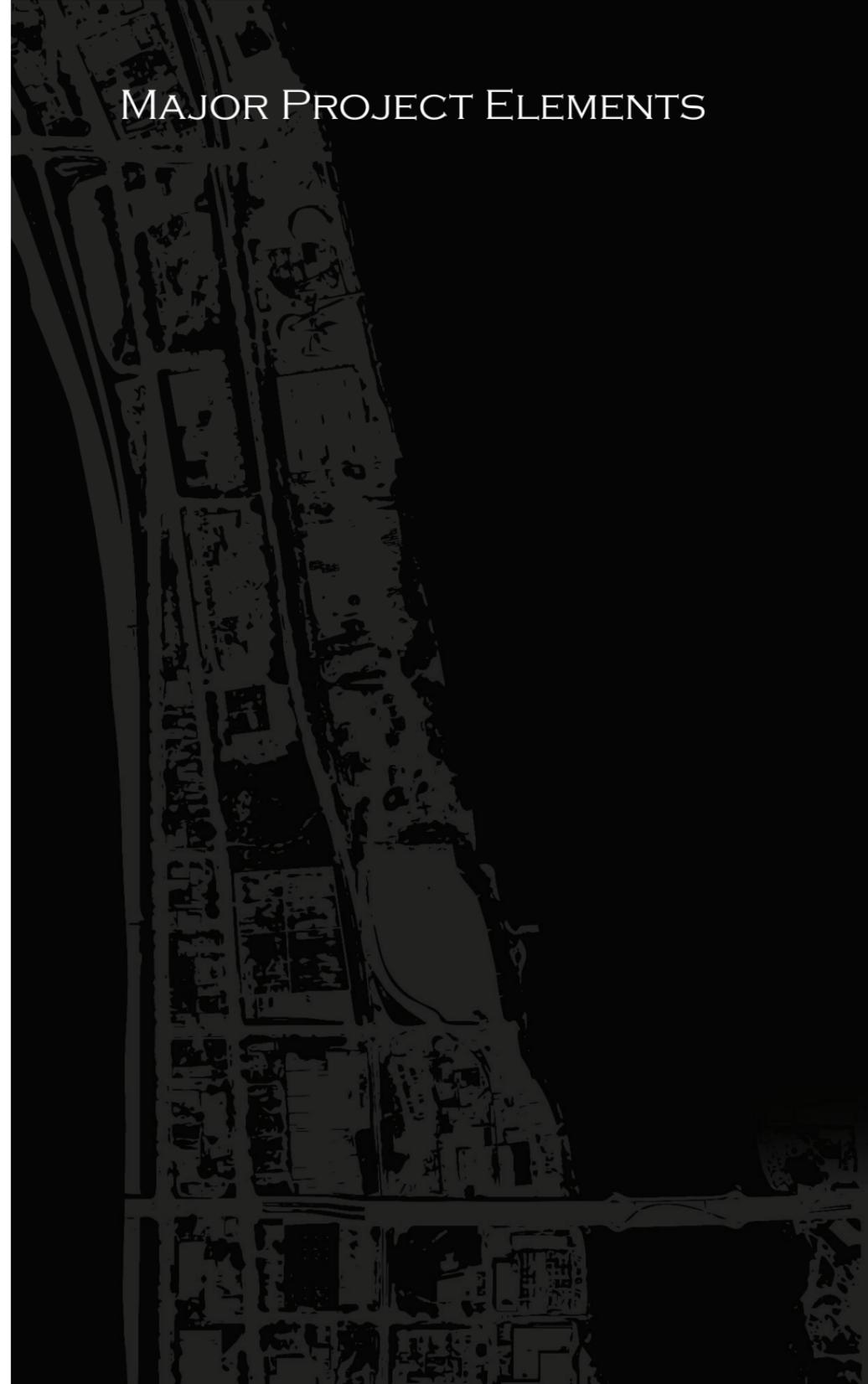
WE ALSO LOOKED AT THREE DIFFERENT PROJECTS THAT  
ALL DIFFER IN SCALE. ALTHOUGH TYPICALLY CO-OPS  
OPERATE ON A SMALLER SCALE, THE EXAMPLE OF CO-OP  
CITY, NEW YORK IS PROOF THAT GROWTH IS POSSIBLE  
WITHIN THESE COMMUNITIES. WHAT MATTERS THE MOST  
IN CREATING A TIGHT COMMUNITY ISN'T THE AMOUNT OF  
PEOPLE, BUT THE SHARING A SIMILAR SET OF MORALS.

THE R50 AND LILAC PROJECTS ARE VERY HELPFUL EXAMPLES OF HOW TO TAKE SUSTAINABILITY INTO ACCOUNT WHEN DESIGNING MULTI-FAMILY HOUSING. BY BUILDING MODULARLY AND WITH PREFABRICATED BUILDING BLOCKS NOT ONLY IS PROJECT COST REDUCED, BUT THE NEGATIVE IMPACTS OF CONSTRUCTION ARE MINIMIZED. IN A WORLD WHERE MORE AND MORE PEOPLE ARE PUTTING VALUE IN SUSTAINABLE LIVING, BEING ON THE FOREFRONT OF THESE IDEAS ASSURES LONGEVITY IN TERMS OF QUALITY OF LIFE IN THESE BUILDINGS.

FROM A FINANCIAL PERSPECTIVE EACH PROJECT TACKLED THIS ISSUE IN A DIFFERENT WAY BUT WITH THE SAME END GOAL OF KEEPING PROPERTY OWNERSHIP LOW. AT THE CORE, EACH PROJECT WAS BUILT TO FIGHT AGAINST THE RAPIDLY RISING COST OF LIVING. AT A TIME WHEN OWNING YOUR OWN HOUSE OR APARTMENT IS BECOMING MORE AND MORE OUT OF REACH FOR THE AVERAGE WORKING INDIVIDUAL, THESE ALTERNATIVES TO THE DEVELOPER-DRIVEN OPEN MARKET SEEM LIKE A BETTER WAY FOR THE MASSES TO GET INTO THE WORLD OF HOME OWNERSHIP.

OVERALL, EACH OF THESE EXAMPLES OF COOPERATIVE LIVING BRING SOMETHING IN TERMS OF VALUE TO THE TABLE. FINANCIALLY, ENVIRONMENTALLY, AND AESTHETICALLY THERE ARE MANY POSITIVES TO TAKE AND MOVE FORWARD WITH FOR THIS THESIS. IT IS NOW CLEAR TO ME IN WHAT IT TAKES TO CREATE A SUCCESSFUL COOPERATIVE COMMUNITY, AND IN THE END RESULT OF THIS PROJECT IT WILL BE CLEAR THAT INFLUENCE WAS TAKEN FROM EACH OF THESE CASE STUDIES.

# MAJOR PROJECT ELEMENTS



## APARTMENT UNITS

WE START BY TAKING ONE OF THE FACTORY'S TALL RECTANGULAR TOWERS AND LAY IT HORIZONTALLY ON THE GROUND. THEN, THE TOWER IS CUT LENGTHWISE INTO THIRDS; THIS ALLOWS FOR THE CREATION OF THREE INDIVIDUAL FLOORPLATES. EACH OF THESE THREE LAYERS IS THEN FURTHER SUBDIVIDED INTO FIVE SEPARATE HOUSING UNITS. SURROUNDING THE RECTANGULAR MASS LIKE AN EXOSKELETON IS THE STRUCTURE FROM ONE OF THE FORMER VERTICAL ELEMENTS OF THE FACTORY. ATOP THIS STRUCTURE WE PLACE THE ROOF—A WEDGE PULLED FROM ONE OF THE SILOS AND REPURPOSED AS THE COVERING FOR THE DWELLINGS.

## PLANETARIUM

BY BEGINNING WITH ONE OF THE EXISTING DOMES OF THE NORTHERN FACTORY, WE LIFT THE HEMISPHERE VERTICALLY FROM THE GROUND AND WE COMPLETE THE FORM BY CREATING A SPHERE. WE THEN TAKE A TOWER FROM ELSEWHERE ON THE SITE. HOLLOW IT OUT, SHORTEN IT, AND REPOSITION IT TO BECOME THE ENTRYWAY TO THIS MASSIVE ORB. AGAIN, IT IS THE DECONSTRUCTION AND MANIPULATION OF THIS EXISTING TECHNOLOGY THAT BECOMES THE NEW WAY FOR EXPERIENCING THE OLD. A POETIC TRANSFORMATION FROM SOMETHING BUILT PURELY FOR FUNCTION INTO SOMETHING THAT CAN INSPIRE AND RELINK THE HUMAN EXPERIENCE TO THAT OF THE COSMOS. IT DOES THIS LITERALLY BY BEING A SPACE FOR AN INDIVIDUAL TO EXPLORE THE HEAVENS, BUT IT ALSO DOES SO ON A DEEPER LEVEL THROUGH THIS TRANSFORMATION OF PARTS.

# USER/CLIENT DESCRIPTION



FIGURE 26

BUT WHAT IS TO BECOME OF THE NEW SITE? WHAT PURPOSE WILL IT SERVE? WELL, THE SITE SITS WITHIN THE MCKINLEY NEIGHBORHOOD. A NEIGHBORHOOD OF STATISTICALLY LOWER INCOME THAT IS A MELTING POT OF DIFFERENT CULTURES AND NATIONALITIES. COST OF LIVING IS RAPIDLY INCREASING, CHAINS AND FRANCHISES ARE REPLACING THE LOCAL BUSINESSES, AND TENSIONS ARE RISING BETWEEN THOSE WHO HAVE ALWAYS CALLED THIS AREA HOME AND THOSE WHO ARE MOVING IN TO TAKE ADVANTAGE OF CHEAP REAL ESTATE. ALL OF THESE ISSUES ADD UP TO THE LESSER-OFF BEING PUSHED AWAY FROM THEIR NEIGHBORHOOD AT NO FAULT OF THEIR OWN. WITH THE LOSS OF THESE PEOPLE WE ALSO SEE A LOSS OF THEIR CULTURE. IN ORDER TO SUIT THE POTENTIAL CLIENTELE, THE UNITS ARE DESIGNED TO BE FLEXIBLE SPACES CAPABLE OF SUPPORTING A VARIETY OF DIFFERING CULTURAL LIFESTYLES—FROM THOSE THAT WE MAY FIND FAMILIAR THROUGH THOSE THAT WE WOULD DEEM AS DIFFERENT, ALL ARE CAPABLE OF CALLING THIS PLACE HOME.



# THE SITE

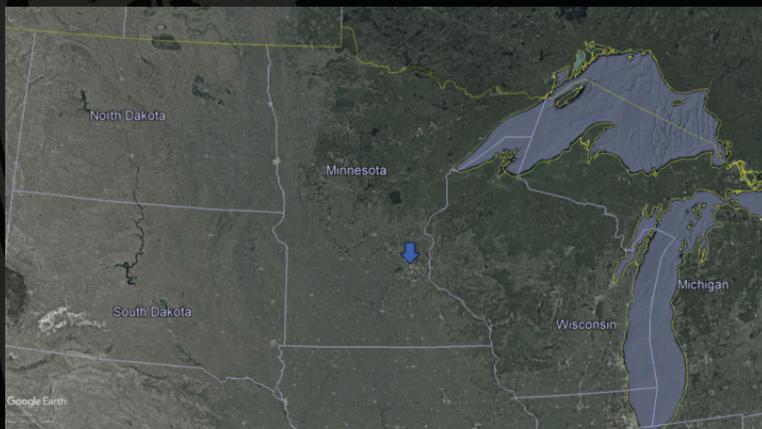


FIGURE 27

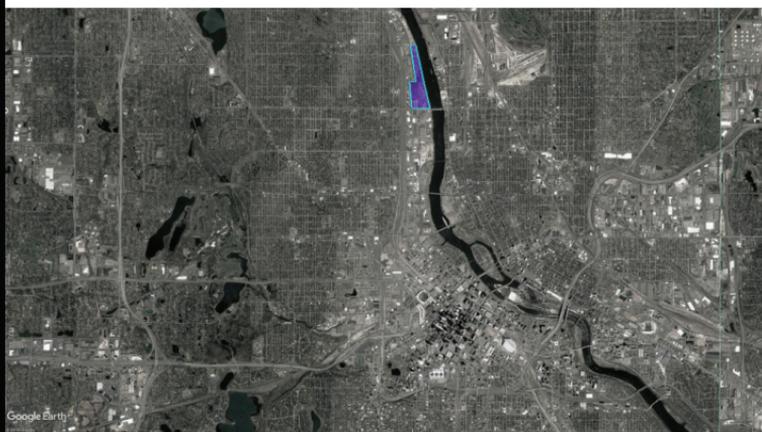
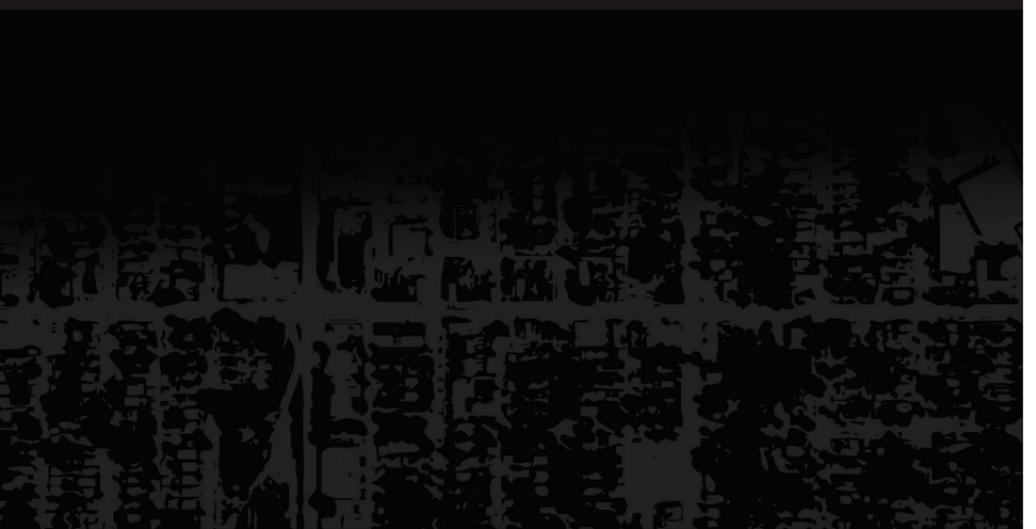


FIGURE 28

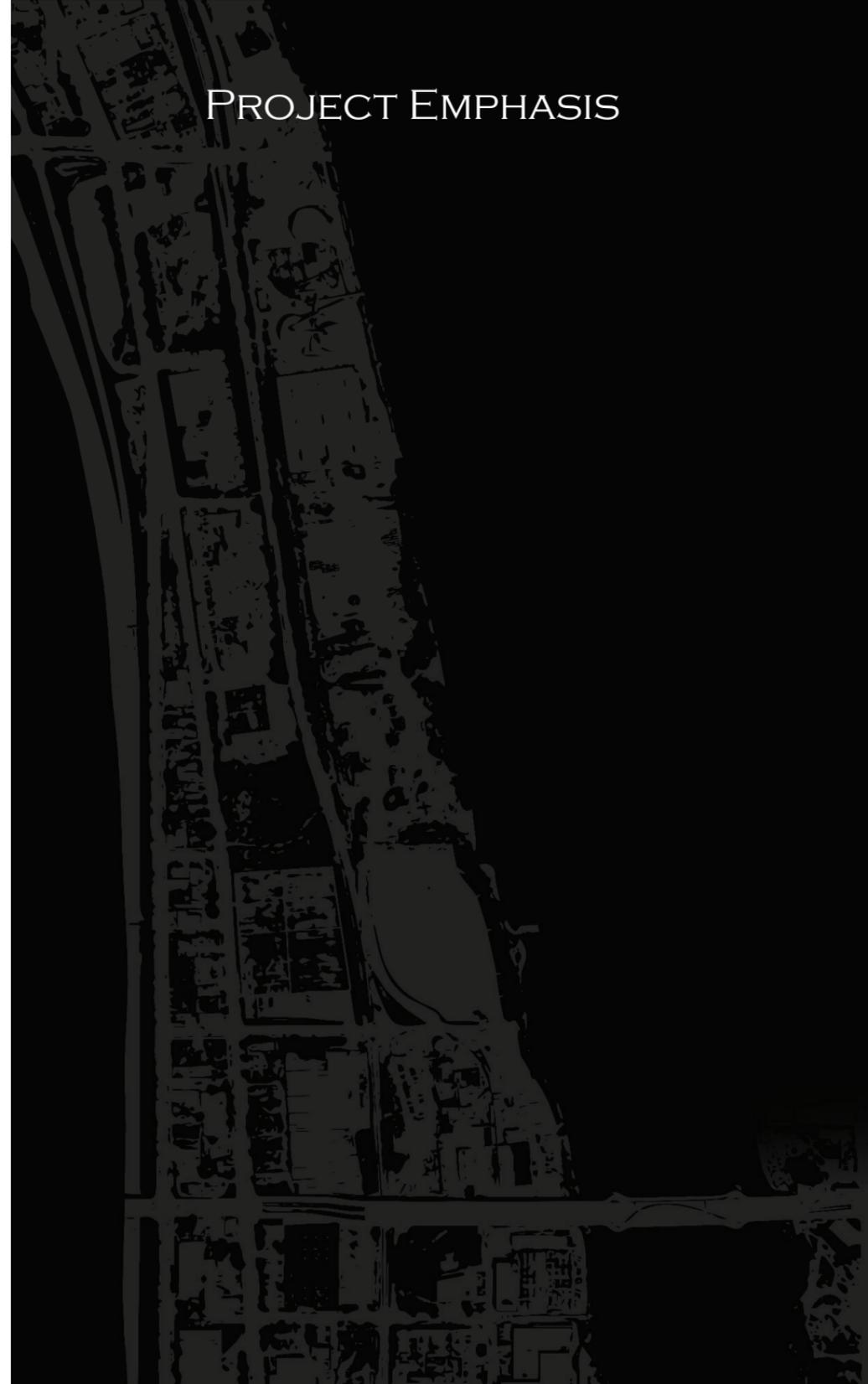


FIGURE 29

MINNEAPOLIS IS A CITY FULL OF NEIGHBORHOODS WITH DISTINCT CHARACTERISTICS. BECAUSE OF THESE DIFFERENCES, YOU SEEN ENTIRE NEIGHBORHOODS GO THROUGH LARGE CULTURAL SHIFTS IN RATHER SHORT AMOUNTS OF TIME. ONE OF THESE SHIFTS IS WHEN NEIGHBORHOODS OF CHEAP, OLDER, LESS CARED FOR HOMES START GETTING BOUGHT UP BY DEVELOPERS WHO THEN REMODEL OR REPLACE THEM. THESE NEW CONSTRUCTIONS THEN SELL FOR A MUCH HIGHER PRICE POINT MAKING THE NEIGHBORHOOD UNAFFORDABLE TO THE RESIDENTS WHO HAVE LIVED THERE ALL THEIR LIVES. BECAUSE MINNEAPOLIS IS A CITY OF TRENDS, ALL IT TAKES IS A FEW PROPERTIES TO TURN OVER AND THE NEXT THING YOU KNOW THE ENTIRE NEIGHBORHOOD IS INDISTINGUISHABLE FROM ITS OLD SELF. THE NEIGHBORHOODS OF NORTH MINNEAPOLIS ARE NOW STARTING TO TURN OVER WHICH MAKES THEM A PRIME LOCATION TO TAKE ACTION IN FIGHTING THE HARSH CHANGE.



# PROJECT EMPHASIS



## TRANSFORMATION

RECONTEXTUALIZE TRACES OF EXISTING  
TECHNOLOGY AND INDUSTRY ON THE CHOSEN  
SITE INTO A COOPERATIVE HOUSING  
DEVELOPMENT.

## URBAN DESIGN

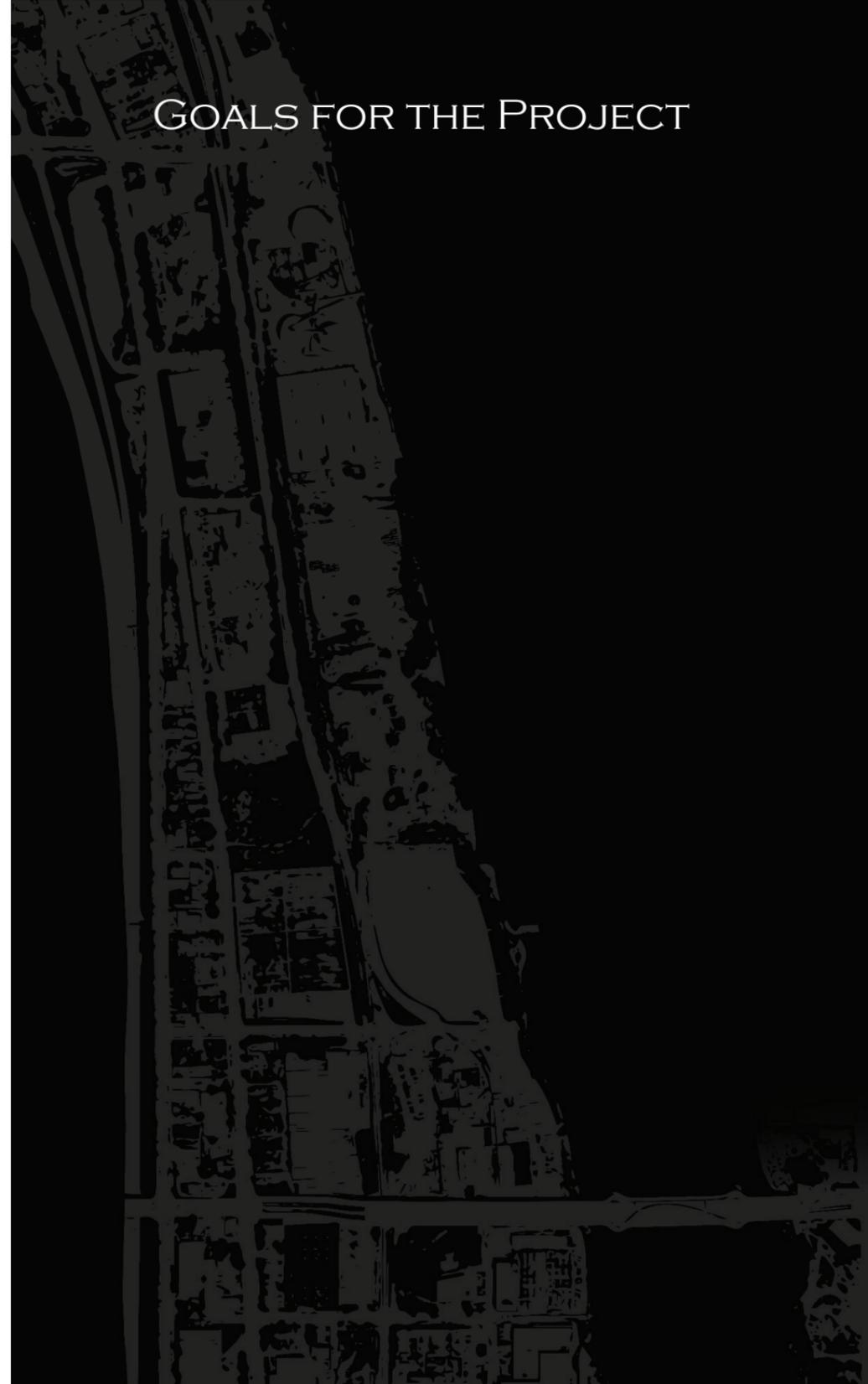
REVITALIZE AN  
INDUSTRIAL AREA ON THE OUTSKIRTS OF A  
HISTORIC NEIGHBORHOOD CREATING A  
USABLE CONNECTION TO THE  
MISSISSIPPI RIVER.

## SUSTAINABILITY

IN THE PROCESS OF TRANSFORMING THE  
TECHNOLOGY OF OLD INTO NEW, USE  
SUSTAINABLE DESIGN SOLUTIONS TO CREATE  
A BETTER FUTURE FOR ALL.



# GOALS FOR THE PROJECT



## PERSONALLY

CHANGE THE WAY THAT I VIEW AND  
APPROACH ADAPTIVE REUSE PROJECTS

CREATE AN IMPROVED WORKFLOW

## PROFESSIONALLY

CREATE A COHESIVE DESIGN ACROSS ALL  
ASPECTS OF THE THESIS PROJECT

## ACADEMICALLY

STUDY COOPERATIVE DEVELOPMENTS  
AROUND THE WORLD

EXPLORE HOW SOCIETY VIEWS TECHNOLOGY  
AND HOW TO POSSIBLY CHANGE THESE VIEWS



# LITERATURE REVIEWS

125 HAUS

## DESIGN STRATEGIES TOWARDS HIGH PERFOR- MANCE MARKET RATE HOUSING: THE 125 HAUS IN UTAH

AUTHOR: JOERG RUEGEMER

THIS ARTICLE WAS PUBLISHED IN 2011 TO DESIGN PRINCIPLES AND PRACTICES: AN INTERNATIONAL JOURNAL. THE ACCOMPANYING STUDY THAT WAS CONDUCTED EXPLORED THE CONCEPT OF DESIGNING HIGHLY ENERGY EFFICIENT, COST-EFFECTIVE SINGLE-FAMILY HOMES FOR A COST AT OR BELOW THE MARKET RATE. THE SPECIFIC PROJECT THAT CAME FROM THIS DESIGN EXERCISE IS KNOWN AS THE 125 HAUS. IT IS LOCATED IN PARK CITY, UTAH. LOCATION IS IMPORTANT HERE



FIGURE 30

THE GOALS FOR THE PROJECT WERE AS FOLLOWS:

- COMPACT, MODERATE SIZE HOUSE FOR A FAMILY OF FOUR, INCLUDING A STUDIO
  - SMALLEST POSSIBLE IMPACT ONTO THE SITE
- SUPERIOR ARCHITECTURAL DESIGN, ROOTED IN THE REGIONAL CONTEXT
- HIGH QUALITY AND HIGHLY FUNCTIONAL / MULTI-FUNCTIONAL SPACES
- 90% ENERGY-EFFICIENCY OVER THE 2006 IECC CODE-COMPLIANT STANDARD
- INTEGRATED ENERGY MODELING TO OPTIMIZE DESIGN AND PASSIVE STRATEGY
- PROJECT DOCUMENTATION, 1-YEAR POST-OCCUPANCY MONITORING AND EVALUATION TO PROVE EFFICIENCY
- STANDARD CONSTRUCTION METHODS AND BUILDING COMPONENTS
  - HIGH MARKET-TRANSFERABILITY
  - MINIMAL TECHNOLOGY
- COSTS TO BE AT OR BELOW MARKET RATE



FIGURE 31

WHAT THIS STUDY DISCOVERED ABOUT AFFORDABLE, EFFICIENT HOUSING WAS THAT COMMUNICATION WAS THE ISSUE THAT CAUSED THE MOST PROBLEMS. IN THE CONSTRUCTION BUSINESS THERE ARE MANY DIFFERENT PARTIES INVOLVED IN THE PROCESS THAT SPANS FROM CONCEPTUAL DESIGN ALL THE WAY TO FINAL COMPLETION OF CONSTRUCTION.

EACH PARTY OBVIOUSLY SPECIALIZES IN DIFFERENT ASPECTS OF THIS PROCESS, BUT IT IS BECAUSE THEY ARE ALL SEPARATE THAT A PROJECT CAN LOSE SIGHT OF ITS ORIGINAL CONCEPTUAL ESSENCE. IT IS OF DIRE IMPORTANCE FOR A PROJECT OF THIS NATURE THAT STRONG COLLABORATION TAKE PLACE AMONGST EACH OF THE TEAMS INVOLVED.

THE MOST USEFUL INFORMATION THAT CAN BE TAKEN FROM THE 125 HAUS PROJECT AND APPLIED TO MY PERSONAL THESIS IS SIMPLY THE FEASIBILITY OF ATTEMPTING A PROJECT LIKE THIS IN MINNEAPOLIS. THERE ARE PARALLELS THAT CAN BE DRAWN BETWEEN THE TWO PROJECTS. FIRST IS THE EMPHASIS PUT ON COST-EFFECTIVENESS AND SUSTAINABILITY. THESE CONCEPTS ARE EASY TO REALIZE ON THEIR OWN, BUT ASSURING THAT BOTH IDEAS ARE PRESENT IN THE SAME PROJECT TAKES THOROUGH PLANNING AND EXECUTION. SECONDLY, IS THE LOCATION OF THIS PROJECT. 125 HAUS IS LOCATED IN A COLD WEATHER CLIMATE, AND BECAUSE OF THIS THE HOUSE MUST BE CAPABLE OF BEING A COMFORTABLE LIVING SPACE IN ALL FOUR SEASONS OF THE YEAR.



# LITERATURE REVIEWS

## GREEN TECH. ASSESSMENT

A QUALITATIVE ASSESSMENT OF EXPERIENCES  
WITH SELECTED GREEN TECHNOLOGIES IN AFFORD-  
ABLE MULTIFAMILY HOUSING.

AUTHORS: BECKY L. YUST, MICHAEL URNESS, DEB-  
ORAH  
MITCHELL, WILLIAM G. WEBER, AND ABBIE LOOSEN

THIS STUDY, CONDUCTED BY THE UNIVERSITY OF  
MINNESOTA, EXPLORED WHAT ASPECTS OF CERTAIN  
ENERGY-EFFICIENCY  
RELATED TECHNOLOGIES PROVED TO BE EITHER  
EFFECTIVE IN THEIR PURPOSE OR INEFFECTIVE. THE  
STUDY LOOKED FOR  
ATTRIBUTES OF SUSTAINABLE LIVING THAT WERE  
PERCEIVED AS POSITIVE AND EFFECTIVE; AN EMPHA-  
SIS WAS PUT ON THE DESIGN OF THE BUILDING AND  
ITS SYSTEMS. INTERVIEWS WERE CONDUCTED WITH  
THE BUILDING OWNERS, ARCHITECTS,  
MANAGERS, AND RESIDENTS; THIS ASSURED THAT  
PEOPLE  
INVOLVED WITH EACH STAGE OF THE BUILDING PRO-  
CESS WERE GIVEN A VOICE. ALL OF THE INFORMA-  
TION GATHERED WAS  
FILTERED INTO THE FOLLOWING CATEGORIES:

- COST
- DESIGN CHOICES
- REGULATIONS
- ENERGY AND EFFICIENCY
- MAINTENANCE AND EDUCATION
- SATISFACTION AND QUALITY OF LIFE

## COST:

PREDICTABLY, RESIDENTS PREFER WHEN THE COST OF LIVING IS LOWER RATHER THAN HIGHER; THIS IS A GIVEN. IN THE CASE OF THIS STUDY, THE RESIDENTS THAT PARTICIPATED WERE ALL OF LOW-INCOME STATUS SO LOW COST WAS A STRICT REQUIREMENT. ONE TECHNIQUE THAT HAD PROVEN EFFECTIVE IN KEEPING ELECTRICITY COSTS DOWN WAS BEING SURE THAT THE RESIDENTS WERE RESPONSIBLE FOR THEIR OWN UTILITY COSTS. IN RESIDENCES WHERE UTILITIES WERE INCLUDED IN RENT, IT WOULD BE THAT THE TENANTS WOULD ABUSE THE THERMOSTAT CAUSING MORE ENERGY CONSUMPTION BY THE BUILDING.

## DESIGN CHOICES:

IN TERMS OF DESIGN, THERE WAS A DIFFERENCE OF OPINION BETWEEN THE BUILDING DESIGNERS AND THOSE WHO OPERATE THE BUILDINGS. IN GENERAL, THOSE WHO OPERATED THE BUILDINGS ON A DAILY BASIS DIDN'T AGREE WITH CERTAIN FEATURES THAT WERE CHOSEN BY THE ARCHITECTS. ASSURING THAT THE PEOPLE THAT ACTUALLY SPEND THEIR TIME IN THE FINISHED BUILDINGS ARE SATISFIED WITH ALL ASPECTS OF THE DESIGN IS KEY IN THE LONGEVITY OF THE PROJECT.

## REGULATIONS:

CERTAIN INCENTIVES ARE AVAILABLE TO DESIGNERS TO BUILD TO A CERTAIN LEVEL OF SUSTAINABILITY AND ENERGY EFFICIENCY. THE SPECIFICS OF THE INCENTIVES ARE UNIQUE TO THE SITE THAT THEY ARE BUILT ON.

## ENERGY AND EFFICIENCY:

THE PARTICULAR ISSUE THAT WAS RAISED IN TERMS OF ENERGY EFFICIENCY WAS THAT THERE IS NO GOOD WAY TO CHANGE OR ADJUST THE SOURCE OF SUPPLIED ENERGY. WHEN ONE SYSTEM IS INSTALLED, IT MUST STAND AS THE PRIMARY SYSTEM; IF THE BUILDING'S PRIMARY SYSTEM IS NATURAL GAS, BUT IT ALSO HAS SOLAR INSTALLED THAT IS RATED UP TO A CERTAIN POINT, THE SYSTEMS WOULD NOT WORK SIDE-BY-SIDE. THIS ISSUE APPEARED TO BE SPECIFIC TO A SINGLE BUILDING, BUT IT MUST BE TAKEN INTO ACCOUNT THAT MULTIPLE SYSTEMS SHOULD BE DESIGNED TO RUN IN PARALLEL WITH EACH OTHER.

## MAINTENANCE AND EDUCATION:

IT IS ESSENTIAL FOR THE PROPER CARE AND EDUCATION OF A BUILDING THAT ANY BUILDING MANAGERS, OR RESIDENTS IN THE CASE OF STANDALONE HOUSING, KNOW HOW TO FULLY OPERATE ANY SYSTEMS THAT WERE INSTALLED. IN THE CASE OF THIS STUDY, IT WAS FOUND THAT THE MAJORITY OF BUILDING OPERATORS NEEDED TO OUTSOURCE MAINTENANCE OPERATIONS; THIS QUICKLY BECOMES EXPENSIVE. THE WAY TO COMBAT THIS IS TO BE SURE THAT PROPER TRAINING IS AVAILABLE TO OPERATORS UPON COMPLETION OF CONSTRUCTION. IN THE CASE OF A CO-OP, IT IS TO THE ADVANTAGE OF THE RESIDENTS THAT THERE ARE SHARED ASSETS; KNOWLEDGE IS ONE OF THESE ASSETS. AS LONG AS THERE IS A SINGLE MEMBER OF THE CO-OP THAT HAS RECEIVED THE PROPER TRAINING OR EDUCATION TO REMEDY AN ISSUE, THEN EVERY MEMBER OF THE COMMUNITY HAS ACCESS TO THIS KNOWLEDGE.

## SATISFACTION AND QUALITY OF LIFE:

THIS STUDY FOUND THAT SAFETY AND KITCHEN QUALITY WERE THE TWO MOST IMPORTANT TOPICS IN ASSURING A GOOD QUALITY OF LIFE. CONTROLLING ACCESS TO BUILDINGS SEEMED TO ELICIT THE MOST POSITIVE RESPONSES FROM THE RESIDENTS INTERVIEWED. THE QUALITY OF THE KITCHEN SPACE AND AMENITIES APPEARED TO BE THE BIGGEST FACTOR IN SEPARATING GOOD LIVING SPACES FROM BAD ONES. INTUITIVE, DURABLE, AND EFFICIENT APPLIANCES AND STORAGE WERE LISTED AS THE STRONGEST FACTOR IN GAUGING THE QUALITY OF LIFE WITHIN A RESIDENT'S UNIT. THIS RESPONSE BY ACTUAL RESIDENTS OF EFFICIENT BUILDINGS COMPLIMENTS OTHER RESEARCH DONE FOR THIS THESIS THAT FOCUSED SPECIFICALLY ON THE QUALITY AND USABILITY OF THE KITCHEN AS A WHOLE.



# RESEARCH RESULTS

INEXPENSIVE, HIGHLY  
EFFECTIVE INSULATION

BUILDING CHEAPLY IS A SIMPLE TASK, BUT BUILDING CHEAPLY AND CREATING SOMETHING THAT WILL PASS THE TEST OF TIME TAKES A MORE ACUTE ATTENTION TO DETAIL. TAKING THE TIME TO BE ASSURED THAT A BUILDING IS PROPERLY INSULATED GOES AN INCREDIBLY LONG WAY WHEN IT COMES TO MAKING AN INEXPENSIVE CONSTRUCTION FEEL AS IF IT IS STATE OF THE ART. ESPECIALLY IN A CLIMATE SUCH AS THAT OF MINNESOTA, IT IS IMPORTANT TO BE SURE THAT A BUILDING CAN STAY WARM IN THE FRIGID WINTERS AND STAY COOL IN THE BLISTERING SUMMER HEAT.

IN ADDITION TO JUST SIMPLY INCREASING THE R-RATING OF A WALL BY ADDING MORE MATERIAL, THERE ARE SOME SIMPLE AND COST-EFFECTIVE CONSTRUCTION TECHNIQUES THAT CAN DRASTICALLY IMPROVE THE PERFORMANCE OF A WALL. MANY OF THESE TECHNIQUES FOCUS ON REDUCING THE AMOUNT OF MATERIAL NEEDED, THEREFORE REDUCING THE AMOUNT OF WASTE AND POLLUTION PRODUCED IN THE MANUFACTURING AND CONSTRUCTION PROCESSES. ONE EXAMPLE OF FRAMING IN A MORE EFFICIENT, EFFECTIVE MANNER IS TO REPLACE THE STANDARD T-WALL JUNCTION WITH A "LADDER T-WALL".

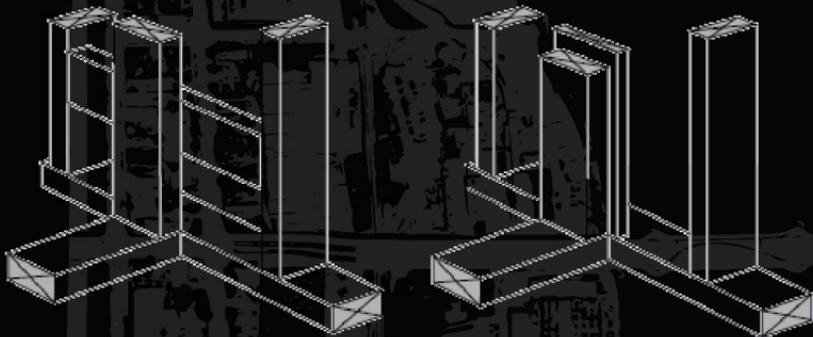


FIGURE 32

THIS CONSTRUCTION TECHNIQUE USES LESS WOOD FOR CONSTRUCTION WHILE ALSO ALLOWING FOR ADDITIONAL INSULATION TO BE PLACED WITHIN THE JUNCTION. THIS MINIMIZES THE EFFECTS OF HEAT LOSS DUE TO THERMAL BRIDGING. CONSTRUCTING WITH DOUBLE WALLS IS ALSO AN EFFECT WAY OF BOOSTING THE EFFECTIVENESS OF WALL INSULATION WHILE CONTINUING TO KEEP THE COST DOWN. ACCORDING TO ZEROENERGYPROJECT, DOUBLE WALLS SHOULD BE CONSTRUCTED IN THE FOLLOWING WAY, "BUILD TWO 2X4 WALLS, WITH OFF-SET STUDS ON 24" CENTERS TO SAVE WOOD WITHOUT COMPROMISING STRUCTURAL INTEGRITY. THEY CAN BE SPACED 5" APART TO FORM A 12" THICK WALL CAVITY IN COLDER CLIMATES." THIS METHOD EFFECTIVELY DOUBLES THE AMOUNT OF INSULATION THAT CAN BE PUT WITHIN A WALL WITHOUT DOUBLING THE AMOUNT OF MATERIAL NEEDED TO DO SO.

ROUGHLY A QUARTER OF A HOME'S HEAT LOSS IS LOST THROUGH THE ROOF. ONE OF THE MOST DIFFICULT PLACES TO APPLY AMPLE INSULATION IS ALONG THE EDGES OF THE ROOF WHERE THE SLOPE MEETS THE EXTERIOR WALLS. WHILE FLAT-ROOFS CAN PROVIDE A SOLUTION TO THIS PROBLEM, FROM A PRACTICALITY AND MAINTENANCE STANDPOINT A FLAT-ROOF IS NOT THE BEST OPTION FOR THIS SNOWY CLIMATE. FRAMING WITH RAISED-HEEL TRUSSES. BY LIFTING THE ROOFING TRUSSES HIGHER UP OFF THE TOP OF THE WALL YOU ALLOW FOR MORE INSULATION, WHETHER IT BE BLOWN IN OR RIGID BOARDS, TO BE ADDED TO THIS REGION

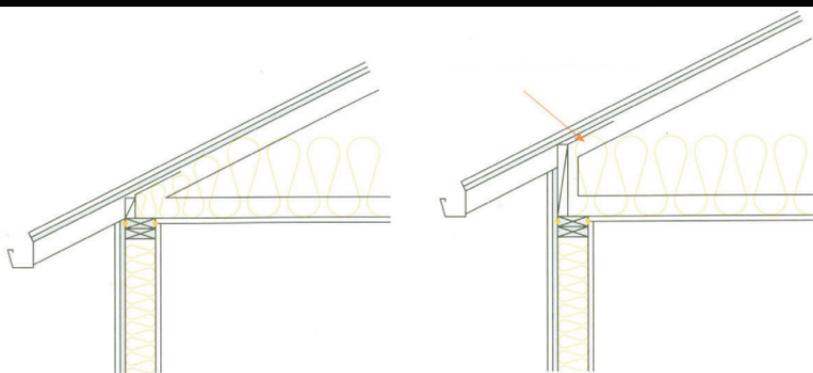
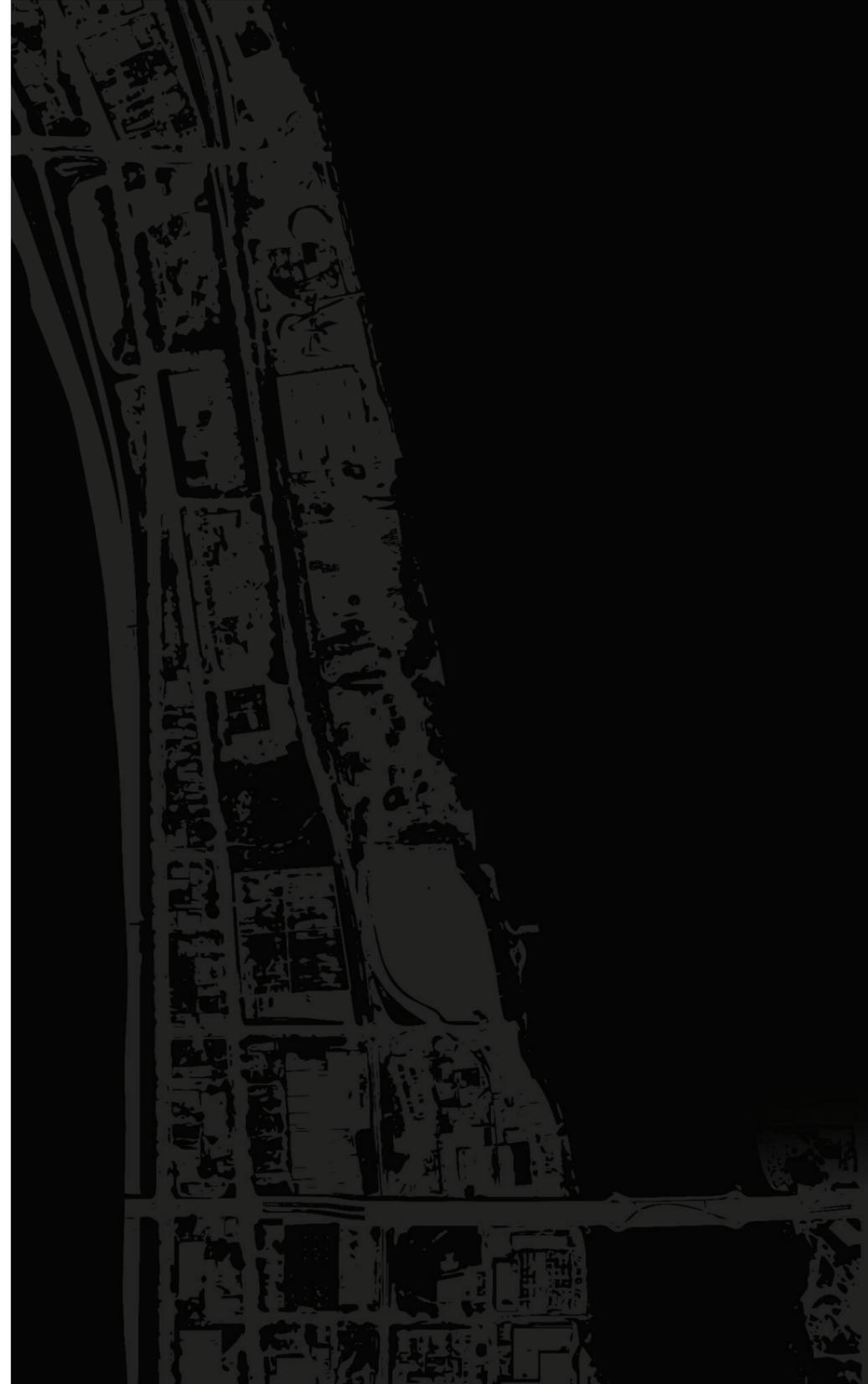


FIGURE 33



WHEN IT COMES TO CHOOSING THE RIGHT FORM OF INSULATION THERE ARE DIFFERENT ASPECTS TO PAY ATTENTION TO THAT MAY INFLUENCE YOUR DECISION. CLOSED-CELL SPRAY FOAM IS GENERALLY CONSIDERED TO BE THE MOST EFFECTIVE. IT IS COMPLETELY IMPERME-

ABLE TO

WATER VAPOR AND CREATES AN AIRTIGHT SEAL. HOWEVER, THE AVERAGE COST IS TWO AND A HALF TIMES HIGHER THAN ALTERNATIVE SOLUTIONS, AND FROM A SUSTAINABILITY STANDPOINT THE SPRAY FOAM OFFERS NOTHING BUT NEGATIVES; IT POLLUTES TO CREATE IT, AND IT POLLUTES TO DISPOSE OF IT. RIGID FOAM BOARDS ARE COMMONLY USED IN CONSTRUCTION WHERE SPACE IS LIMITED, AND HIGHER R-VALUES ARE NEEDED. WHILE BEING CHEAPER THAN SPRAY FOAM, THERE ARE STILL OTHER ALTERNATIVES THAT ARE CHEAPER YET AND DON'T COME ALONG WITH THE NEGATIVE ENVIRONMENTAL SIDE EFFECTS THAT ANY FORM OF FOAM INSULATION WILL. THE OVERALL BEST OPTION FOR INSULATION IN A BUILDING LIKE THE ONE THAT IS BEING PROPOSED BY THIS PROJECT IS DENSE-PACKED BLOWN-IN INSULATION. THE LOOSE AIRY NATURE OF BLOWN-IN INSULATION ALLOWS THE MATERIAL TO FILL IN ANY SHAPED VOID IN THE SAME WAY THAT SPRAY FOAM DOES WHILE ALSO BOASTING THE LOWEST PRICE TAG OF ALL FORMS OF

COMMERCIALY AVAILABLE INSULATION. THE OTHER ASPECT WE HAVE BEEN PAYING ATTENTION TO IN TERMS OF INSULATION IS THE

ENVIRONMENTAL IMPACT THAT THE MATERIAL HAS. THE MATERIAL THAT IS MOST COMMONLY USED FOR BLOWN-IN INSULATION IS KNOWN AS WHITE CELLULOSE, WHICH IS PRODUCED BY PROCESSING RECYCLED PAPER MATERIALS SUCH AS NEWSPAPER AND CARDBOARD. ONE

DOWNSIDE TO CELLULOSE-BASED INSULATION IS THAT IT IS IN NO WAY WATER RESISTANT AND THEREFORE MUST BE COMPLETELY SEALED UNTIL AIRTIGHT SO AS TO NOT ALLOW WATER VAPOR FROM RENDERING THE MATERIAL USELESS.

# RESEARCH RESULTS

## SPACE SAVING FURNITURE

A CLEAR AND OBVIOUS METHOD FOR REALISTICALLY KEEPING COSTS DOWN WHEN IT COMES TO PROPERTY IS TO SIMPLY HAVE LESS OF IT. SOME PEOPLE HAVE NO ISSUE WITH LIVING IN SMALL SPACES, AND THIS NUMBER OF PEOPLE IS GROWING AT AN ENERGETIC PACE. THE YEAR-TO-YEAR INCREASE IN THE NUMBER OF TINY HOMES IN THE UNITED STATES, AS OF 2017, IS AT 67%. THAT BEING SAID, IT TAKES A CERTAIN TYPE OF PERSON TO CHOOSE TO LIVE IN SOMETHING LIKE A TINY HOME; THE AVERAGE PERSON PICKED AT RANDOM MOST LIKELY WILL NOT WANT TO LIVE THIS WAY ESPECIALLY IN THE UNITED STATES WHERE PEOPLE WANT AMPLE SPACE.

TO APPEAL TO THE MASSES, WE MUST FIND A COMPROMISE IN TERMS OF SIZING THESE LIVING SPACES; TOO SMALL AND PEOPLE MAY FEEL CLAUSTROPHOBIC BUT TOO LARGE AND COST BECOMES AN ISSUE.

THE ISSUE NOW IS HOW DOES ONE MAXIMIZE THE USABILITY OF A MODERATELY SMALL LIVING SPACE. CURRENTLY, THE MARKET FOR SPACE-SAVING FURNITURE IS AT AN ALL TIME HIGH. DUE TO MODERN ASSEMBLY PROCESS, AND WITH THE HELP OF DIGITAL DEVELOPMENT, THESE ADVANCED PIECES OF FURNITURE CAN BE HAD FOR REASONABLE PRICES.

THE KITCHEN IS THE PERFECT PLACE TO START AS THIS SPACE SERVES SEVERAL PURPOSES, AND THERE IS A STRONG NEED FOR A RATHER LARGE AMOUNT OF STORAGE SPACE. SPACE SAVING FURNITURE IS ALL ABOUT MAKING SURE THAT EVERYTHING SERVES MORE THAN ONE PURPOSE. A COUNTER TOP THAT SLIDES OPEN TO BECOME A USEABLE TABLE, A CUPBOARD THAT PULLS DOWN FROM THE CEILING, A SHELF THAT FOLDS OPEN TO BECOME A TABLE; THESE ARE ALL FORMS OF FURNITURE AND STORAGE THAT TAKE ADVANTAGE OF EVERY LAST BIT OF INTERIOR REAL ESTATE. WALLS AND CEILINGS ARE SELDOMLY UTILIZED AS POTENTIAL STORAGE SPACE WHEN IT COMES TO KITCHEN DESIGN.

RETRACTABLE CABINETS THAT PULL DOWN FROM ABOVE HAVE THE ABILITY TO KEEP DISHES, UTENSILS, OR APPLIANCES OUT OF THE WAY TO ALLOW FOR MORE USABLE COUNTERTOP SPACE FREE OF CLUTTER. A MORE COMMON SOLUTION THAT CAN BE UTILIZED ON ITS OWN OR IN ADDITION TO RETRACTING CABINETRY IS TO TAKE ADVANTAGE OF THE WALL SPACE IN THE KITCHEN. THERE ARE A VARIETY OF WAYS TO GO ABOUT IT, BUT THE GENERAL IDEA THAT IS SEEN ACROSS ALL OF THESE SOLUTIONS IS TO ALLOW THE WALLS THEMSELVES TO BE THE STORAGE;



FIGURE 34

PEGBOARDS, HOOKS, MAGNETIC KNIFE RACKS ALL ARE DIFFERENT WAYS TO TAKE ADVANTAGE OF THIS TYPICALLY UNUSED WALL SPACE.

THE SIMPLEST, MOST BASIC WAY TO UTILIZE STORAGE SPACE IN A KITCHEN IS TO BE SURE THAT THE CLASSIC DRAWERS ARE ACTING AS EFFICIENTLY AS POSSIBLE. DRAWER ORGANIZERS ARE INEXPENSIVE, MODULAR, AND HIGHLY EFFECTIVE IN MAKING SURE EVERY LAST SQUARE INCH OF STORAGE SPACE IS BEING USED.



FIGURE 35

WHILE THE KITCHEN MIGHT BE THE AREA OF A HOME THAT WOULD RECEIVE THE MOST BENEFIT FROM SPACE-SAVING, MULTI-PURPOSE FURNITURE AND FEATURES, ONE CANNOT LOOK PAST ALL THE OTHER AREAS OF THE DWELLING; THIS INCLUDES THE LIVING ROOM. THE TERM "LIVING ROOM" IS FAIRLY MODERN, WITH ITS CURRENT DEFINITION ONLY DATING BACK TO THE EARLY 20TH CENTURY. THIS SPACE THAT WE NOW REFER TO AS THE LIVING ROOM, PRIOR TO THE FIRST

WORLD WAR, WAS KNOWN AS THE PARLOR. THIS TERM COMES DIRECTLY FROM THE FRENCH WORD "PARLER" (PRONOUNCED PAR-LAY) MEANING TO SPEAK. THIS WAS A FORMAL SPACE WHERE RESIDENTS OF THE HOME WOULD SIT AND TALK WITH EACH OTHER OR WITH GUESTS, HENCE THE NAME. AFTER THE GREAT WAR HAD ENDED AND SOLDIERS FROM ACROSS THE GLOBE BEGAN TO RETURN TO THEIR HOMES, THEY HAD UNFORTUNATELY BROUGHT WITH THEM DEVASTATING DISEASES. MANY OF THESE SOLDIERS HAD CONTRACTED DIFFERENT FORMS OF DISEASES, INCLUDING INFLUENZA, THAT WERE UNKNOWN TO THEIR BODIES; THIS RESULTED IN THE DEATH OF MILLIONS AROUND THE WORLD. IT IS BECAUSE OF THIS INCREDIBLE AMOUNT OF DEATHS IN A SHORT PERIOD OF TIME, THAT THE TERM PARLOR BECAME LESS AND LESS USED AND INSTEAD THIS SPACE BECAME COMMONLY REFERRED TO AS "THE DEATH ROOM". FAMILIES WOULD USE THE PARLOR OF THEIR HOME AS A PLACE TO MOURN THE DEATH OF THEIR LOVED ONES



FIGURE 36

BEFORE A PROPER FUNERAL COULD TAKE PLACE. FOR THE BETTER PART OF A DECADE THE DEATH ROOM REMAINED THE COMMON PARLANCE FOR THIS SPACE. IT WASN'T UNTIL LIVING CONDITIONS IMPROVED, AND THE NUMBERS OF THOSE DISEASED DECREASED, THAT THE LADIES HOME JOURNAL WROTE AN ARTICLE ARGUING FOR A CHANGE IN NOMENCLATURE FOR THIS AREA OF THE HOME. THEY PROPOSED THAT INSTEAD OF REFERRING TO IT AS THE DEATH ROOM, IT SHOULD BE KNOWN AS "THE LIVING ROOM".

THIS SPACE HAS EVOLVED IN STYLING AND DESIGN THROUGHOUT THE CENTURIES, BUT THE FUNCTION HAS REMAINED LARGELY THE SAME; THE LIVING ROOM IS A PLACE TO SOCIALIZE, ENTERTAIN, RELAX, AND, FOR LACK OF A BETTER TERM, TO LIVE. TO DESIGN A LIVING SPACE THAT IS BOTH SPATIALLY CONSCIOUS, AND MEETS THE NEEDS OF THE DWELLER, CERTAIN CONSIDERATIONS MUST BE GIVEN TO THE DESIGN, FURNITURE PIECES, AND LAYOUT OF THE ROOM. AGAIN, THIS WILL INVOLVE THE USE OF MULTI-PURPOSE SEATING, SHELVING, AND STORAGE. INTEGRATING STORAGE DRAWERS INTO FUNDAMENTAL ASPECTS OF A DWELLING, SUCH AS IN THE TREADS OF A STAIRCASE, INCREASE THE OVERALL AMOUNT OF AVAILABLE FLOORSPACE WHILE NOT DETRACTING FROM THE REAL-WORLD LIVABILITY OF SAID SPACE. FOLD OUT DESKS THAT COLLAPSE INTO WALL SHELVING CAN PROVIDE AN EASY PLACE TO ENJOY YOUR MORNING COFFEE AND CHECK YOUR EMAIL WITHOUT HAVING TO TAKE UP PRECIOUS FLOOR SPACE WITH A STANDALONE DESK OR TABLE THAT MAY ONLY GET USED FOR AN HOUR OR TWO OF THE ENTIRE DAY. COMFORTABLE AND QUALITY SEATING IS A NECESSITY OF ANY SUCCESSFUL LIVING SPACE DESIGN. FUNCTIONAL CHAIRS AND COUCHES MAY BE A REQUIREMENT, BUT WHY

CAN THESE PIECES OF FURNITURE NOT ALSO SERVE OTHER PURPOSES TOO? CAN STORAGE FOR LARGE BULKY BLANKETS AND LINENS NOT BE INTEGRATED INTO THE BASE OF A COUCH? CAN A SET OF CHAIRS NOT CONSOLIDATE INTO ONE ANOTHER TO FORM A TABLE WHEN THERE IS NO NEED FOR EXTRA SEATING? BY DESIGNING LIVING SPACES IN A WAY THAT MAY SEEM UNCONVENTIONAL AT FIRST, ONE IS ABLE TO INCREASE THE OVERALL LIVABILITY OF A SPACE AND NOT HAVE TO MAKE MANY SACRIFICES THAT WOULD DETRACT FROM THE DESIRABILITY OF WANTING TO LIVE IN THIS SPACE.



FIGURE 37

# PROJECT JUSTIFICATION

THIS PROJECT BRINGS US TO MINNEAPOLIS, A CITY STRATEGICALLY PLACED ON THE MISSISSIPPI RIVER. THE RIVER ALLOWED FOR THE TRANSPORT OF INDIVIDUALS AND GOODS IN WAYS THAT WERE NOT POSSIBLE ON LAND. IT IS BECAUSE OF THIS EASE OF TRANSPORTATION THAT THE BANKS OF THE RIVER FILLED WITH INDUSTRY. MILLS, FACTORIES, AND WAREHOUSES ALL COMPETING FOR THE BEST ACCESS TO THE RIVER IN ORDER TO TAKE THE MOST ADVANTAGE OF THE WONDERFUL TOOL THAT THE MISSISSIPPI WAS.

AS TIME PROGRESSED SOME INDUSTRIES FAILED, SOME REMAINED BUT CHANGED THEIR PRACTICE TO ADAPT TO AN EVER-CHANGING WORLD, AND OTHERS MOVED AWAY ENTIRELY. NO MATTER WHAT CAME OF THE INDUSTRY THERE IS ONE THING THAT REMAINS CONSTANT, THEY BECAME LESS RELIANT ON THE RIVER AS A TOOL. AND WHILE THE INDUSTRY WENT ELSEWHERE, THE EVIDENCE OF THEIR EXISTENCE REMAINS.

THESE INDUSTRIAL STRUCTURES LAY ABANDONED ALL ALONG THE RIVER IN VARIOUS STATES OF DISREPAIR. MANY WOULD CONSIDER THEM TO BE EYESORES, DANGERS, OR WASTES OF PRECIOUS RIVERFRONT REAL ESTATE. THERE CAN BE A CERTAIN AMOUNT OF TRUTH TO THESE ARGUMENTS. WITH NO CARETAKERS PRESENT, THESE FACILITIES HAVE BEGUN TO COLLECT WASTE AND TASTELESS GRAFFITI. IN SOME SITUATIONS, STRUCTURAL ELEMENTS HAVE FAILED DUE TO LACK OF MAINTENANCE AND IT WOULD NOW BE DANGEROUS TO WALK AMONGST. DEVELOPERS SURELY WOULD LOVE TO TURN OVER THE LAND AND BUILD UP ROW UPON ROW OF IDENTICAL, SOULLESS, CASH-GRABBING APARTMENTS—NOT TOO CONCERNED WITH DISPLACEMENT OF FAMILIES THAT COMES FROM THIS BUSINESS VENTURE.



FIGURE 38



FIGURE 39

HOW CAN WE AS DESIGNERS CHANGE THE WAY THAT THESE SCARS OF THE TECHNOLOGY OF THE PAST SIT IN THE CONTEXT OF THE MODERN WORLD? I ARGUE THAT THE MOST EFFECTIVE MANNER FOR CHANGING THIS PERCEPTION IS RECONTEXTUALIZATION. PAUL RICOEUR DISCUSSES IN HIS ESSAY THE FUNCTION OF FICTION IN SHAPING REALITY HOW ALL FORMS OF FICTION THAT AN INDIVIDUAL COULD CONCEIVE, STEM FROM PREVIOUSLY LIVED EXPERIENCES; ONE CANNOT CREATE AN ORIGINAL IDEA FROM NOTHING AT ALL. HIS EXAMPLE DISCUSSES THE WORKS OF POETS AND PAINTERS, BUT THIS IS ALSO TRUE FOR ARCHITECTS AS ARCHITECTURE IS IN FACT THE POETIC USE OF FORMS TO CREATE LIVED EXPERIENCES. AT THE CORE OF WHAT AN ARCHITECT DOES IS THE RECONTEXTUALIZING OF INDIVIDUAL COMPONENTS. MATERIAL CHOICES, THE SHAPE THAT A ROOM TAKES, AND HOW LIGHT ENTERS A SPACE ARE ALL EXAMPLES OF THIS IN ACTION. WHAT I PROPOSE SHOULD BE DONE HERE INSTEAD OF THE DEMOLITION AND REPLACEMENT OF THE EXISTING IS THE REARRANGEMENT—TO TAKE THE PHYSICAL COMPONENTS OF THESE FACTORIES AND REMOLD THEM INTO SOMETHING NEW.

WE MUST REALIZE THAT THESE TECHNOLOGICAL STRUCTURES THAT EXIST ON THE SITE EXIST IN A CONTEXT WHERE ARCHITECTURE IS COMMONLY REDUCED TO INSTRUMENTAL APPLICATIONS—USED AS PAWNS FOR THE SAKE OF INNOVATION AND PROGRESS. IT IS IN THIS PROJECT’S EXPLORATION OF DERELICT 20TH CENTURY MATERIALS, FORMS, AND SYMBOLS, IN ADDITION TO THEIR POTENTIAL RELATIONSHIP TO SPIRITUAL POSSIBILITIES, THAT WE CAN PROVIDE A CONTEMPORARY EXAMPLE THAT IS FULLY DEPENDENT ON THE CREATIVE TRANSFORMATION OF THESE HISTORICAL TRACES. THESE REMNANTS HAVE SERVED THEIR FUNCTIONAL PURPOSE AND NOW SOMETHING MUST COME OF THEM. IT IS TIME FOR THESE MARKS OF THE PAST TO TRANSFORM AND EXIST IN AN ALL NEW WAY—NO LONGER A PURE MEANS TO AN END, THEY NOW SERVE AS AN INSPIRATION TO FAMILIES, FRIENDS, AND THE COMMUNITY AS A WHOLE.



FIGURE 40



FIGURE 41

# HISTORICAL, SOCIAL, AND CULTURAL CONTEXT

AS A WHOLE THIS SITE HAS NOT CHANGED MUCH IN RECENT HISTORY. THIS SITE WAS IN ITS PRIME IN THE BEGINNING OF THE 20TH CENTURY WHEN THE MISSISSIPPI RIVER WAS THE PRIMARY TOOL FOR TRANSPORTATION OF GOODS. THIS ENTIRE AREA ORIGINALLY CONSISTED OF INDUSTRY THAT USED THE RIVER TO THEIR FULL ADVANTAGE.



FIGURE 42 | 1991

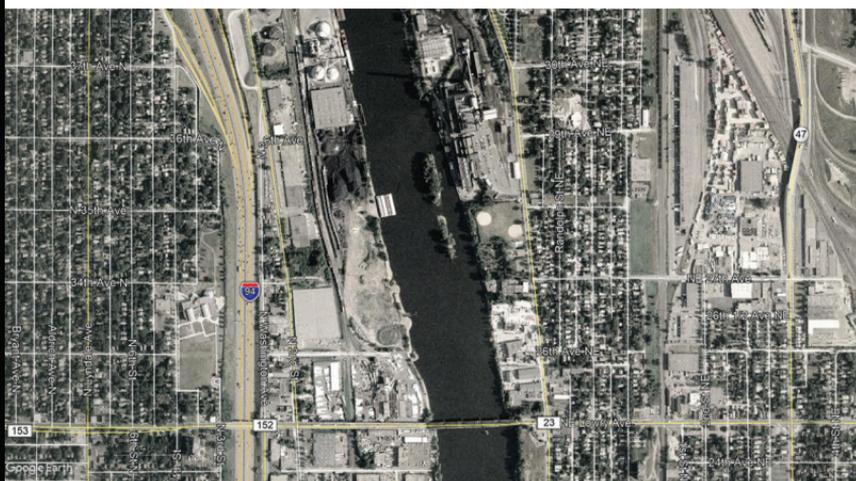


FIGURE 43 | 2003



FIGURE 44 | 2005

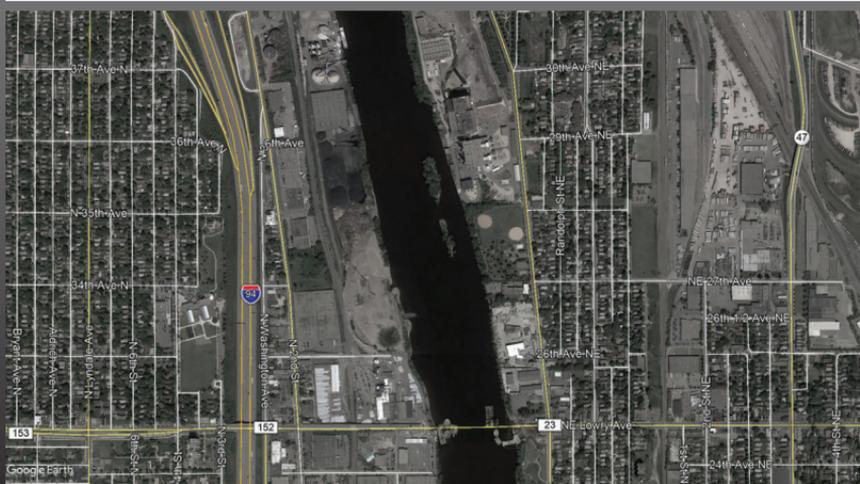


FIGURE 45 | 2010

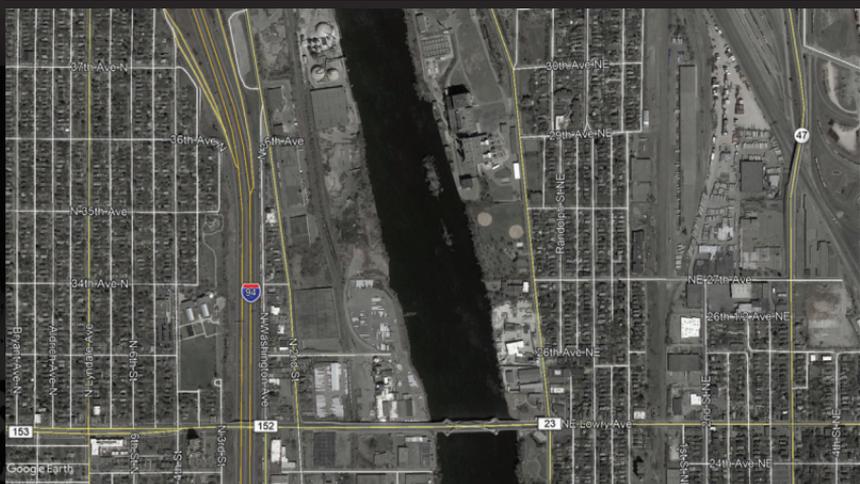


FIGURE 46 | 2019

# SITE ANALYSIS      QUALITATIVE ANALYSIS

THE SITE CHOSEN FOR THIS PROJECT IS NOT A PRETTY ONE. AS IT CURRENTLY SITS THERE IS NO REASON THAT AN AVERAGE PERSON WOULD WANDER THEIR WAY ONTO THIS SITE. THE ONLY REASON ONE WOULD FIND THEMSELVES THERE IS IF THEY WORKED IN THE LONE BUSINESS ON THE SITE: A FACTORY THAT PRODUCES ROOFING SHINGLES. THE SOUNDS AND SMELLS THAT COME FROM THIS BUILDING LEAVE MUCH TO BE DESIRED.

IF YOU MANAGE TO GET THROUGH THE COUNTLESS NUMBER OF CHAIN LINK FENCES AND GATES THAT LITTER THE AREA, YOU WILL FIND YOURSELF IN THE MIDDLE OF WHAT COULD PASS AS THE SET FOR A MAD MAX FILM WITH SCRAP METAL THROWN ABOUT, AND BROKEN CONCRETE SLABS WHICH ARE SLOWLY BEING RECLAIMED BY NATURE; NOT A SOUL TO BE SEEN.

YOU LEAVE THE SITE AND YOU TAKE THE BEAUTIFUL LOWRY BRIDGE ACROSS THE RELATIVELY CALM MISSISSIPPI RIVER. AS YOU LOOK UP STREAM YOU SEE MILES OF RIVERFRONT LAYING ABANDONED OR UNUSED. INSTEAD OF PEOPLE BOATING OR FISHING OFF THE SHORE OF THE RIVER YOU SEE EMPTINESS. YOU LOOK DOWNSTREAM OF THE RIVER AND YOU SEE A STUNNING VIEW OF THE MINNEAPOLIS SKYLINE.



FIGURE 47

YOU WONDER TO YOURSELF WHY NOBODY HAS TAKEN ADVANTAGE OF THIS AREA. MASSIVE AMOUNTS OF WATERFRONT NEAR UP-AND-COMING NEIGHBORHOODS, LOCALLY FAMOUS ESTABLISHMENTS IN EYESIGHT JUST ACROSS THE RIVER, AND EXCELLENT SIGHT LINES IN ALL DIRECTIONS; THERE IS NO LOGICAL EXPLANATION AS TO WHY THERE HAS BEEN NO DEVELOPMENT ON THE SITE.

FINALLY ON THE OTHER SIDE OF THE RIVER, YOU REALIZE THAT YOU'RE ACTUALLY WALKING AMONGST OTHER PEDESTRIANS NOW. THERE ARE PEOPLE HOPPING IN AND OUT OF CARS, RESTAURANTS AND BARS ARE FULL TO THE BRIM, LOCAL BUSINESSES ARE OPEN TO THE PUBLIC, AND YOU NOTICE LITTLE PRIVATE ART STUDIOS IN CONVERTED WAREHOUSES AND SHEDS. THE EAST BANK OF THE RIVER PROVIDES A LITTLE BIT OF EVERYTHING IN A SMALL, CONDENSED SPACE. YOU FIND NO REASON TO GO BACK ACROSS THE BRIDGE TO THE WEST OTHER THAN TO GET INTO YOUR PARKED CAR AND LEAVE.

WHAT CAN BE DONE TO PULL THE ENERGY AND ENVIRONMENT FROM ACROSS THE RIVER TO THE EAST AND REVITALIZE AN AREA WITH AN INCREDIBLE AMOUNT OF POTENTIAL?



FIGURE 48

# SITE ANALYSIS

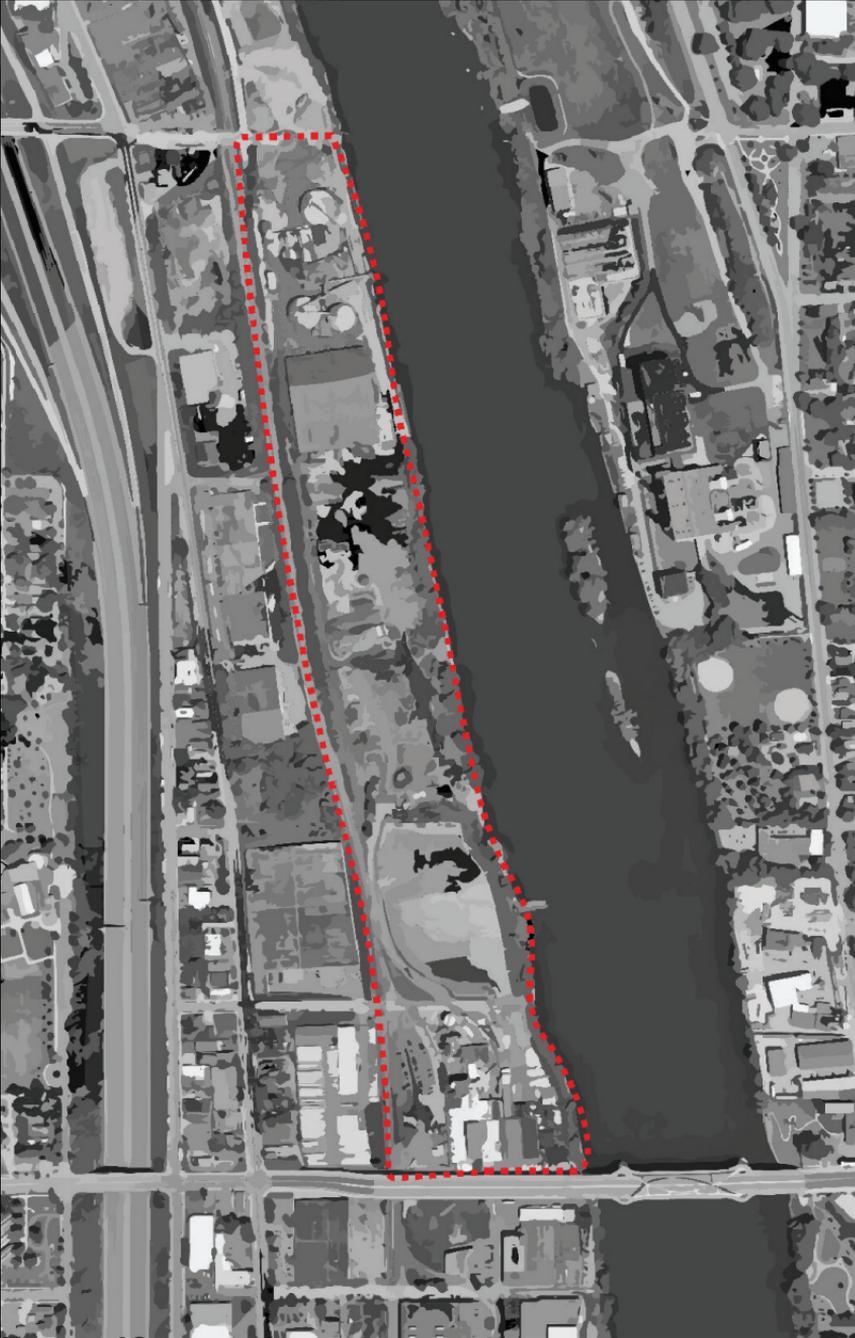


FIGURE 49

## VIEWS OR VISTAS

THERE IS NOT A FULL SET OF GRID LINES WHEN IT COMES TO THIS PARTICULAR SITE. AS THE SITE IS RATHER NARROW THERE ARE NO LINES THAT RUN NORTH/SOUTH THAT WOULD BE CONSIDERED RELEVANT TO THE SITE. THERE ARE, HOWEVER, EAST/WEST LINES THAT DIVIDE UP THE SITE NICELY IN THEIR OWN WAY. AGAIN, THE SHAPE OF THE SITE IS OBLONG; AND THIS CAN BE BROKEN UP INTO FOUR CLEAR SECTORS. THESE SECTORS ARE DETERMINED BY THE SIDE STREETS ADJACENT TO THE SITE AND IN THE NEIGHBORHOOD ACROSS THE RIVER.



FIGURE 50

# SITE SECTION

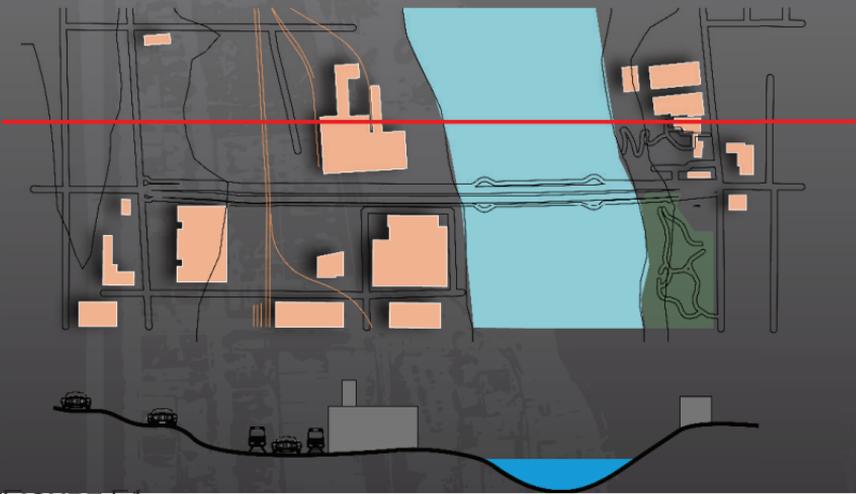


FIGURE 51

## SUN AND LIGHT QUALITY

LIGHT QUALITY IS EXCELLENT ON THIS SITE. WITH MINIMAL OBSTRUCTIONS TO THE EAST AND SOUTH, AMPLE AMOUNTS OF WARM LIGHT REACH THE ENTIRE SITE. IN FACT, THE LACK OF SHADE MAY BE AN ISSUE IN THE SUMMER MONTHS AS THE SUNLIGHT WILL BE ABLE TO BEAT DOWN ON THE MAJORITY OF THE SITE FOR THE ENTIRETY OF THE DAY. IT IS NOT COMMON THAT AN URBAN SETTING, SUCH AS THIS, HAS THE ABILITY TO HARVEST THIS AMOUNT OF SUN.



FIGURE 52

## VEGETATION



FIGURE 53

THE SITE WAS RATHER BARREN OF VEGETATION APART FROM A SMALL WOODED AREA CONSISTING OF OAK AND MAPLE TREES. WEEDS AND VARIOUS BUSHES MANAGED TO PUSH THEIR WAY UP THROUGH THE ENDLESS SLABS OF CONCRETE. WHEN INTRODUCING NEW FOLIAGE TO THIS SITE, ASSURING THAT PLANTS NATIVE TO THE AREA ARE USED WILL BE A NECESSITY.

## WATER



FIGURE 54

THE MISSISSIPPI RIVER MAKES UP THE EASTERN BORDER OF THE SITE. ALONG THE SITE THE WATER FLOWS AT A MODERATE PACE. THE WATER APPEARS TO BE MURKY, BUT THIS DOES NOT NECESSARILY MEAN IT IS POLLUTED.

# HUMAN CHARACTERISTICS, SITE CHARACTERISTICS, AND DISTRESS



FIGURE 55

THE CHARACTER OF THE SITE CAN BE DESCRIBED NO BETTER THAN AS INDUSTRIAL. RAIL LINES, HEAVY MACHINERY, AND EMPTY LOTS ARE ALL THAT EXIST ON THE SITE IN ITS CURRENT FORM.



FIGURE 56



FIGURE 57

JUST OFF SITE HOWEVER, NEW CONSTRUCTION AND RECENT STREET ART START TO APPEAR. THIS POINTS TOWARDS POTENTIAL REVITALIZATION OF THE AREA.



FIGURE 58



FIGURE 59



## TOPOGRAPHY AND SOIL TYPOLOGY

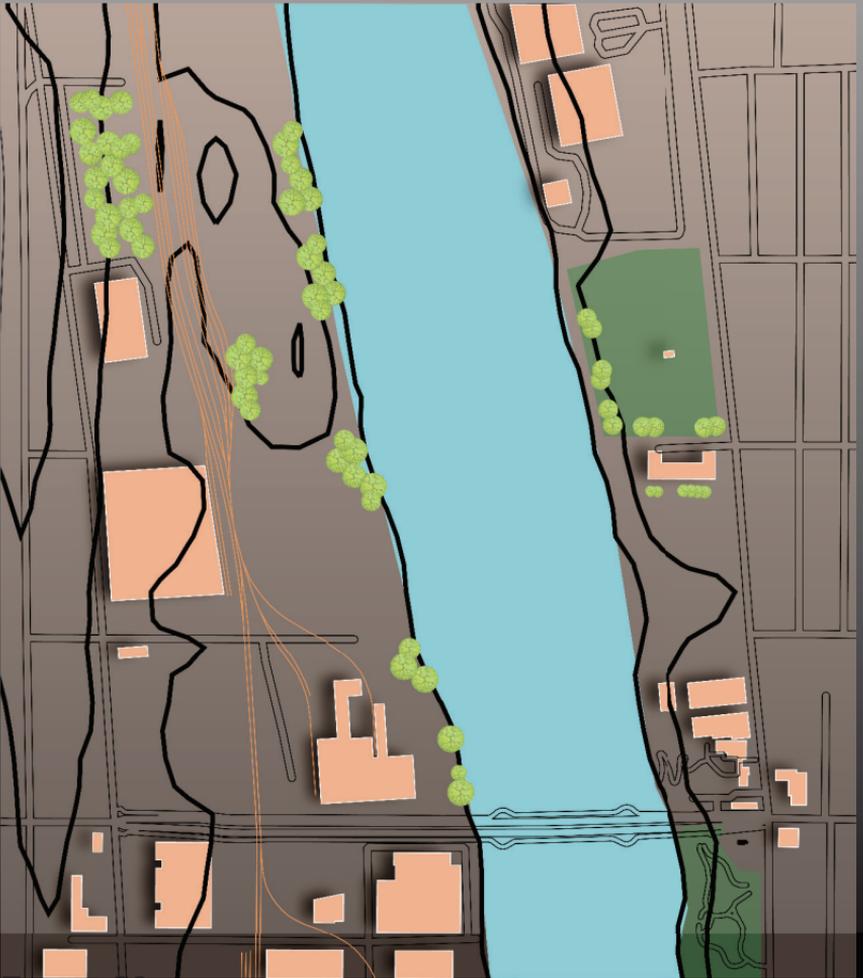


FIGURE 60

WITH THE RIVER AS THE LOWEST POINT, THE MAJORITY OF THE SITE IS RELATIVELY FLAT. AS YOU APPROACH THE NORTH END OF THE SITE THERE IS A SLIGHT HILL WHICH IS THE HIGHEST GROUND ON THE SITE. SOIL TYPES ARE A MIX OF GLACIAL SILT AND SANDY GRAVEL

## VEHICLE TRAFFIC



FIGURE 61

THE VAST MAJORITY OF TRAFFIC FLOW NEAR THIS SITE IS ON ONE SINGULAR ROAD (LOWRY AVE.) AS THERE IS VERY FEW BUSINESSES IMMEDIATELY ADJACENT TO THE SITE, THERE IS NOT MUCH NEED TO BE ON THE LOCAL SIDE STREETS.

## PEDESTRIAN TRAFFIC

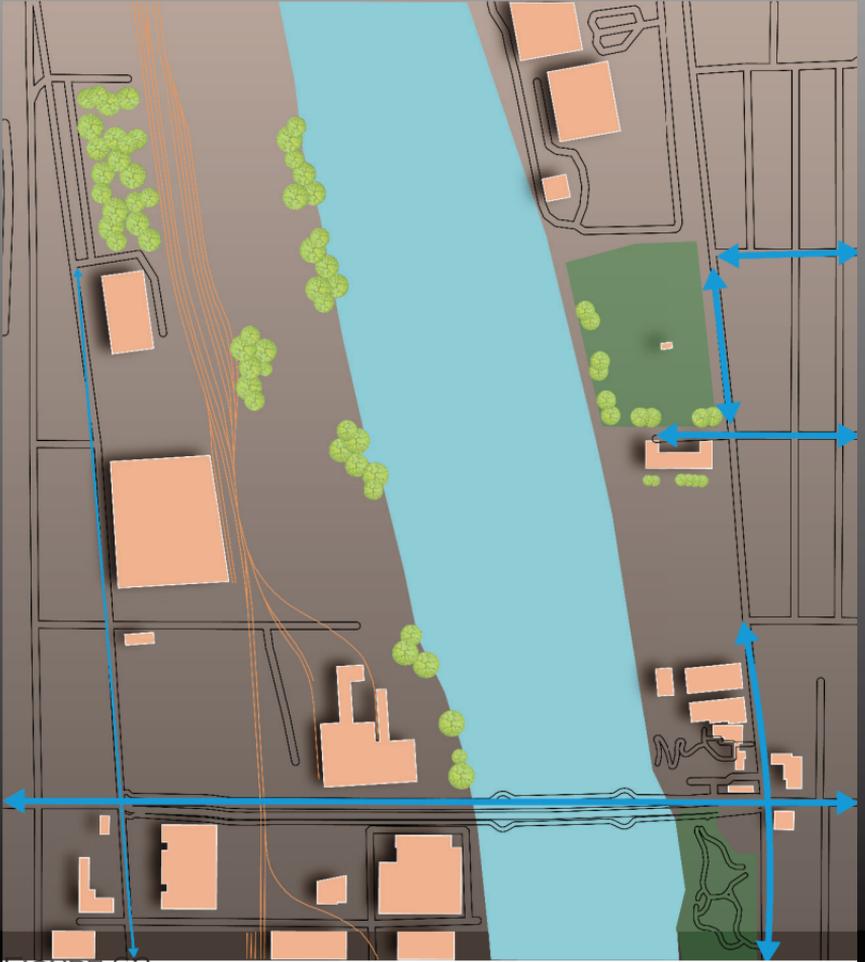


FIGURE 62

THE FEW AREAS WHERE PEOPLE CAN BE SPOTTED WALKING NEAR THE SITE ARE ACROSS THE LOWRY BRIDGE AND COMING FROM THE NEIGHBORHOOD TO EAST TO COME TO THE TWO PARKS AND ADJACENT LOCAL BUSINESS.

NORTH



FIGURE 63

SOUTH



FIGURE 64

# SITE RECONNAISSANCE

EAST

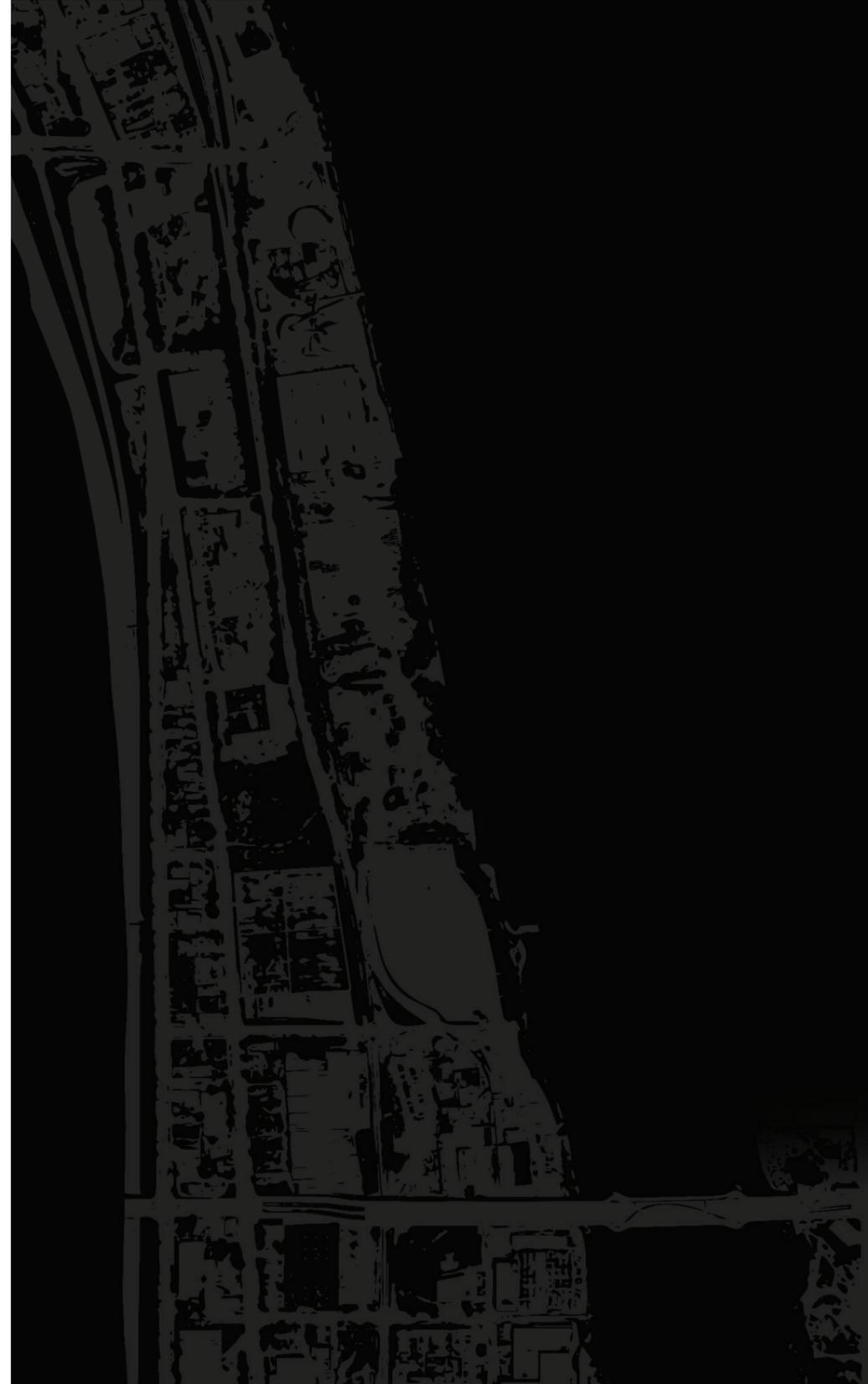


FIGURE 65

WEST

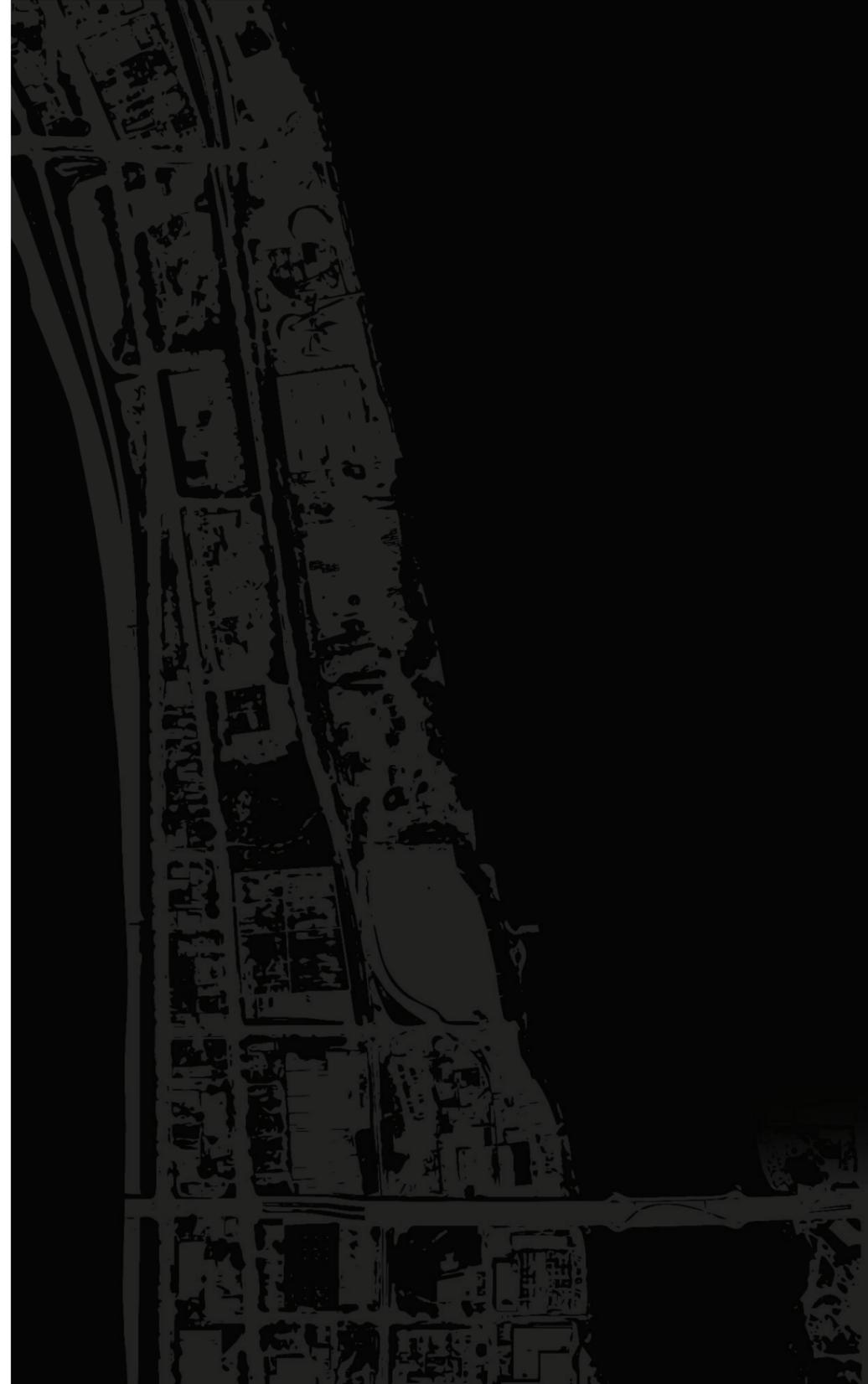


FIGURE 66



# THE DESIGN



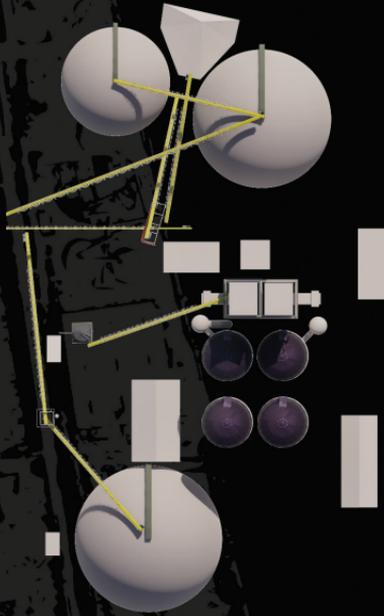


SPECIFIC LOCATIONS WITHIN THE SITE



FIGURE 67

FIGURE 68

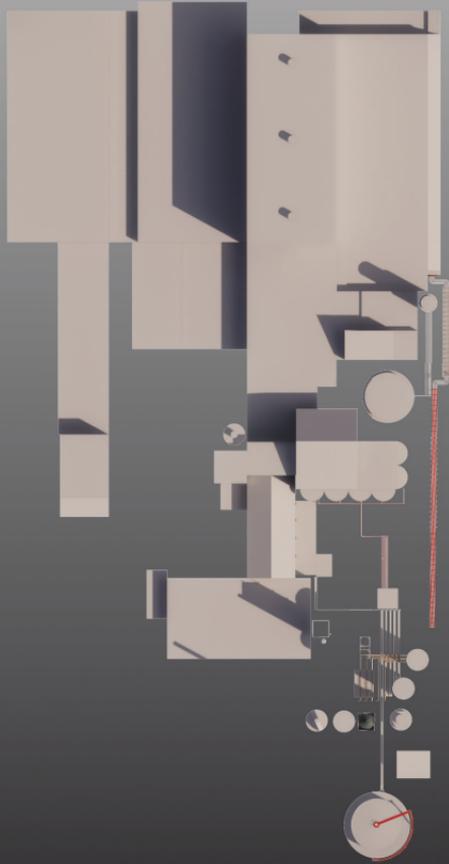


NORTH FACTORY COMPONENTS



FIGURE 69

FIGURE 70



SOUTH FACTORY COMPONENTS



FIGURE 71

# APARTMENT BUILDING



FIGURE 72 | WALKWAY TO HOUSING UNITS



FIGURE 73 | APARTMENT INTERIOR

FIGURE 74 | APARTMENT PLAN



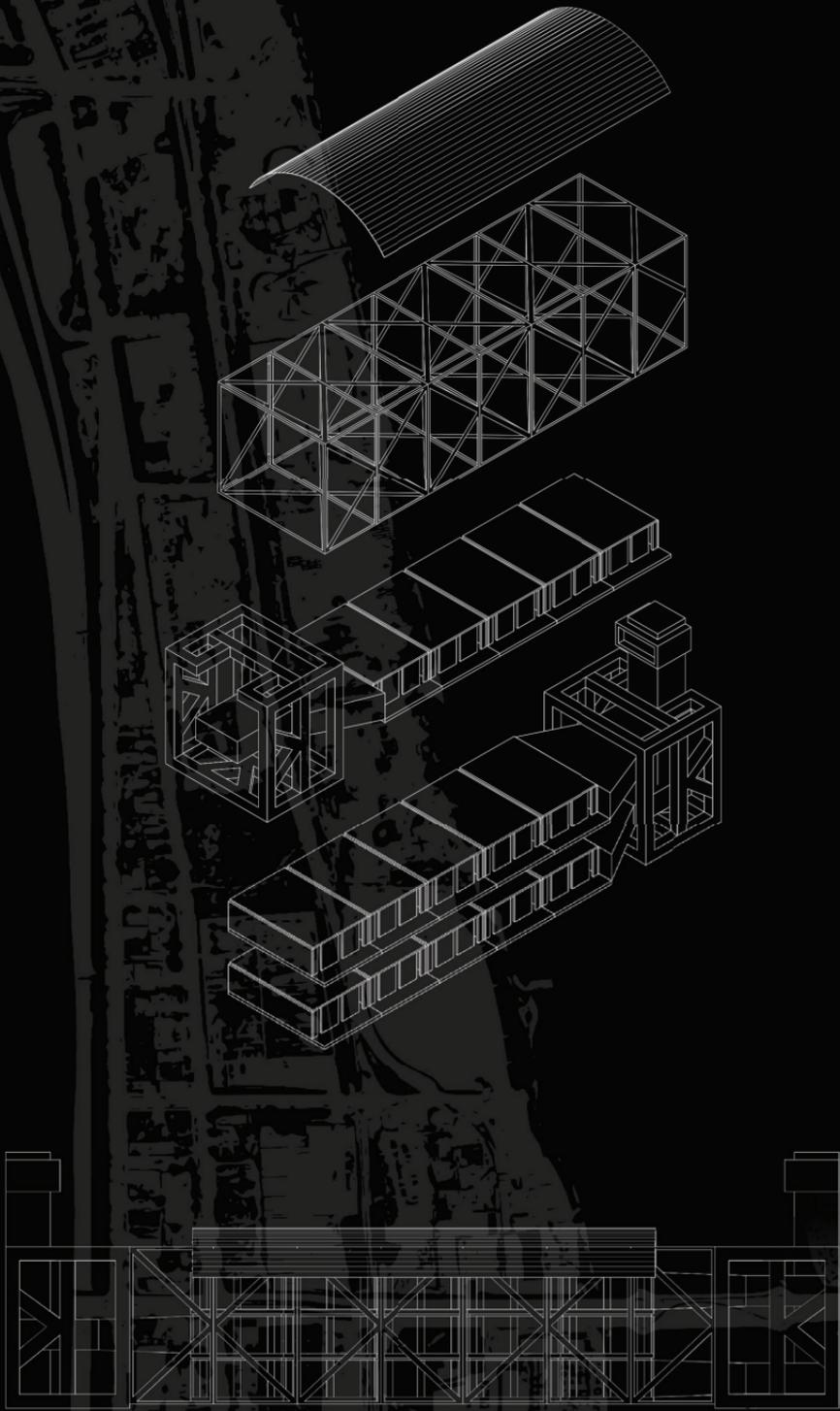


FIGURE 7/5 | COMPONENTS



FIGURE 76 | ELEVATION

# PLANETARIUM

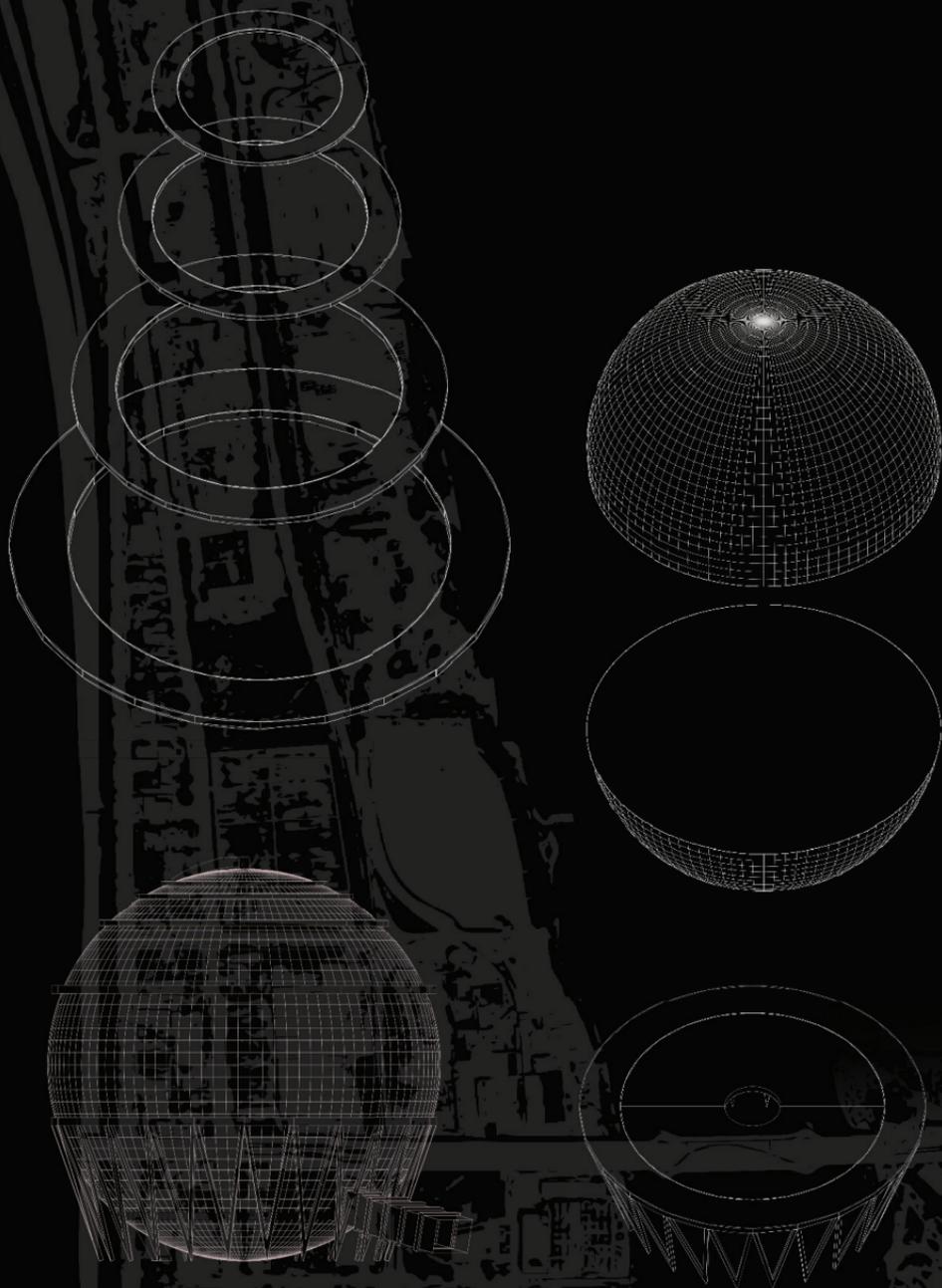


FIGURE 77 | COMPONENTS



FIGURE 78 | INTERIOR PRESENTATION SPACE

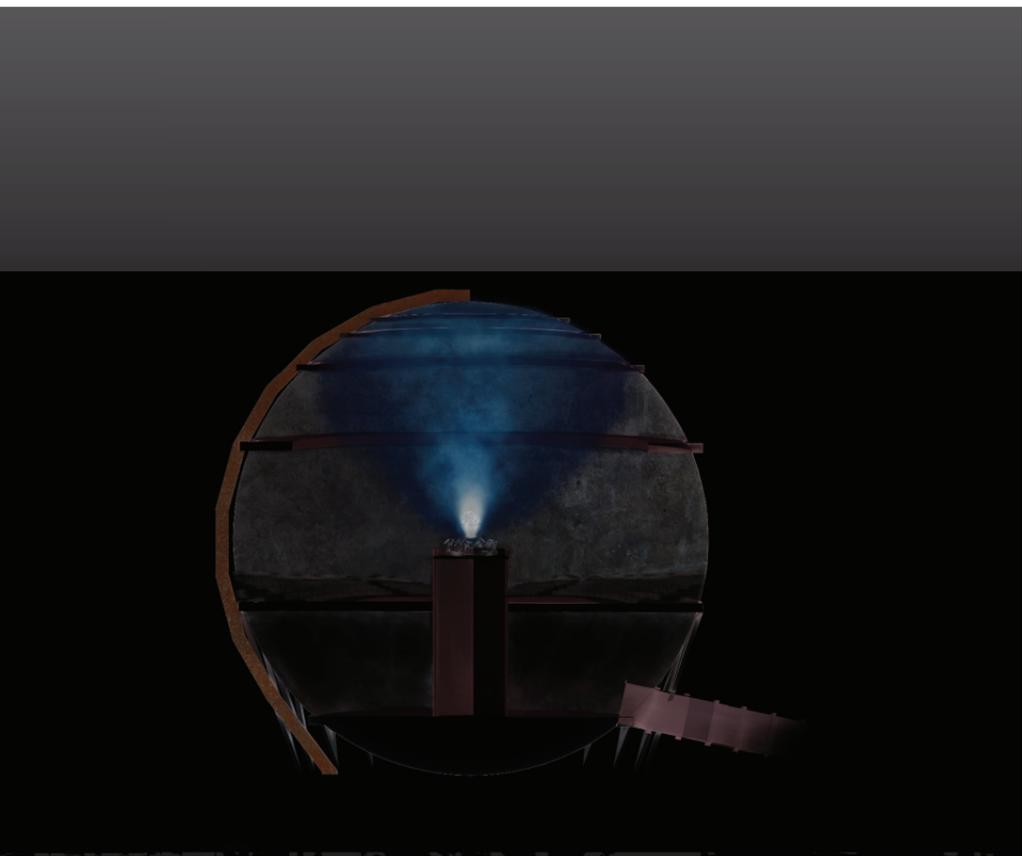


FIGURE 79 | SECTION

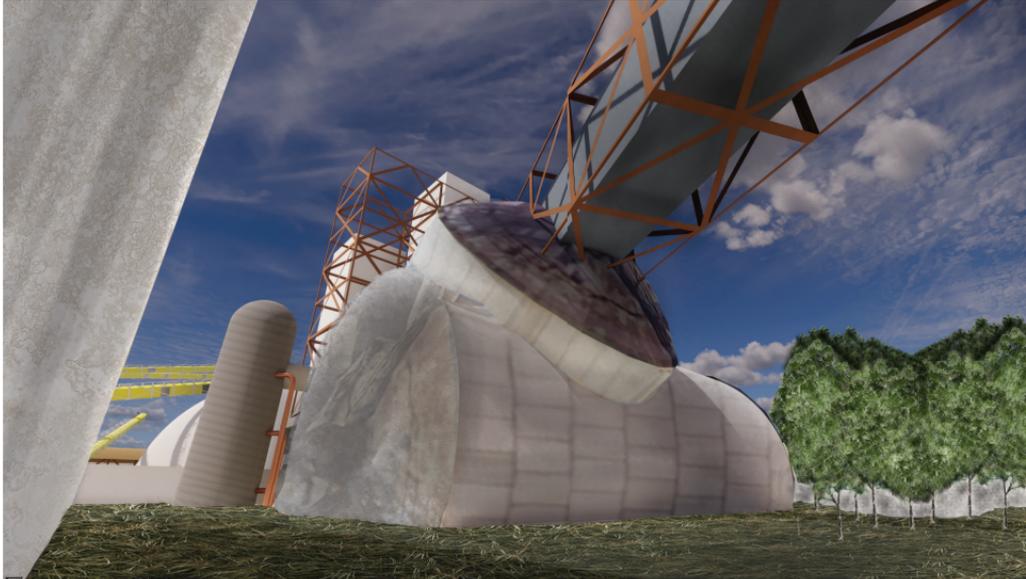


FIGURE 80 | REPURPOSED SILOS



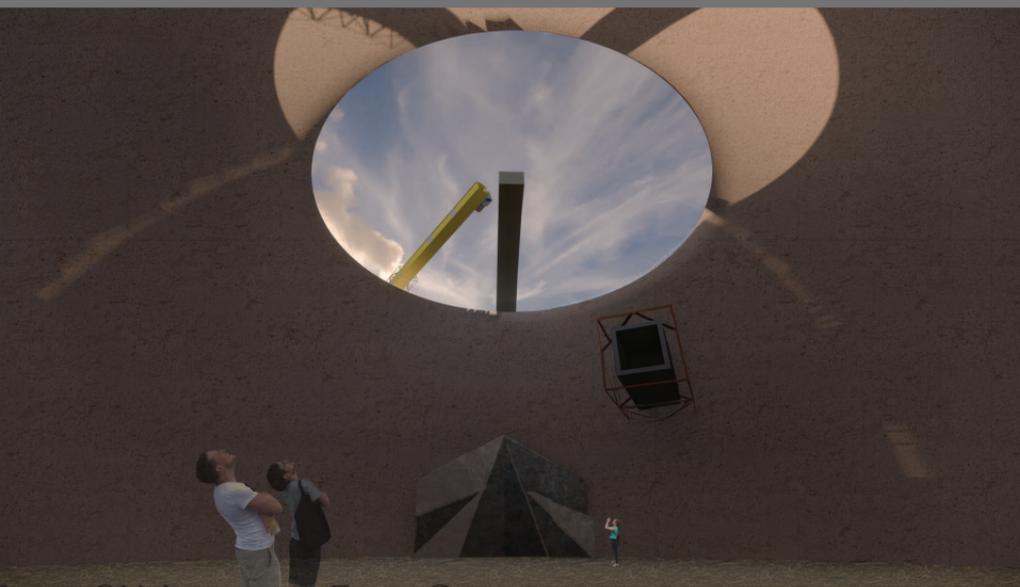
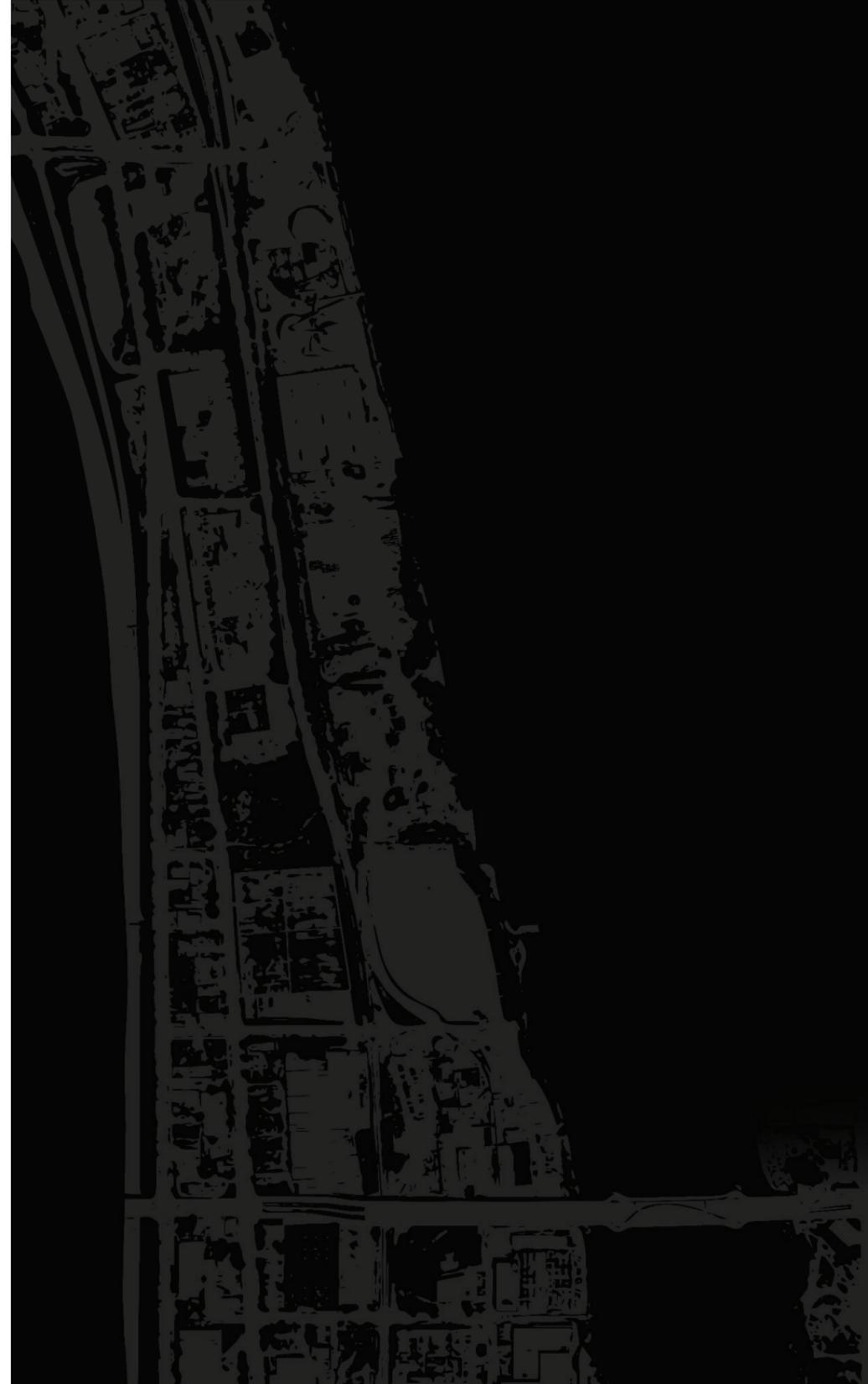
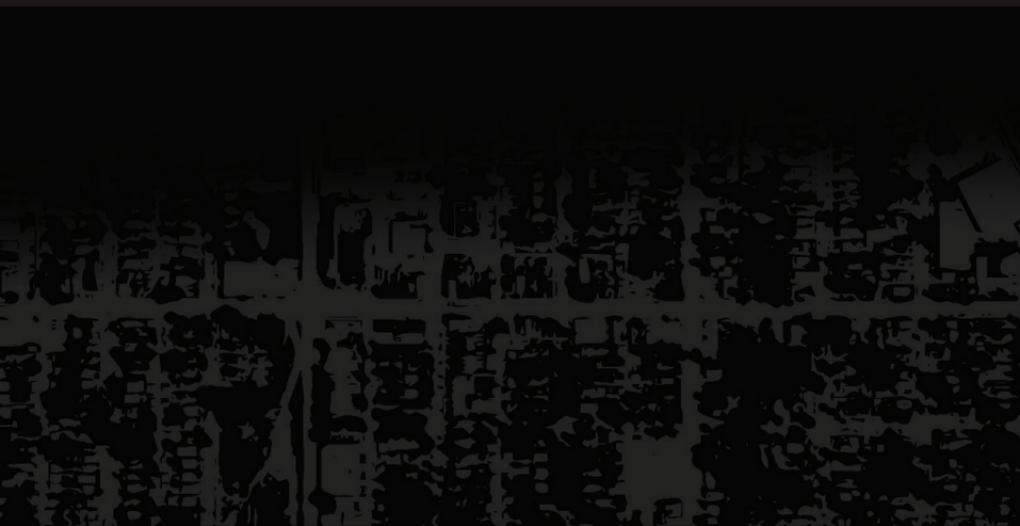


FIGURE 81 | ADDITIONAL EVENT SPACE

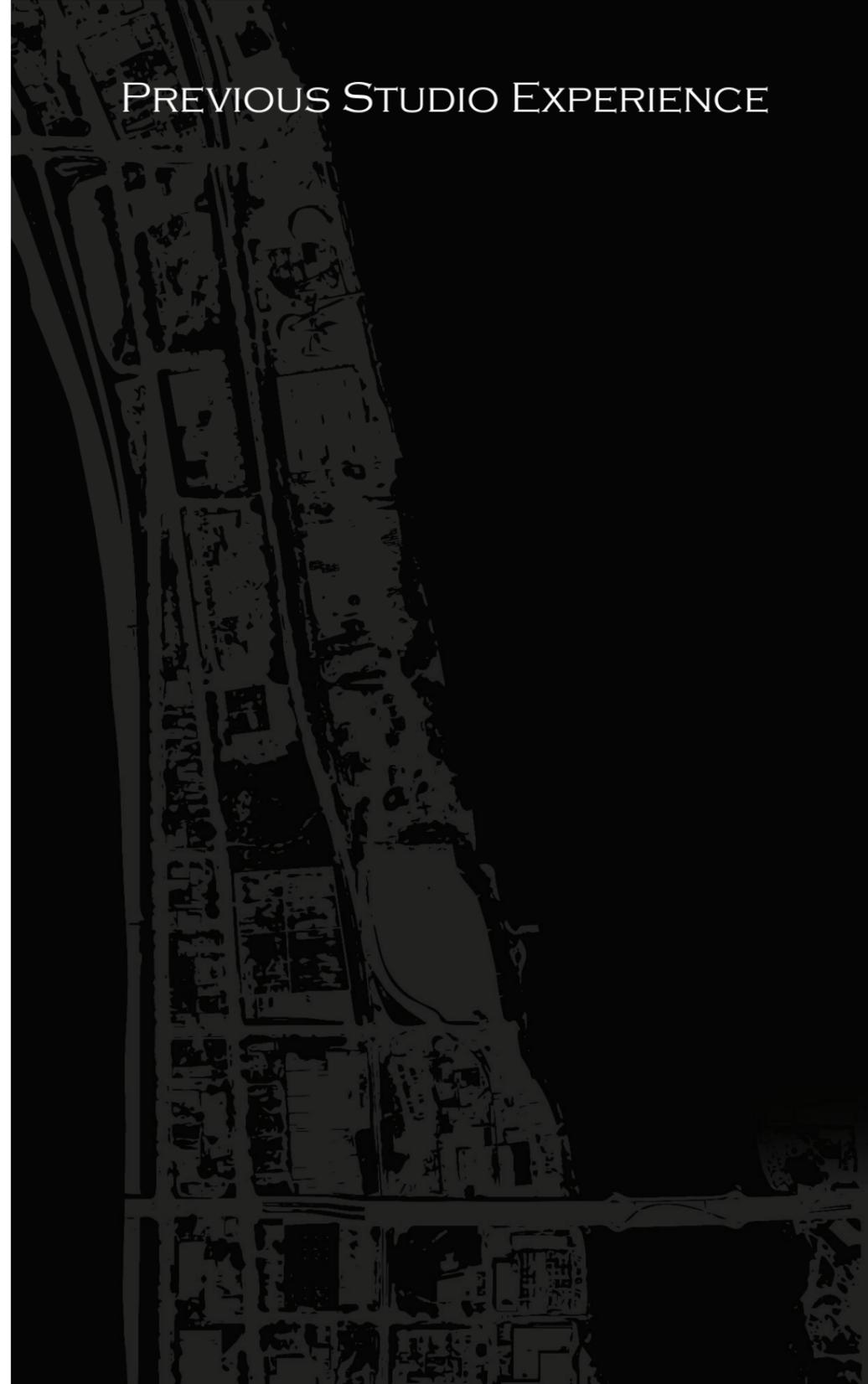




# APPENDIX



# PREVIOUS STUDIO EXPERIENCE



## SECOND YEAR

DARRYL BOOKER  
TEA HOUSE

CINDY URNESS  
MONTESSORI SCHOOL  
COLORADO DWELLING

## THIRD YEAR

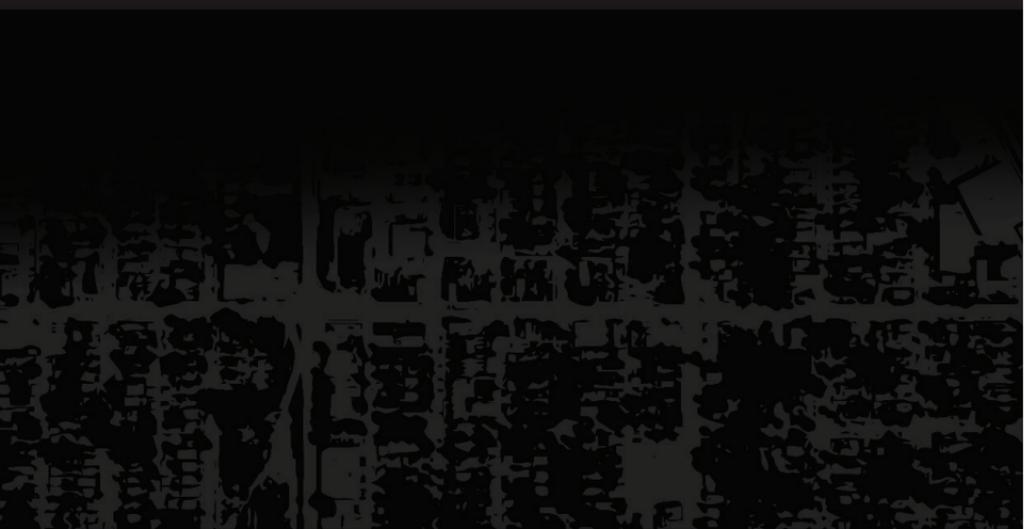
MIKE CHRISTENSON  
ART MUSEUM  
BORDER CROSSING

REGIN SCHWAEN  
FARGO VISITOR CENTER  
AFORDABLE HOUSING DEVELOPMENT

## FOURTH YEAR

DAVID CRUTCHFIELD  
HIGHRISE CAPSTONE

PAUL GLEYE  
INTERNATIONAL DESIGN STUDIO



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