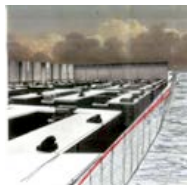
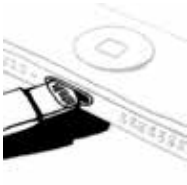




DESIGNING THE CREATIVE SPACE OF TOMORROW

# FUTURE OF WORK

SPRING 2018





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DESIGNING THE CREATIVE SPACE OF TOMORROW

# FUTURES OF WORK

A RESEARCH STUDIO OF  
MICHAEL ROGOVIN  
UNDERGRADUATE SENIOR  
SCHOOL OF ARCHITECTURE  
ARCHITECTURE STUDENTS  
SAID 4002  
TASKED TO FORCAST THE FUTURE  
SPRING 2018  
OF WORK SEEN THROUGH THE  
LENS OF SOCIAL, ECONOMIC, AND  
TECHNOLOGICAL CHANGE

## DESIGNING THE CREATIVE SPACE OF TOMORROW

# FUTURE OF WORK

Architecture has a unique responsibility to anticipate and shape the future. Buildings and spaces designed today will not be completed for years, then are expected to remain relevant for decades or indefinitely. For this reason, design must always look forward to anticipate what changes in society and technology may bring and conversely what elements remain timeless. This studio sought to investigate one facet of the future that has already gone through many rounds of radical change, human work and the space that supports it. The industrial revolution saw the rise of machine labor; the 1970's digital revolution brought us computational power and our own information age has connected us all. It is unclear where we go from here, but if we are to design for the future, it is important we consider both current trends and examples from the past to establish a broad understanding of where work is, has been, and is heading. Examining the impact of spacial design on work requires careful dissection of space and its relation to the human form and impact on behavior. Students considered this from the scale of an individual's immediate surroundings to the larger urban environment and natural world. The final goal of the studio was to link research to the design of a working environment for the year 2030 that supports innovation and creativity.

The genesis for this studio began when Cincinnati architecture firm BHDP approached University of Cincinnati's School of Architecture and Interior Design (SAID) and proposed a research partnership to investigate topics for the future of the workplace. This led to a series of design studios where UC faculty teamed up with BHDP workplace designers to lead students through a design process informed by their own research. This studio is the first in the series. Adjunct professor Michael Rogovin led the studio with Dominic Iacobucci and Drew Suszko as industry consultants from BHDP. The studio was split into three distinct phases of Research, Synthesis, and Development that made up the 15-week course. The subsequent chapters in this book are a result of the student work.

## STUDIO WORK

Jonah Pruitt working in studio



## A NOTE FROM DOMINIC IACOBUCCI OF BHDP

# FORWARD

Focusing on the past, present, or future has been a longstanding debate. The past presents opportunity to dwell on the bad and relive the good, while it can be hard to appreciate and live in the present. While both are known, the future is an elusive beast that has inspired many to dream.

Most businesses are created to maximize value and ultimately financial profitability. Companies continue to try to tame the future and stay relevant while optimizing their business. They work hard to forecast what may occur and build strategies around those predictions. This holds true for Corporate Real Estate in organizations, responsible for delivering workplace.

BHDP Architecture, as leaders in workplace design, has been asked by our clients several times; “What is the workplace of the future?” This is the wrong question. The workplace is a tool that supports and impacts people accomplishing tasks both independently and collaboratively. The question that needs to be asked is more human centric; “What is the future of work?”

Work is accomplished through a series of individual habits and behaviors; combined as a collective to define a company’s culture; organized under and influencing business structure.

BHDP sought out the University of Cincinnati to help hypothesize the future of work. As a partner, UC would be able to provide a research methodology with an expanded team to ponder the question. Their primary team members comprised of students, a diverse group across several majors, who are future workers. Their perspective provides a unique backdrop for forecasting how future work may be accomplished. They have the opportunity to design potential tools and solutions to influence their projected future.

## MID REVIEW

Jay Schairbaum conversing with Dominic Iacobucci



This specific class was the fifth exploration on this topic. All the students involved in the class were Senior Bachelor of Science in Architecture students. The students were all very smart and engaged. They were inquisitive, and several were dreamers. While the topic focused on work in general, many gravitated to larger, more complex social subjects that have a direct relationship with work, but also mold our society and world. As future architects that are designing the future, they whole heartedly wanted to design a future that is better than today. While they all were concerned with design and aesthetics, they quickly gravitated to and embraced people centric problem statements and topics. Their outlook on the future was hopeful, but at times grim, accepting of less desirable end states. The class did learn to embrace their influence and responsibility, elaborating on human centered ideas influenced by a rapidly changing world, mostly due to communication and technology, to expand on future of work ideas that make a difference.

The ideas in this book span many topics and ideas of various scales and complexities. While the research done over this semester was not exhaustive given the parameter of time, all the ideas are interesting and catalysts to thoughtful dialogue. As a reader, please don't look to this document to accurately predict the future. Instead, explore open-mindedly to find inspiration.





# FUTURE OF WORK RESEARCH

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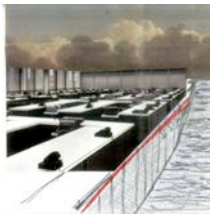
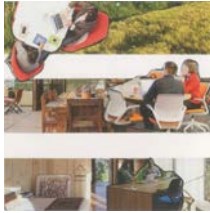
# FUTURE OF WORK RESEARCH

The first five weeks of studio were dedicated to research. We began with a design thinking exercise led by Dominic and Drew of BHDP. Our objective was to explore 'Influencers' and 'Habits and behaviors' that drive work and innovation. In this case, influencers were understood as external factors that impact an individual. An example would be a company's working hours (i.e. 9-5) or an aspect of office culture, such as dress code. 'Habits and Behaviors' were often in a direct cause and effect relationship with influencers. These represented an individual's expressed response through either conscious or unconscious means. Layered on this investigation, students were asked to consider their observations in relation to time. Would their results be different in the present, near future, or far future? The findings of this exercise were assembled into a series of narrative images that explored their thoughts through a visual media.

The goal of our initial design thinking exercise was to identify potential research topics that address issues of the future of work. Students worked in pairs to conduct their research. The results are documented in the pages that follow.

# 4 SQUARE - DIAGRAMS

Work by Shoshanna Sidell, Jonah Pruitt, & Jay Schairbaum



Bar 01 in the past



Bar 01 in the future in the past



Bar 01 in the future



Bar 01 in the future

# BALANCING THE MULTI-GENERATIONAL WORKFORCE

## AGENTS OF CHANGE

MATTHEW DAVIS

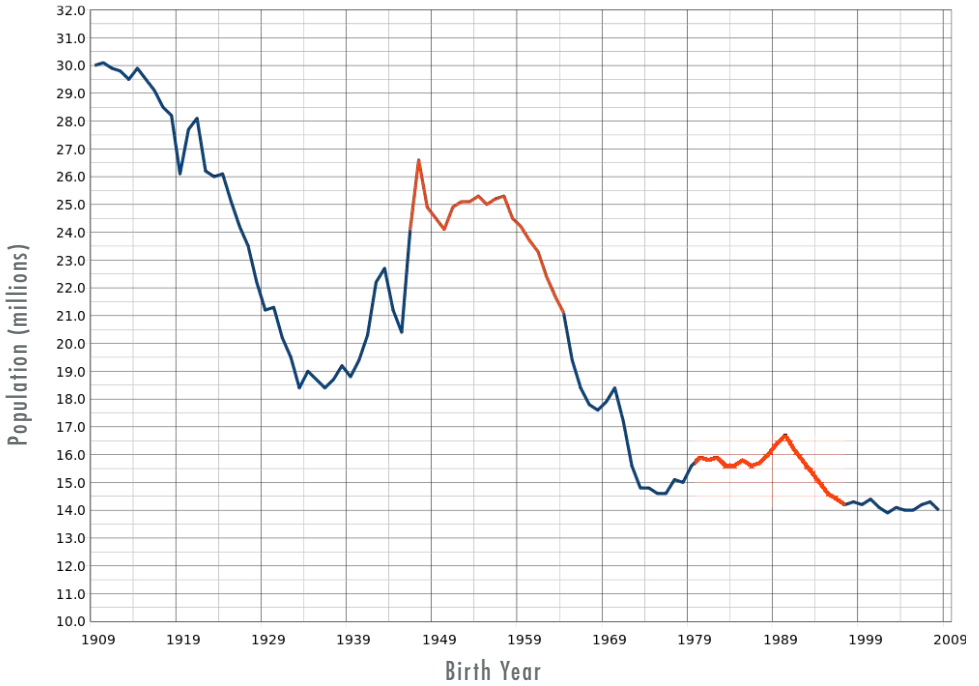
HANNAH JOHNSON

The workforce is undergoing a dramatic demographic transition. As aging Baby Boomers cling to the reigns of industry, companies are increasingly having to accommodate for the influx of young workforce participants, the Millennials. While many in the media like to perpetuate an antagonistic relationship between these two generations, business leaders have realized that they will have to make great changes to accommodate these vastly different demographics. The largest effect of this generational transition has been the deterioration of physical hierarchy in the workplace. In attempting to appease a young talent pool of Millennials entering the workforce, businesses are disbanding the tangible elements of hierarchy that older generations, like Baby Boomers, have come to understand.

Open floor plans, collaborative spaces, and specialized zones permeate the workforce, and older employees are having to adjust. With workers in Generation Z on the horizon, the modern office must be prepared to adapt to the needs of a diverse age coalition during an influx of new technology. Through innovation and compromise, offices will be able to accommodate for clashing generations in an era of dismantling hierarchy and constant innovation.

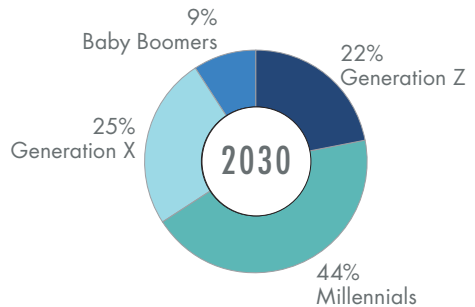
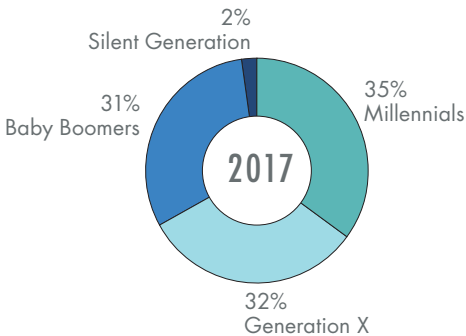


## CHANGING DEMOGRAPHICS



"The Birth of Rock N' Roll, 50's-60's." Rock. Accessed April 30, 2019.  
<https://history-of-rock-music.weebly.com/the-birth-of-rock-n-roll-50s-60s.html>.

## SHARE OF THE WORKFORCE





**1946-1964**

Baby Boomers

- Used to traditional workplaces
- Most experienced
- Difficulties with new technology
- Reaching retirement age



**1965-1980**

Generation X

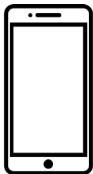
- Used to traditional workplaces
- Experienced
- Desktop/Laptop oriented
- Prime employment age
- Families, young kids



**1981-1996**

Millennials

- Attracted to open layouts and casual atmospheres
- Unexperienced but talented
- Tech savvy and easy to train
- Young and starting out, financially unstable



**1997-Present**

Generation Z

- Entering the workforce in 10-15 years
- Will be extremely tech savvy
- Mobile and transient
- Worksharing and Coworking trends

## TRADITIONAL OFFICES

Older workers are more accustomed to individual space and privacy



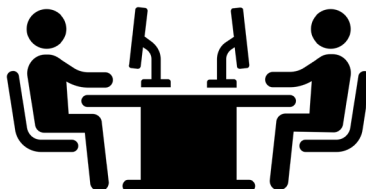
## CUBICLE CRAZE

Individual workstations are becoming less rigid than the cubicle farms of yore



## OPEN AND SOCIAL

Younger employees are much more willing to work in cooperative, open environments



# Climate Change, Extreme Weather, and The Workplace

KATLYN MABRY

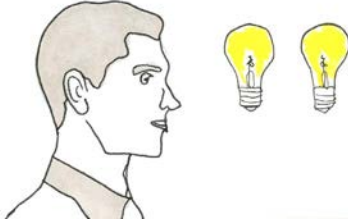
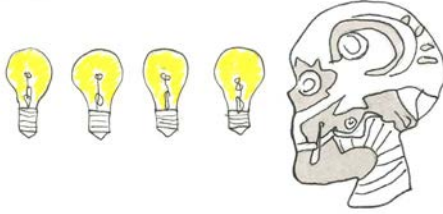
JOHN GARRISON

Climate change is drastically affecting our built and natural environments. Each year new studies are done to assess the damage we have done to our environment. As climate change progresses, these studies are showing that weather is going to be harder to predict and more volatile.

Current extreme weather conditions include; rising temperatures, intense storms and flooding; and changes in wind currents. Along with these changing weather conditions, we have also polluted our air. Volatile storms and flooding have a direct impact on our cities, office buildings, how people get to work, and how they work. We are also seeing the effects of air pollution and higher CO2 levels in the workplace. Both office and the built environment must find strategies to adapt to future extreme weather and maintain a workable environment.

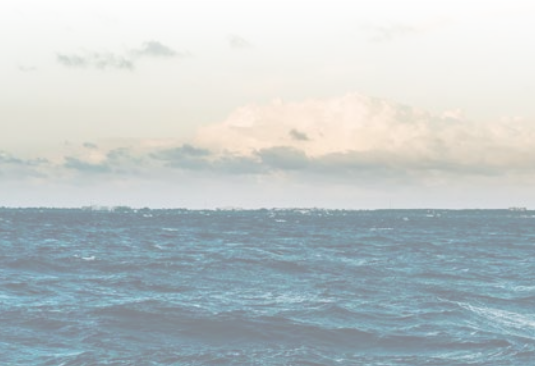
“Scientific estimates place the window of opportunity for reversing this trend in the very near term—according to some, as briefly as over the next ten years. After that, the global climate may change irreversibly and humans will just have to adapt.”

FUTURE  
In peril

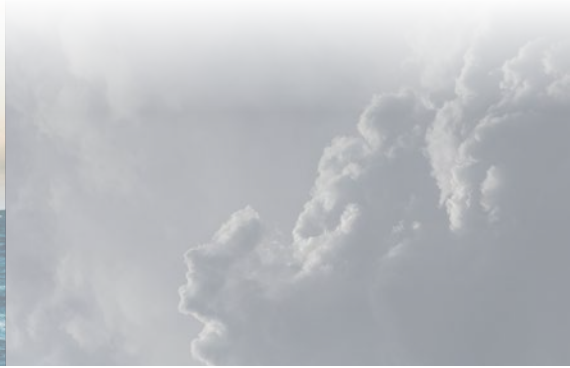


## REACTION CYCLE

Near Future Interventions

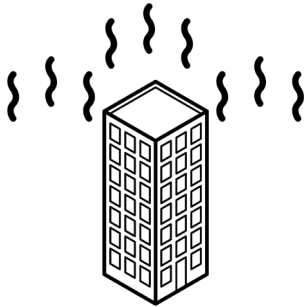


CLIMATE CHANGE



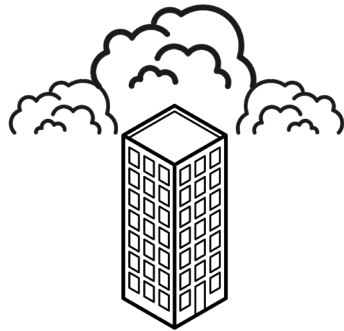
INCREASED EXTREME WEATHER OCCURRENCE

### EXTREME HEAT

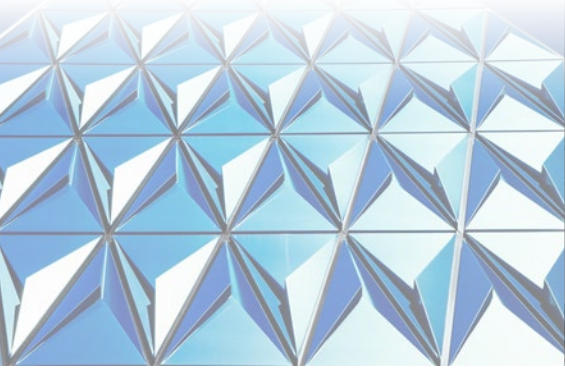


- EXTERNAL SHADING SYSTEMS
- USE OF A GREEN ROOF
- IMPROVED THERMAL INSULATION
- DOUBLE/TRIPLE GLAZED WINDOWS

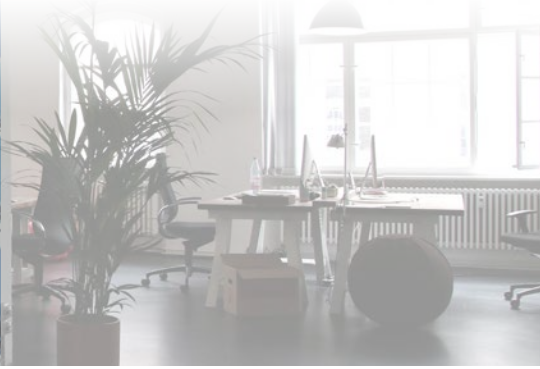
### AIR POLLUTION



- PROVIDE FILTERED A/C AND VENTILATION
- MONITOR CONCRETE CONDITION
- INSTALL GREEN VEGETATION

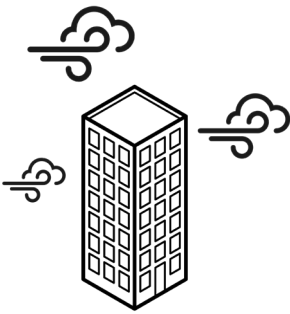


## BUILDING ADAPTATION



## OFFICE SPACE REACTION

### WIND INTENSITY



- ASSESS TREES FOR VULNERABILITY
- MINIMIZE OVERHANGING STRUCTURES
- MONITOR ROOFS AND CLADDING
- STRONGER FOUNDATION

### STORMS AND FLOODING



- MONITOR/MAINTAIN DRAINAGE
- INCREASE PERMEABLE OUTDOOR SURFACES
- RAINWATER MANAGEMENT
- PROTECT SERVICE/MECH. ROOMS
- RAISE SITE ACCESS

## EFFECTS ON THE OFFICE



Difficulties in access and commuting from flooding, and poor weather conditions



Warmer workplaces and difficulty cooling, causing discomfort and lower productivity



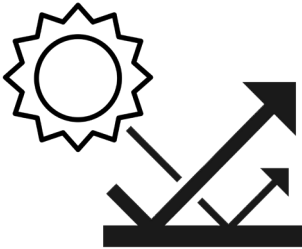
Higher CO2 concentration levels leading to sickness, CO2 is even higher in dense buildings



More storms and extreme weather leading to more moisture absorption by buildings, causing mold and harmful health effects.

## FAR FUTURE ADAPTATIONS

### EXTREME HEAT



- SOLAR THERMAL CLADDING
- MAKING ALL ROOFS AND ROADS WHITE

### AIR POLLUTION



- PLANTING TREES EVERYWHERE ON A MASSIVE SCALE—REFORESTATION
- GREEN BUILDING FACADES

## OFFICE ADAPTATIONS



Allowing less formal clothes, better air circulation and A/C



Promoting sustainable practices like recycling and public transportation

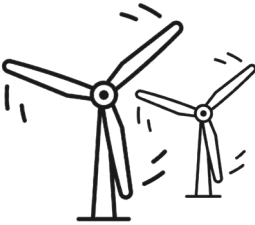


Developing an extreme weather contingency plan



Some companies are considering paid leave for extreme weather so there is less stress on employees

## WIND INTENSITY



- UNIFIED WIND PLANNING IN CITIES
- WIND BAFFLES

## STORMS AND FLOODING



- BUILD ALL ON STILTS
- FLOATING BUILDINGS

# TECHNOLOGY'S IMPACT ON THE HUMAN WORKFORCE COMPRESSION

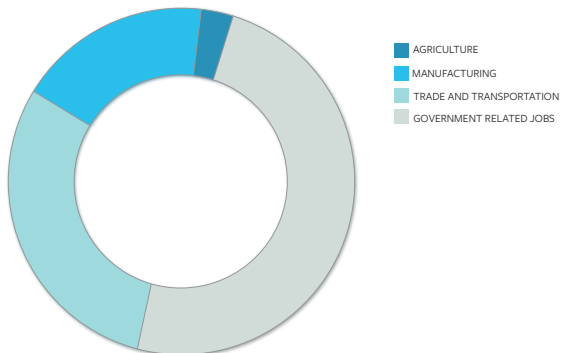
MATTHEW DAVIS

HANNAH JOHNSON

Advancements in artificial intelligence and computing capabilities have drastically altered the ways in which humans work. Coding continues to absorb many basic office activities, and the future workplace will consist of almost exclusively computational work. After analyzing technology's role in the average workplace over the past 50 years, we predict a labor force will emerge centered on non-programmable human qualities that will work in tandem with computers. Mass production will become a thing of the past as technology advances. It will be replaced by mass customization and a workforce that is capable of keeping up with the demand. Consequently, buildings will need to respond to this new environment. Mass customization will require quick iteration and frequent collaboration.

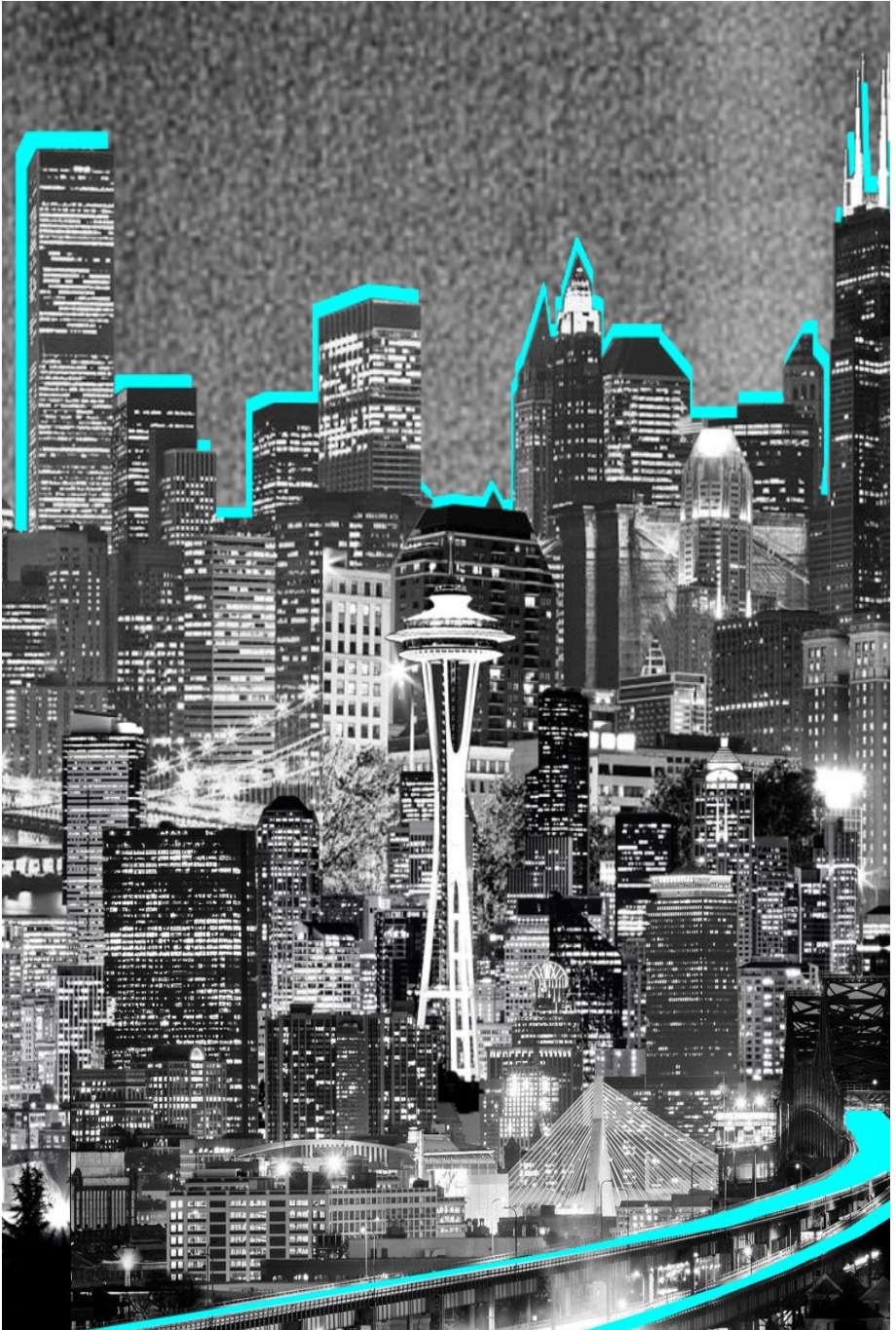
## JOB BREAKDOWN IN 2015

With increased automation, jobs involving physical labor continue to decline



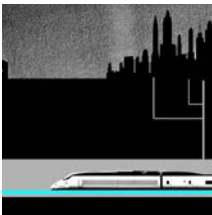
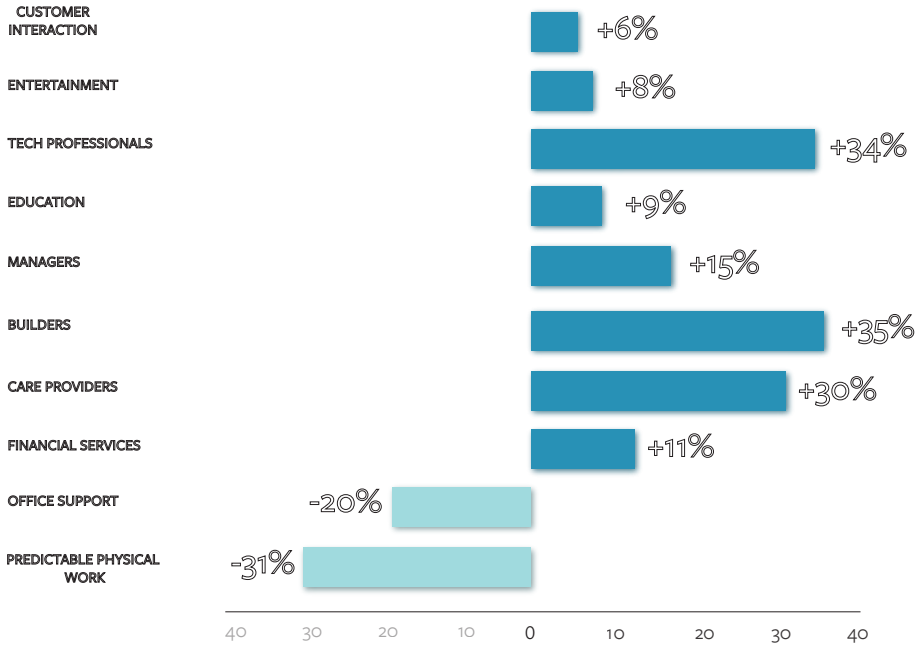
## COMPRESSION OF NEEDS

As technology advances, everything a person needs will be in one location



## JOB SECTOR GROWTH 2030

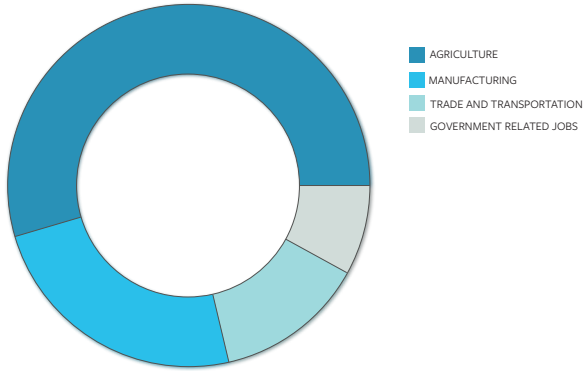
Unpredictable and specialized jobs will see the greatest growth by 2030



After researching the various job growth and displacement over a series of three different 50 year spans, it is clear that the workplace has become much more integrated. Consequently, it has become increasingly compressed both in the tools we use and the space we use to complete work. Looking at the potential job growth, this trend will continue. Not only will jobs change, but cities will become more compressed containing everything that one needs. Time will compress with the influence of technology: a trip that once took 3 hours will now take 10 minutes. The workplace will have no choice but to respond.

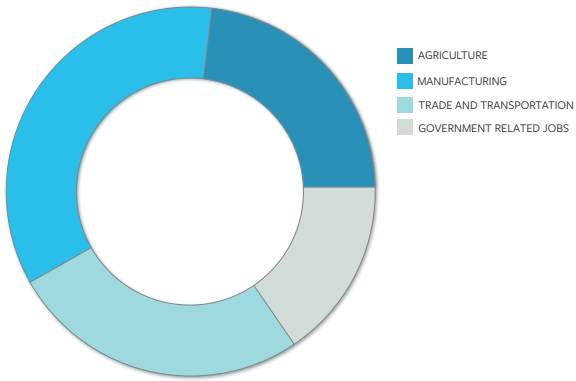
### JOB BREAKDOWN IN 1880

The large majority of work was physical based



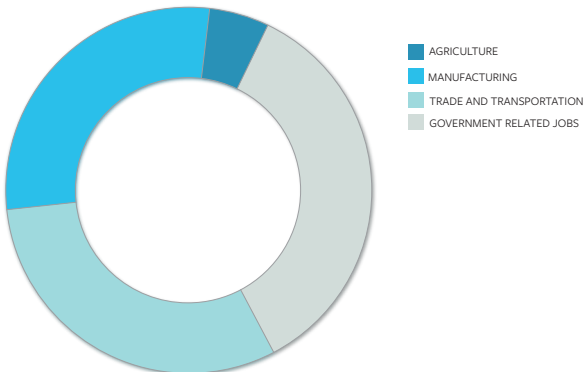
### JOB BREAKDOWN IN 1930

With the rise in machines, manufacturing began to take off



### JOB BREAKDOWN IN 1980

With improvements in technology, digital fields began to grow



# FUTURE OF WORK CRAFTSMANSHIP

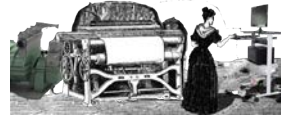
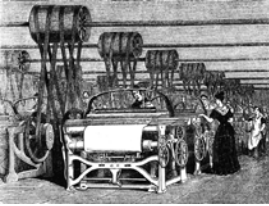
JOSHUA ANDERSON

JARED SCHROEDER

The past understanding of craftsmanship is seeming to fade with the rise of increasingly more sophisticated crafting machines, robots, and AI. With this rise comes the question of whether craft as we have understood it is still required. If a robot can craft something with certainty in uncertain situations, what value lies in the touch of a human craftsman? Are there certain nuances that provide for the essential existence of the craftsman? Through examination of the process of craft, it can be concluded that in innovation and exploration, there lie few limitations with the human craftsman. As the tools of the craftsman advance, the experienced user becomes more essential. Any amount of information can be taught or programmed, but experience and the seemingly insignificant details remain the staple of the highest quality craftsman. The idea and values of good craftsmanship will remain unchanged; the occupations of those considered craftsmen are and will undeniably shift in definition.

### EVOLUTION OF A WEAVER

The loom weaver has adapted; yet their creativity is still the first step



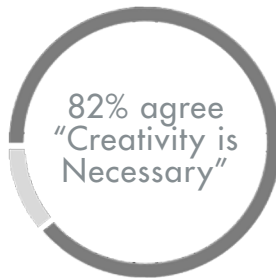
### EVOLUTION OF A MATHEMATICIAN

The mathematician has adapted; yet their competence is still the first step



### EVOLUTION OF A LUMBERJACK

The lumberjack has adapted; yet their cut is still the first step



Industries that can be considered craftsman, as of 2016, make up 18.3% of the United States Gross Domestic Product, which is 3.4 trillion dollars annually. Many of these industries are shifting towards automation but the need for innovation and creativity will remain.

# THE FUTURE OF WORK IN BASELESS WORLD

# DISPLACEMENT

KRITI CHAUDHRY

JONAH PRUITT

The displacement of people, jobs, and architecture is a defining component to this decade and will continue to shape how we work on a global scale. Resettlement of immigrant workers, within their own country and internationally, will continue to be a major humanitarian and political issue. At the same time, empty buildings represent a hazard and blight on communities and incorporating them into future work will only become more imperative for environmental and economic reasons. The workplace of the future must find ways to incorporate international workers, underutilized infrastructure, and densifying jobs for underemployed neighborhoods. While this is a massive scope with international implications, only localized and focused responses will truly help businesses and communities grow in urban environments and fight gentrification. Cities like Cincinnati are poised to be the future of these local movements due to their number of vacant buildings, growing economy, and diverse neighborhoods.

According to the UN Refugee Agency, 65.5 million people were forcibly displaced in 2017. Armed conflict, political unrest, climate change, and opportunity all drove this record breaking year. People from all walks of life have been forced from their homes and cultures and now drift, trying to build new lives in the same country or internationally.

EARLY CONCEPT COLLAGES



Job displacement in global economies is a concurrent force shaping policy and communities to the same degree as population displacement. Work is becoming more focused in cities, and low paying work is moving to cheaper labor markets, leaving many workers unemployed or underemployed. The last piece of the issue is the displaced uses of buildings and structures that now stand in cities unused and unsightly. Rapid change on a global scale has debased populations, work, and the very basic uses of buildings. This research attempts to find the underlying issues and causes of this displacement and how they will affect the future workplaces and communities.

The three types of disruptions we identified are architectural, population, and job displacement. Deeply interlinked, these forces have shaped the world's cities and countries in profound ways. Understanding key facts on a global level can help to clarify how companies need to adapt locally for the future. The best ways to mitigate the problems with displacement happen at the small scale by creating communities that newcomers have a connection to on an economic, spatial, and emotional level.

The issue of population displacement is at an all time high. Countries in the Middle East see the highest number of displaced persons. Though much attention is given to the 22.5 million people seeking new homes internationally in 2017, the majority of displacement, however, is within countries. With over 40 million people uprooted within the borders of their own country, internal migration of people is a major concern. Internally Displaced Persons (IDPs) are also extremely vulnerable due to limited internal and international aide that can reach them. There are three main causes driving population displacement and mass migration: desire for opportunity, political or military conflict, and climate change. Often interlinked, these causes are incredibly complicated and require careful and thorough study. As the climate continues to change, extreme weather, drought, and a rising sea level will stress governments and could lead to mass migration and political strife. The promise of new work or well being in a new city or country is a beacon drawing people to new areas, even if the those areas are not prepared for such an influx. It is also important to note the role of gentrification of many post-industrial cities around the world. This issue has cause rapid change and dislocation in poorer, often ethnic communities. The workplace of the future needs to be sensitive to these issues as more people are displaced or are directly related to people who are.

GLOBAL SCOPE/IDP AND CLIMATE CHANGE  
 Below are maps of IDP numbers and climate change effect

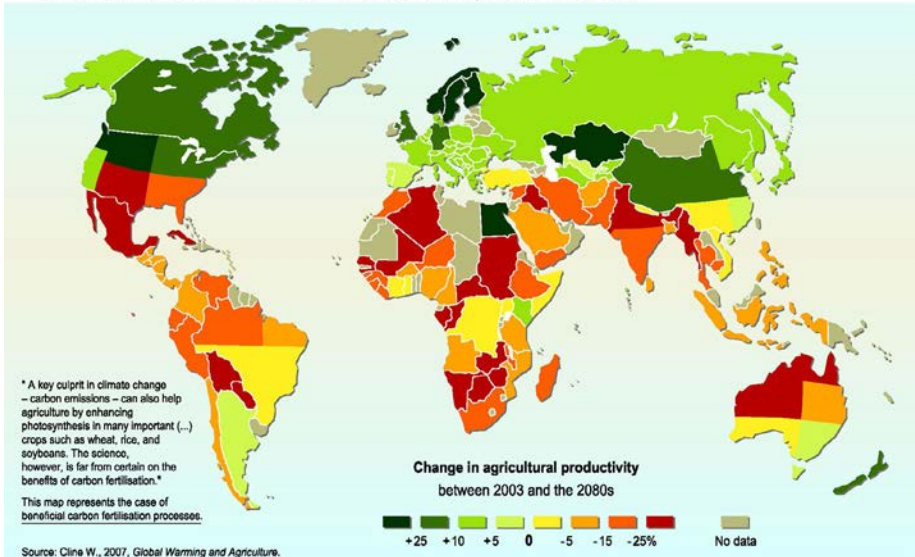
**The Global Overview 2012:**

People internally displaced by conflict and violence



Goldberg, Mark Leon. "Map of the Day: The Internally Displaced." UN Dispatch. May 16, 2014. Accessed April 30, 2019. <https://www.undispatch.com/map-of-day/>

**Projected impact of climate change on agricultural yields**



"Projected Impact of Climate Change on Agricultural Yields." European Environment Agency. June 07, 2017. Accessed April 30, 2019. <https://www.eea.europa.eu/data-and-maps/figures/projected-impact-of-climate-change>. 31

Job displacement has been a recurring topic, especially since the 2008 global economic meltdown. Job displacement refers to an involuntary loss of a job that is not mutual or terminated by the employee, in other words, a layoff. This includes several classes of workers and labors, especially those with lower levels of education and experience. This creates a pool of unemployed workforce with specific skill sets looking for jobs that might not exist anymore. About 7 million peoples' jobs have been displaced since 2008. 3.2 million people were displaced between 2013 and 2015, with 16% of those still unemployed as of January 2016.

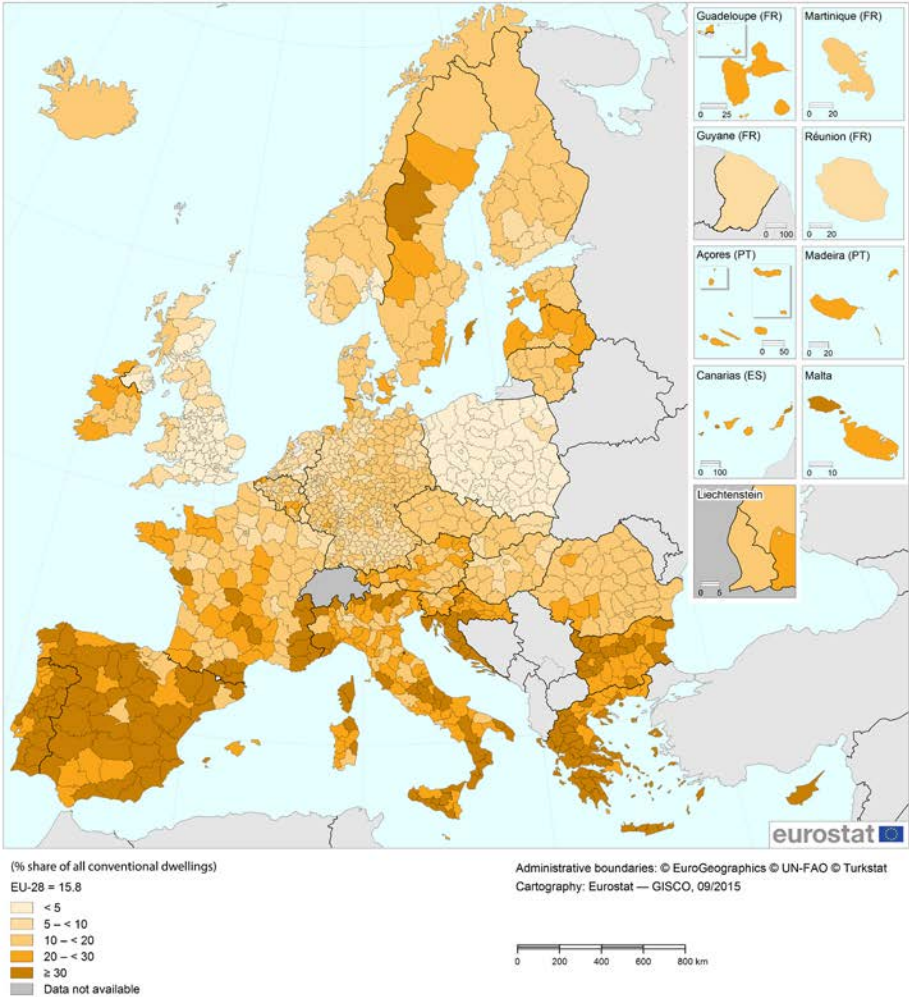
One major culprit is automation, principally in the manufacturing industry. People have been removed as robots have been able to perform the same task quicker and cheaper. This has led to creation of other jobs, but these need higher levels of education and skills that the displaced population does not possess. Other culprits include, but are not limited to, economic recession, company restructuring, company dissolution, outsourcing, and climate change. Job displacement and displacement of people are deeply interrelated subjects. Loss of a job can also force people to move, either to find a new or better opportunity or a lower income neighborhood. At other times, an influx of jobs in a particular area also makes the people move to that area, leading to gentrification. Creating safety nets and ways to find new jobs has been a major focus of job displacement, but one of the most likely end results is for an individual to move to find work.

The last component of this research is architectural displacement: the removal of a building's original role, leaving an empty or underutilized space behind. Unlike people and jobs, buildings cannot move. Their intended use, however, can move far beyond their walls and render the building useless in a matter of years. Post-industrial economies see these buildings in every city. Empty factories, warehouses, homes, shops, and other infrastructure dot the urban fabric. Closely tied to job displacement, buildings whose use has been moved to a new area or ceased to exist lead to architectural displacement. On a wide scale, whole cities can be displaced, leaving its residents with meaningless, boarded up architecture. Population displacement also comes in direct contact with displaced architecture. Without uses for buildings, neighborhoods can become blighted and empty. This has a negative effect on health, leading people to leave their neighborhood in search of better maintained and populated areas. This process feeds itself, leading neighborhoods deeper into displacement and poor health. Finding new uses for the displaced architecture of cities has proven to be a massive urban design issue. According to Deutsche Bank, around 12% of office and 10% of industrial properties are vacant, which equates to millions of unused square footage. New apartments, shopping centers, and many other uses have moved into displaced architecture. Despite this, the challenges associated with vacancy continue in America and around the world.

# VACANT BUILDINGS IN EUROPE

The map below describes the density of displaced buildings

Unoccupied dwellings, by NUTS level 3 region, 2011  
 (% share of all conventional dwellings)



Note: Swedish regions, data on unoccupied dwellings refers to dwellings without registered occupants. Norwegian regions, low reliability.  
 Source: Eurostat (Census hub HC53)

“Statistics Explained.” Statistics Explained. Accessed April 30, 2019.  
[https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Unoccupied\\_dwellings,\\_by\\_NUTS\\_level\\_3\\_region,\\_2011\\_\(%\\_share\\_of\\_all\\_conventional\\_dwellings\)\\_PITEU17.png&oldid=374418](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Unoccupied_dwellings,_by_NUTS_level_3_region,_2011_(%_share_of_all_conventional_dwellings)_PITEU17.png&oldid=374418).

## CINCINNATI BREAKDOWN BY NEIGHBORHOOD

Visualization of vacancy data.

There are 2140 confirmed vacant properties in Cincinnati, mostly along the industrial core.

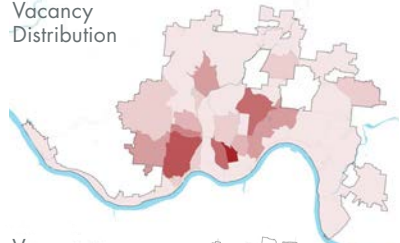
Areas of low vacancy appear to be furthest from industrial and manufacturing sites in affluent neighborhoods.

The ratio of vacant buildings to citizens is 1:140.

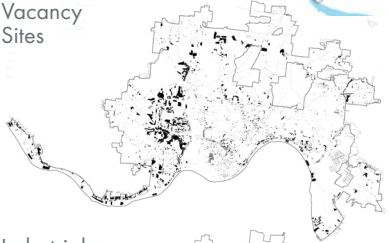
Cincinnati, OH



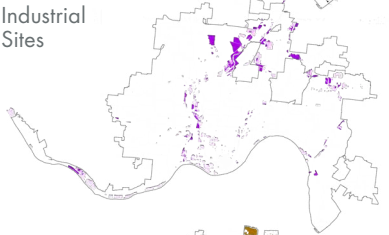
Vacancy Distribution



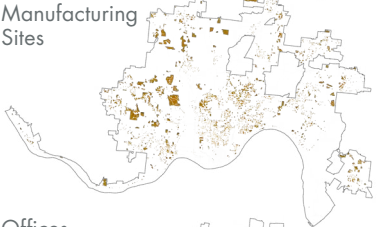
Vacancy Sites



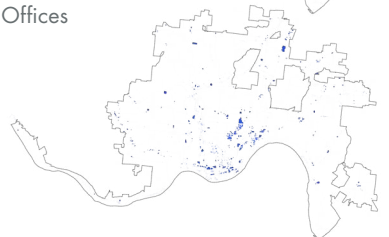
Industrial Sites



Manufacturing Sites



Offices



The best responses to these issues are focused, community-based programs that help new comers adjust and find employment. International aid can only do so much, and companies need to find ways to sponsor programs to acquire high quality talent and work while also densifying neighborhoods and helping communities. International and native populations would benefit from a system in which disused architecture is reconstituted as living and working quarters for displaced people. Cities would see a densification of jobs for new arrivals as well as their local communities. One example in Greece saw an abandoned hotel converted into quarters and workshops for refugees, equating to 300 people finding a new community and safety. Making spaces like this permanent components to cities could pay dividends for cities and companies through vibrant communities and dense pools of talent.

In Cincinnati, the data available indicates that there is a large opportunity to create new work spaces that incorporate living and densification programs to leverage the city's displaced architecture and jobs. With people from all over the world migrating, Cincinnati's population of approximately 300,000 is projected to grow. Using the existing building stock to provide living and working environments is essential to the health of Cincinnati and its residents.

The workplace of the future, in Cincinnati and all over the world, is dependent of working with existing abandoned buildings, displaced people, and densifying neighborhoods. More changes such as the rise of freelancing and automation put even more strain and displacement in urban life. Cities and workplaces need to do more than be places destined to be displaced — they need to be robust communities that can absorb massive change in a rapidly expanding and growing world.

In Cincinnati, there are many opportunities to reclaim displaced architecture and refill neighborhoods with people and work. Four neighborhoods: Northside, Price Hill, Camp Washington, and The West End all show high levels of vacancy and are good candidates for moving forward in re-densifying Cincinnati. None of these neighborhoods are the downtown of Cincinnati and they all have a mix of industrial, commercial, institutional and residential uses. The large, empty spaces and availability of more open land are prime for the reintroduction of people and jobs. It also should be noted that the neighborhoods with high levels of offices, such as downtown and the riverfront, have lesser vacancies than neighborhoods that have an industrial and manufacturing focus. Bedroom neighborhoods that are almost entirely residential (Mt. Lookout, Linwood) also have a lesser vacancy rate. The mixing of industrial sites or dense levels of low income housing with greater urban fabric is a recipe for vacancy in Cincinnati. Repurposing disused sites for both office and new housing is essential to the ongoing health of these neighborhoods. Also this activity will help the overall vacancy rate and put less pressure on downtown Cincinnati for traffic and housing, mitigating gentrification and gridlock.



Northside currently has ninety-three buildings registered as vacant with many more that are not technically vacant, but most certainly underutilized. A majority of vacant sites here are residential or unfit candidates for offices. The more interesting sites for office development are towards the south near the highway. There are many large warehouse buildings very close to the main artery, Hamilton Avenue. Many housing efforts are growing in Northside because of its parks and family friendly downtown. Pictured on the next page are two examples of vacant buildings that can be found in Northside (image courtesy of Google Earth). Mostly one to three stories, these vacant buildings could be a good fit for office space or workshops. Their proximity to restaurants and central Northside are a plus as well.



**POWERS STREET AUTOMOTIVE MAINTENANCE BUILDING**  
1706 Powers St, Cincinnati, Ohio

IMAGERY ©2019 GOOGLE



**BLUE ROCK STREET FACTORY BUILDING**  
1638 Blue Rock St, Cincinnati, Ohio

IMAGERY ©2019 GOOGLE



**BAYMILLER STREET SCHOOL**  
2016 Baymiller St, Cincinnati, Ohio

OCTOBER 2016 @ 2019 GOOGLE



**FREEMAN AVE. SCHOOL**  
2008 Freeman Ave, Cincinnati, Ohio

JULY 2014 @ 2019 GOOGLE



Next to Over-the-Rhine in Cincinnati is the much less famous and much smaller West End. This area used to be a dense neighborhood with schools and multi-family homes. There are currently several housing developments and newly planned communities, but many of the older residential and institutional buildings are vacant. This small area has 168 vacant buildings and most are residential and located in the northern part of the neighborhood. The two most interesting buildings for development are historic former schools that have been empty for years (images courtesy of Google Earth). They are within walking distance to Findlay Market and Vine Street and could make for very interesting offices or apartments.



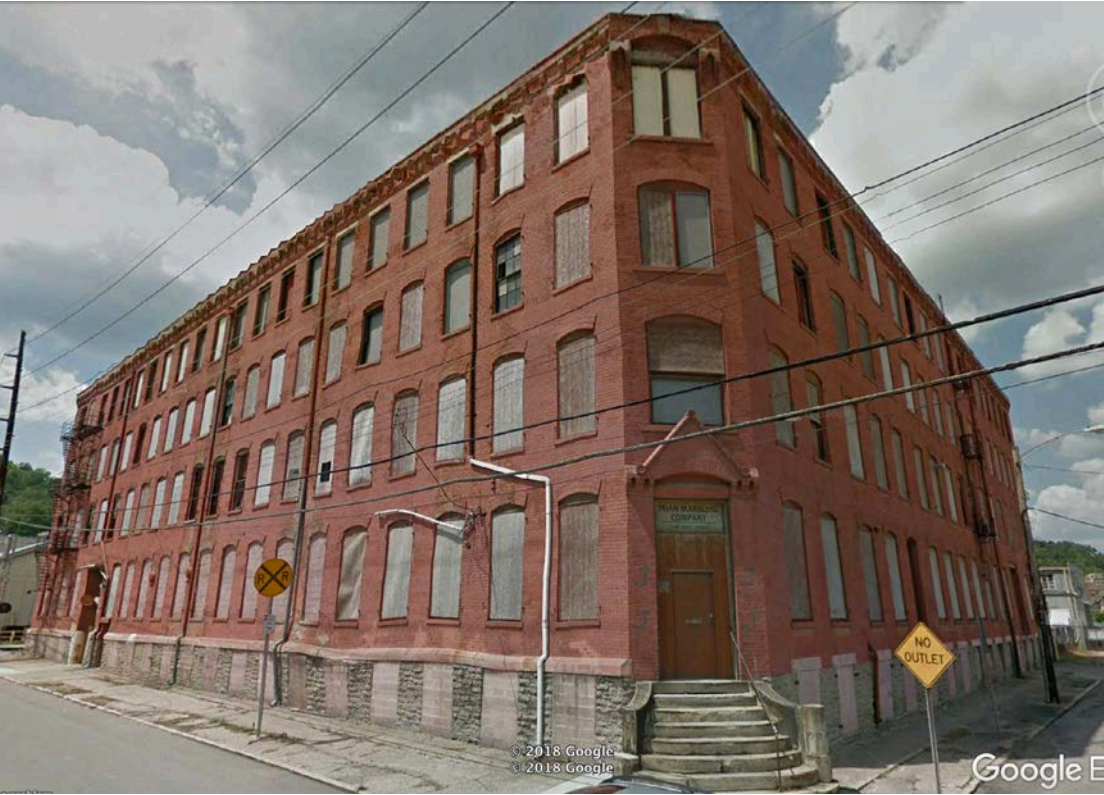
POWELL'S VALVES FACTORY NO. II  
3245 Colerain Ave, Cincinnati, Ohio



MAY 2018 @ 2019 GOOGLE

One of the areas most affected by displacement through the years is Camp Washington. Most of the housing stock and several key factories have been demolished but never replaced. Along the main streets such as Colerain Avenue, there are obviously missing buildings and plenty of parking lots that serve as poor substitutes. Camp Washington used to be the beating heart of the slaughterhouse and manufacturing of Cincinnati, but today, many of the sites are vacant brown fields. One key building, however, can be used to provide a new anchor to the community. The Powell Valves building No. 2 is a vacant factory that stands partially demolished and is adjacent to the main park of Camp Washington (image courtesy of the Library of Congress). As of now, there are two main bus lines and one bike lane in Camp Washington, but this will change under the community's new neighborhood plan. Camp Washington's proximity to downtown and viability for redevelopment make it a prime place to set up a workshop system that serves the neighborhood.

TRIAN MARBLENE FACTORY BUILDING  
2100 Gest St, Cincinnati, Ohio



© 2018 Google  
© 2018 Google

Google E

MAY 2018 @ 2019 GOOGLE

Lastly, the neighborhood of Price Hill represents a large challenge. Located near the mouth of the canal and the end of the Rail Lines, there is a high degree of industrialization in this neighborhood. Although Price Hill is now primarily a residential community, the bones of a industrial past remain, such as the building seen on the previous page (image courtesy of Google Earth). These multi-story units could be nuclei for neighborhood job training and offices. They are also formerly offices, unlike many of the other neighborhoods' vacant buildings.

Cincinnati, much like several other Midwestern cities like Detroit and Cleveland, has a healthy amount of building stock that is underutilized. The economic shift away from mass industry and manufacturing in these cities has hollowed out their jobs and populations. Transitioning these buildings from factories to offices could help to re-densify and solidify Cincinnati as a polycentric city with several viable neighborhoods.

## FUTURE OF WORK

# EVOLUTION OF THE WORK ENVIRONMENT

SHOSHANNA SIDELL

SRIMOYEE SINHA

The workplace is seeing a rapid change in its construction and environment. The employee is evolving and demanding more from their host organizations. Employers are rethinking company structure, spatial planning, benefits and policies to provide for and attract the incoming workforce. With automation at the brink of ground-breaking changes, the current workforce will need to be retrained, and new skills will need to be acquired. While some of the workforce will always live in the fear of antiquation, a majority are anticipating themselves to cohabitate with machines and willing to learn new trades and skills to retain their value. Employers are trying to implement new policies and programs that cater to employee well-being and promote a healthy lifestyle. Certain aspects such as flexibility and transparency within the workforce are proving to be essential towards employee satisfaction and retention. Policies like these increase employees' accountability, making their work more meaningful, and promote wellness by providing freedom of mobility instead of a fixated 9-5 job.

With the aging workforce still agile and in action, there is an abundance of various generations of employees working in any company at a given time. Programs such as mentorships and retraining are being implemented by employers for converging multi generational employees to a common platform. This symbiotic relationship is moving employers and employees from a sense of singularity to something that is plural and shared. As the global workforce is being reshaped, companies and their employees need to adapt to the technological advances that are foreseeable in the upcoming workplace.

## Mid 1900's



The "bull pen" model was created for workers who didn't work in manufacturing facilities, but companies still strove to create the same efficient use of space in their offices as they did their factories. Following factory administration use in standard office-only work settings the German plan, Bürolandschaft, was followed - a similar approach of open plans to flatten hierarchy.

A priority of the Bürolandschaft includes efficiency of space. Efficiency of space, fitting the most people in a room, was thought to increase productivity, at the expense of workers wellbeing. There was a lack of adoption to incorporate new technology, choosing to pile it onto the existing space rather than design for it. The reaction to this plan was negative, being criticized as a "wasteland" that "saps vitality, blocks talent, frustrates accomplishment" by Robert Propst, who would redefine offices beginning in the 1960's.

1970 | Herman Miller's Action Office I & II  
Evolution of work spaces 1970-2030

1970's



Following the drawbacks associated with the “bull pen” open plan — auditory and visual distractions and lack of variation in space — Robert Propst at Herman Miller developed the Action Office I & II. The adjustable three part wall of this office plan allowed flexibility in work spaces and prioritized the worker rather than the higher management or square footage efficiency.

Still utilized today in evolved versions, the Action Office was estimated in 1998 to have been in current use by 40 million Americans in 42 different versions. In an attempt to break out of the chaos of open plans that a whole generation was used to prior, the Action Office was a highly welcomed contrast.

## 1980 | Cubicles

Evolution of work spaces 1970-2030

### 1980's



As the Action Office was incorporated into the vernacular of office design and corporations, its original intention of creating flexibility was degraded as it became widely used. Employers that lacked a sense of progressiveness or understanding of why the Action Office worked created the onset of the cubicle. As less physical materials were needed on one's desk, the computer allowed spaces to be more compact therefore, cubicles became even more cramped.

In addition to the downsides including isolation and social hierarchy; the new cubicle farms that had been spawned from the flexible workplaces of the 1970's became associated with employee disposability. With the recession that occurred during this time and company absorptions, the cubicle became the poster child of layoffs.

Image on this page and previous - "History of Office Design | From the 1700's to Today | K2 Space." K2space. August 01, 2017. Accessed May 01, 2019. <https://k2space.co.uk/knowledge/history-of-office-design/>.

2000's



During the past decade, furniture designers have tried to part the sea of cubicles and encourage sociability—without going nuts. Knoll, for example, created systems with movable, semi-enclosed pods and connected desks whose shape separates work areas in lieu of dividers. Alongside, health and wellbeing became a key priority for companies to attract new talent. Company culture became more social and collaborative. This was influenced not only by the way workstations were laid out, but also due to the open and closed space combinations that facilitated chance encounters. Rapidly evolving technology facilitates agile working environments. Hot-desking and multi-purpose meeting spaces became a popular aspect of collaboration that didn't exist before.

1980 | Cubicles  
Evolution of work spaces 1970-2030



Workplaces are changing rapidly to keep up with the speed of technological innovation. Sensors will help to optimize how space is used. Robots could account for a growing proportion of the workforce. Virtual Reality and hologram screens could facilitate communication between teams based in different locations.

COLLAGE - FUTURE ASSEMBLAGE  
Shoshanna Sidell



## SO, WHAT WILL THE FUTURE LOOK LIKE ?

- With automation at the verge of a great breakthrough, employees will prepare themselves to be able to retrain and develop advanced skills.
- Employers will provide employees more freedom of choice regarding the benefits they receive based on their social and philosophical needs. They will also have freedom to change these choices based on changing life events.
- Collaborative spaces, private areas, and multipurpose rooms will coexist under one roof to integrate professional and personal needs of employees and employers.
- The global workforce will be eager to adapt and respond to technological advances and evolving human needs.

# THE FUTURE OF WORK IN SYMBIOTIC WORLD

# FREELANCE

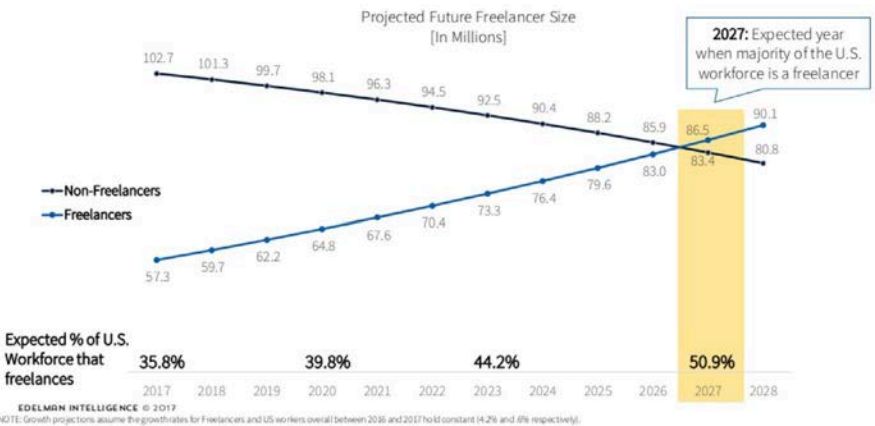
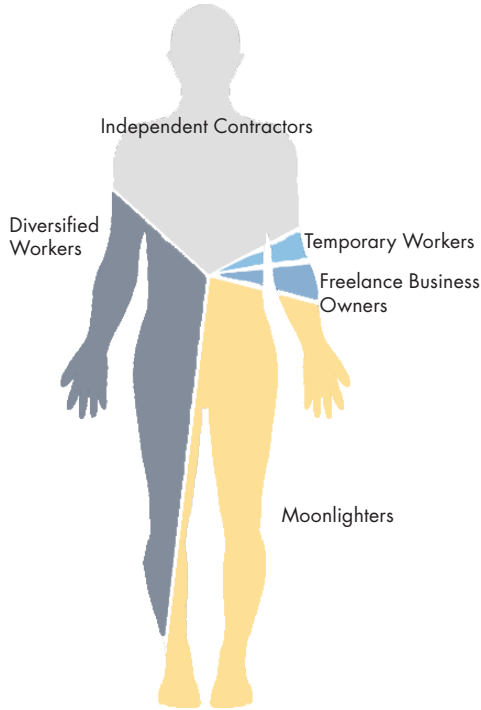
KRITI CHAUDHRY

JONAH PRUITT

Discussions about the future of work often center around the role and nature of freelance and contract work. In less than a decade, up to half the United States workforce will be working on a project-to-project basis as freelancers (Freelancing in America: 2017). Even though the societal understanding of freelance work is changing rapidly, the architectural response to this shift is moving much slower. The flexibility of freelance work must be mirrored in the design and architecture of the future work space. Coworking spaces can provide some of the necessary amenities and flexibility, but they often lack the communal and social benefits of a traditional office environment. A new type of working space is needed to provide future freelancers with a sense of belonging and security to not only ease the strain of uncertain contract work, but to create a positive environment in and outside of work.

Before the future of freelance work can be seen, the contours of the definition of the various types of freelance and contract work is necessary. The Freelancers Union defines five different types of freelancing. (Freelancing in America: A National Survey of the New Workforce, 5). This diversity indicates complexity in motives and possibilities for many workers; and that freelancers tend to gather income from many sources (traditional and contract based). In general, a freelancer is a professional — often in a creative field — that takes on work for a company or person on a project-to-project basis. Freelancers may have multiple contract jobs, or may work as a freelancer in tandem with a more traditional position at a company.

DATA COLLECTION  
Freelancing in America 2017



"Freelancing in America: 2017 Survey." Upwork. Accessed May 01, 2019.  
<https://www.upwork.com/i/freelancing-in-america/2017/>.

According to the Freelancing in America (FIA) Study, 57 million people freelance in at least some capacity, representing 36% of the total workforce in 2017 (Freelancing in America 2017, 5). In the same study, it is projected that a majority of jobs will be contract based by 2027. There is some dispute over this projection, but it cannot be denied that freelance work is growing rapidly, especially when compared to traditional work situations. Up to half of Millennials work on a freelance basis; a greater portion than any other generation. As this generation ages, they will continue to rapidly grow the freelance sector (Edelman Intelligence, Slide 60).

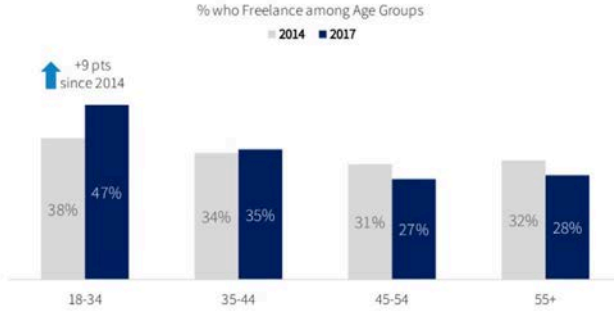
There are a multitude of reasons why freelance work has seen an explosion over the past decade. Much of the shift is linked to rapidly improving technologies that allow for work to be done from almost anywhere. Online applications like Dropbox, TSheets, Skype, and Slack are all products and drivers of this new working culture. Beyond a diversified income, the flexibility of freelancing is a massive draw for people who are searching for work that allows for lifestyles different than the traditional nine to five paradigm (Freelancing in America 2017, 27). In the Edelman study, half of freelancers would not take a traditional position even if it paid much more (Edelman Slide 29). The flexibility and control allowed to freelancers is worth more than an increased income.

The new world of freelancing brings some incredible possible benefits to individuals. For individuals, the economic freedom allowed through freelancing is indispensable. An office is no longer absolutely necessary to garner an income, freeing people to do part-time work as well as maintain other roles such as a stay at home parent. This empowers families and individuals to earn more and have greater financial stability. According to a University of Michigan study "it [freelancing] comes down to flexibility and autonomy without dispensing with meaningful community" (Marx 2). The promise of autonomy and flexibility of both finances and work process is drawing people to the freelance market.

Many of the benefits of being a freelancer are tied to flexibility and self-direction, but this freedom comes at a cost. Contract work typically carries no traditional corporate benefits that many individuals and families rely on. According to the FIA study, 63% of freelancers withdraw from savings at least once per month compared with the only 20% that do in a traditional position (Freelancing in America 2017, 51). Freelancers also need to find their own health insurance, retirement plans, and ways to find work. While these tasks may be easier to handle for some, others will find the stresses that come as a freelancer to be too much for them and their family.

# DATA COLLECTION

## Freelancing in America 2017



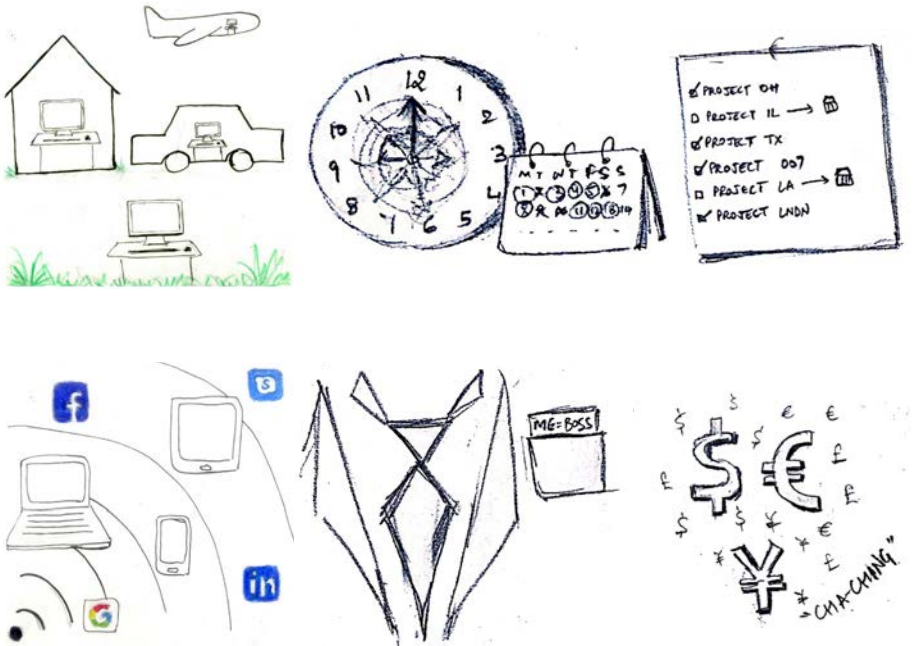
EOELMAN INTELLIGENCE © 2017  
Q2: What is your current age?

31

"Freelancing in America: 2017 Survey." Upwork. Accessed May 01, 2019.  
<https://www.upwork.com/i/freelancing-in-america/2017/>

## REASONS TO FREELANCE

Top 6 reasons why people want to freelance



There are three interrelated scales that must be considered in ensuring the comfort, productivity, and enjoyment of freelance work: personal, building, and urban/political. Much of the work has to do with translating the data and research into actionable design choices in workspaces that equate to more than “making work fun”.

The personal scale is directly related to how workers feel in their immediate area and how to enliven working environments. The technology that keeps freelancers connected to their workplace and clients is also part of the personal sphere. Future office space must also be designed for positive mental health by providing ample natural light, access to others, and comfortable surroundings. Personal environments also need to support learning and fulfilment as people work. In the FIA study, it was found that 55% of freelancers participated in some sort of job training within the previous six months. In order to remain an effective freelancer, people will need to pick up new skills and expertise, so architectural responses to making interiors conducive to learning is essential. Lastly, as work spaces further concentrate people into stratified coworking environments, the definition of amenities will also expand. On site doctors, banks, personal trainers, insurance specialists, and many other services will be incorporated into work spaces as part of a system servicing the individual workers.

On the urban scale, the change in the workforce towards a freelance system will have massive effects on the economy and office buildings’ relationship to their communities and local economies. Coworking spaces that are easily connected to public transit, restaurants, and other city services will have an edge in acquiring new freelancers. Alienating communities and city context is all too common in office construction. Finding ways to integrate workers’ services with public services such as after school programs and community philanthropy will have massive net benefits for the community and the corporate presence.

Architects and designers have a special place in the future of the freelance world. Often freelancers themselves, designers will be essential to increasing the comfort and practicality of contract work for everyone. The most in demand freelance industries expand beyond creative fields, like web development, translation, blog writing, legal advice, finance and accounting, mobile app developments, customer care, social media organization, and marketing. The new work spaces need to cater to these categories of users. While they may have some similar needs, most of them would have needs specific to their profession.



This leads us to the next scale. The building scale comprises both individual freelancers and corporate interests in contract work materialized in a building system that benefits all. One possibility is that certain spaces will be built to suit certain industries and have very specific resources for that group. Architecture freelancers, for example, may want spaces with plotters and large tables for review and modeling that accountant freelancers would have no need for. Similarly a photography freelancer may need a studio to take pictures and/or a black room to develop photos; at the same time a legal advisor would need access to legal books and other resources. On a building scale, this could translate to different floors of an office building not housing one corporate entity, but a conglomerate of workers sharing a profession or interest.

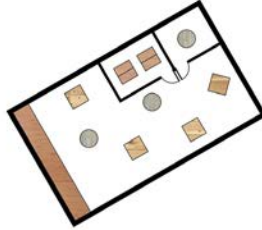
A different possibility is that bigger corporations will either start buying into co-working spaces to create satellite offices or create their own co-working like spaces. These spaces will need to be flexible to accommodate change on a daily basis. Moveable walls and partitions, a variety of working environments, and access to internally housed amenities, such as gyms and coffee shops will be paramount in the success of the office. This flexibility and personalized spaces will allow for greater autonomy of individuals, making them feel more content and productive. Much like the personal scale, businesses and coworking space should have access to learning and development available for their workers. Networking and learning from others is essential to a positive environment, and the architecture and planning of offices should create instances of spontaneity for involvement and learning.

While looking at this scale, parts of the building could also be rented out to other freelancers or small business groups while the rest of the building works like a normal office. This would create a constant flow of new and different individuals who would bring in their own energies. This would also reflect upon the employees, as the ratio of permanent to temporary employees would transform with this changing economy. At a global level, the firms would have the ability to rent out spaces globally for different time periods, therefore creating a satellite office for themselves. This also gives them the ability to hire people from those regions who would have a better sense of the existing conditions. This set up would help both the traditional and freelance ways of working.

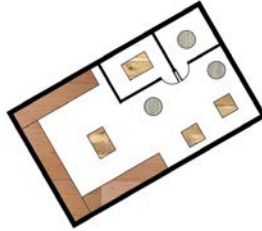
## ARCHITECTURE RESPONSE

Flexible spaces that can be modified to suit the needs of the company

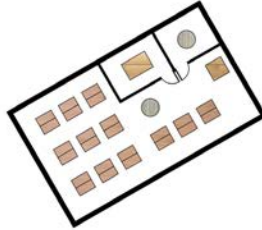
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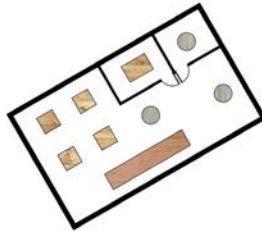
JUL/FEB



AUG-OCT



NOV/JAN



## ARCHITECTURE RESPONSE

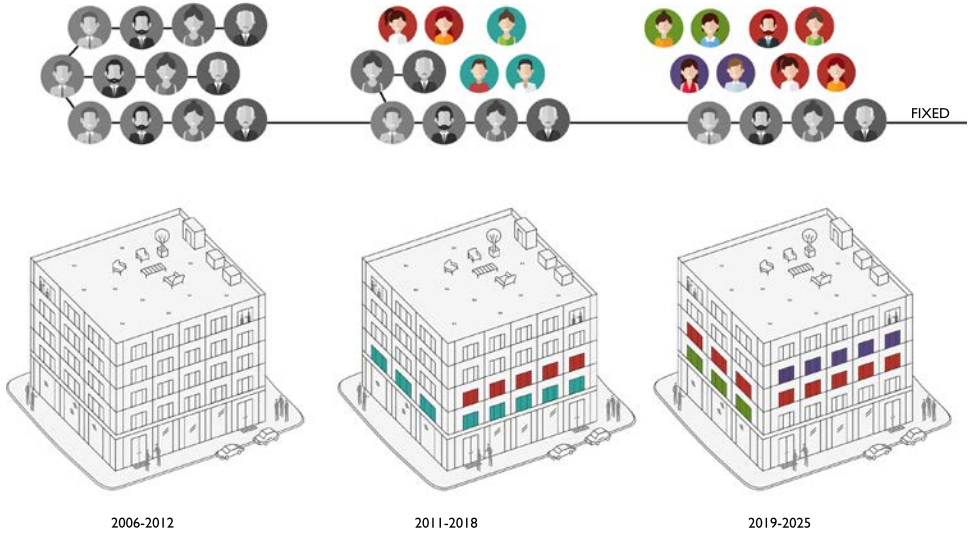
Global flexibility of renting office spaces for short periods of time



The future of work is deeply connected to the debasing the notion of a traditional job. Within the decade, half of the US will work on a freelance basis. Corporations, small businesses, cities, and individuals will all feel the repercussions of this new type of work. Accepting these changes and finding ways to work with this new future is paramount. Future research into this area should attempt to find the future relationship between freelance and contract workers and artificial intelligence. Will management decisions be aided by AI? Will freelancers be competing against AI for work? How can freelancers use AI to find new work or help them complete projects faster? Whatever challenges arise, the most important idea is that people need communities, in and outside of work. Coworking spaces and living accommodations of the future must provide a sense of community with working environments and the communities in the area. Design and architecture need to focus on maintaining the vibrancy and spontaneity of work environments and communities in order to make life better for everyone.

## ARCHITECTURE RESPONSE

Timeline of how building spaces and employees would be more permanent vs. freelance



## SUPERBLOCKS

# FUTURE OF PEDESTRIAN SPACE

NORMAN KERR

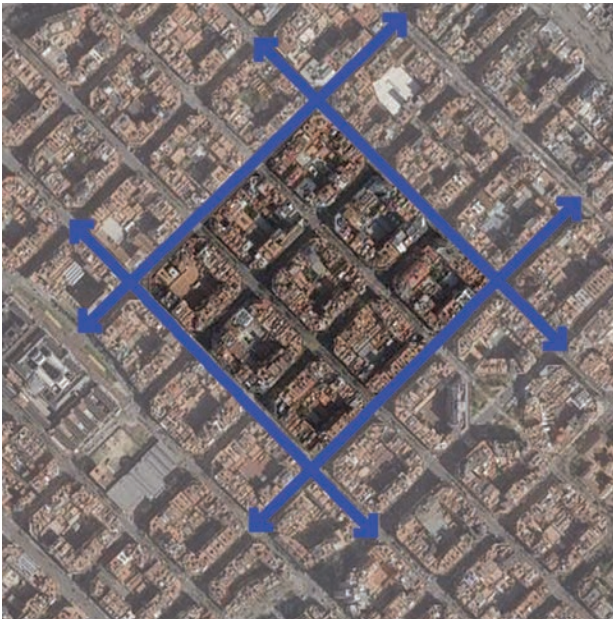
CHRISTOPHER MERCHAK

The future of autonomous transportation will cause drastic changes to typical traffic patterns in large cities. Autonomous cars have the ability to travel along streets and through intersections at speeds far greater than human operated vehicles could do safely. In this scenario, ride sharing and public transportation would become so affordable and efficient that nobody would own or operate cars. The autonomous car will also allow people to make seamless transitions from working in the car to working in the office. As the amount of work we get done in a day increases, our breaks will be spent more around the amenities within walking distance. Superblocks create lively new communities and encourage a more active worklife by suiting city blocks for small businesses that are geared toward pedestrian lifestyles. In the future, new autonomous roadways will be so efficient, that side roads and alleys will no longer be used. These existing roads will be repurposed to create superblocks and create more space for pedestrians.

## BARCELONA SUPERBLOCKS



Each superblock is sized to make every area within easily walkable



All vehicular traffic is diverted around the superblock allowing for more public pedestrian space

## PROGRESSION OF PEDESTRIAN SPACE

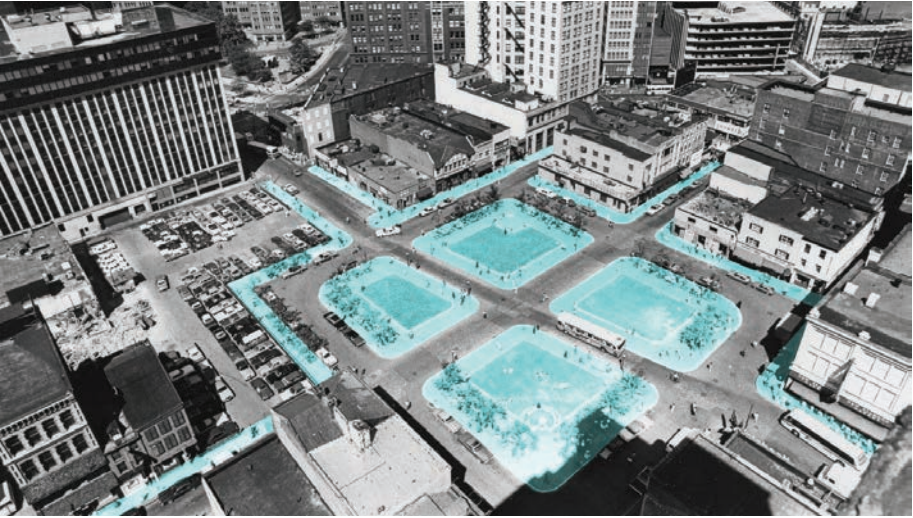
Increase in pedestrian space in large urban areas



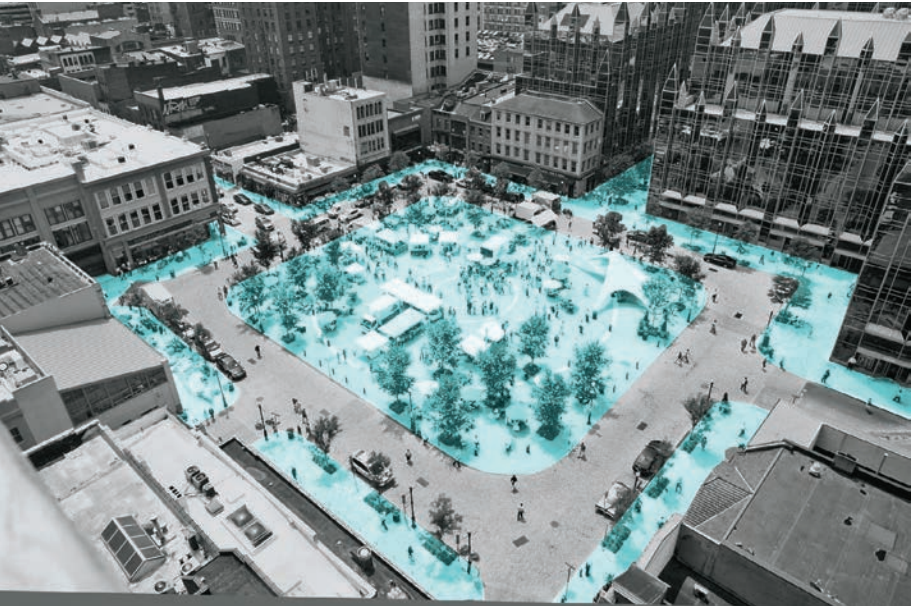
NEW YORK TIMES SQUARE - 2008



NEW YORK TIMES SQUARE - PRESENT DAY



PITTSBURGH MARKET SQUARE - 1980



PITTSBURGH MARKET SQUARE - PRESENT DAY

# ANALYSIS OF SPATIAL AND SOCIAL SYSTEMS

## HIERARCHICAL DESIGN

OLIVER MULLIKIN

SAMUEL WILLIAMSON

Today's workplace is defined by a hierarchical system of management that was first defined in the 1900's. This system establishes a chain of command that does not recognize talents beyond those in the upper ranks, and inhibits communication between all levels of employment. Newer organizational options have been showing up in multiple companies, with much better communication between employees. These newer types of methods have moved towards a "flat" approach, with some even utilizing the extreme holocratic model, where hierarchy is eliminated completely. Our research analyzes whether these newer methods have proven to be successful, and how they can be implemented into a new type of societal work setting.

In the current workplace setting, there seems to be a hierarchal trend that is common to most settings. This consists of three classes, which are workers, leaders, and principals. While this system is easily adopted, it could be argued that there are alternatives to the typical workplace hierarchy. In contrast to spatial hierarchy in which everything has a designated level, it is interesting to investigate how social hierarchies in the workplace can affect productivity. Looking into this idea, there are a few options that stray away from the typical office social structure. But is there a need to stray from the traditional office hierarchy?

### **Traditional**

Normal means of work in which responsibility is stacked to the top level.

### **Flatter**

Levels of leadership are thinned out, and communication is increased between workers.

### **Flat**

No designated leadership or seniority. Workers are responsible for their own work.

### **Flatarchy**

Common in tech. Utilizes internal incubators to form ideas and support top level.

### **Holocracy**

No bosses or leadership. Department or group based. Employees fit their skills.

## HIERARCHICAL DESIGN

How can a business hierarchy determine the programmatic hierarchy?



Through the advancements in the workplace we begin to develop new program spaces that we do not currently have in most workplaces now. These spaces include nap rooms, cafeterias, fitness/wellness centers, and play rooms. As a result these spaces could have a huge impact on a business' work model in a progressive and destructive manner. Therefore, these programmatic spaces need to be organized throughout a building in a strategic manner that allows maximum use without creating too much distraction to the employees throughout the workday. As mentioned before, there are few workplace environments that implement this planning in their buildings, but by researching and analyzing buildings that do, we can begin to understand how program hierarchy impacts the overall business model of the workplace.

## FUTURE OF WORK

# HUB AND BESPOKE

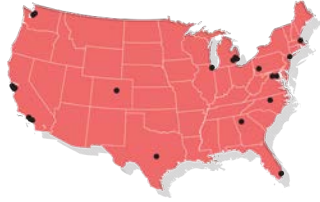
JAY SCHAIRBAUM

EVAN SCHLENK

While companies have varying needs when choosing the location of a new headquarters or spoke office, similar needs arise when designing and constructing these buildings. When a company looks to build a hub office, they frequently build large-scale towers, often occupying the whole building. When establishing a spoke, they're more likely to occupy a small portion of an existing building. Even after spending more on a new building, companies often leave before the building has reached the end of its lifespan, leaving custom buildings vacant and in search of new tenants. Depending on how customized a particular building is, these empty buildings have a negative effect on cities, but an influx of skilled workers and new companies demands creative architectural solutions including adaptive reuse and renovations of these vacant custom buildings.

Urban areas are experiencing changes to their demographic makeup. A gap in skilled and unskilled labor forces is driving factors of age, race, and commerce in urban areas and their surrounding suburbs. This gap is influencing gentrification, housing development, and property values. Over the past several decades, urban areas have become centers of technology; engineering; and science; and executive work; while rural areas have developed skill bases founded mostly in machining and manufacturing. Intermediate skill sets including managers, servers, and assistants bridge the urban-rural division and are equally spread between both areas. According to the National Bureau of Economic Research, this influx of skilled work in urban cores, along with a decreasing acceptability of long commutes, is leading directly to increased property values in cities.

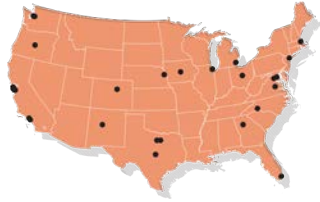
LOCATION OF TECH COMPANIES  
Headquarters and Offices in the United States



Google



amazon



facebook



P&G



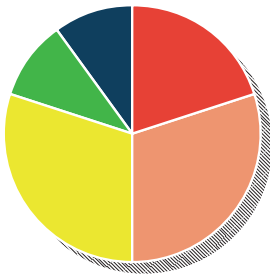
★ macy's

## LONGEVITY OF COMPANIES Fortune 500 in 1956 and 2016

Company	1956	2016	% Change	Company	1956	2016	% Change	Company	1956	2016	% Change
<b>3M</b>	131	94	▲ 7.4%	<b>Coca-Cola</b>	126	64	▲ 12.4%	<b>HERSHEY'S</b>	197	369	▼ 34.4%
<b>Abbott</b>	320	135	▲ 37%	<b>ConocoPhillips</b>	30	115	▼ 17%	<b>Honeywell</b>	51	73	▼ 4.4%
<b>ALCOA</b>	35	300	▼ 53%	<b>CROWN</b>	268	333	▼ 13%	<b>(Home)</b>	92	295	▼ 40.4%
<b>ADM</b>	155	45	▲ 22%	<b>CVS pharmacy</b>	434	159	▲ 55%	<b>IBM</b>	61	32	▲ 5.8%
<b>ASHLAND</b>	134	498	▼ 72.8%	<b>JOHN DEERE</b>	277	7	▲ 5.4%	<b>INTERNATIONAL PAPER</b>	36	133	▼ 9.7%
<b>AT&amp;T</b>	15	9	▲ 1.2%	<b>DOW</b>	104	105	▼ 0.2%	<b>Johnson &amp; Johnson</b>	159	35	▲ 24.8%
<b>AVON</b>	455	444	▲ 2.2%	<b>DUPONT</b>	69	62	▲ 1.4%	<b>Kellogg's</b>	186	216	▼ 6%
<b>BOEING</b>	20	24	▼ 0.8%	<b>ExxonMobil</b>	10	113	▼ 20.6%	<b>Kimberly-Clark</b>	177	155	▲ 4.4%
<b>BorgWarner</b>	81	305	▼ 44.8%	<b>Fuller &amp; McMillan</b>	2	4	▼ 0.4%	<b>KRAFT</b>	17	106	▼ 17.8%
<b>Bristol-Myers Squibb</b>	419	147	▲ 54.4%	<b>GE</b>	443	175	▲ 53.6%	<b>LEAR</b>	462	151	▲ 62.2%
<b>Campbell's</b>	88	339	▼ 50.2%	<b>GENERAL DYNAMICS</b>	4	13	▼ 1.8%	<b>Marathon Oil Corporation</b>	34	56	▼ 4.4%
<b>CATERPILLAR</b>	75	74	▲ 0.2%	<b>GM</b>	41	90	▼ 9.8%	<b>McGraw Hill Financial</b>	260	51	▲ 41.8%
<b>CBS</b>	13	193	▼ 36%	<b>GOODYEAR</b>	56	165	▼ 21.8%	<b>MONSANTO</b>	380	500	▼ 24%
<b>Celanese</b>	210	484	▼ 54.8%		1	8	▼ 1.4%	<b>NAVISTAR</b>	87	204	▼ 23.4%
	18	19	▼ 0.2%		19	184	▼ 33%		22	337	▼ 63%
								<b>NCR</b>	116	409	▼ 58.6%
								<b>NORTHROP GRUMMAN</b>	183	114	▲ 13.8%
								<b>Oracle</b>	227	458	▼ 46.2%
								<b>OI</b>	89	401	▼ 62.4%
								<b>pepsi</b>	364	44	▲ 6.4%
								<b>Pfizer</b>	215	54	▲ 52.2%
								<b>P&amp;G</b>	27	36	▼ 1.8%
								<b>Raytheon</b>	178	116	▲ 12.4%
								<b>Rockwell Automation</b>	42	442	▼ 80%
								<b>Scaled Air</b>	74	397	▼ 64.4%
								<b>TEXTRON</b>	292	200	▲ 18.4%
								<b>United States Steel</b>	3	279	▼ 55.2%
								<b>United Technologies</b>	39	50	▼ 2.2%
								<b>Weyerhaeuser</b>	114	341	▼ 45.4%
								<b>Whirlpool</b>	185	137	▲ 9.6%

The results of the NBER research are based on this assumption of an aversion to commuting by educated, skilled workers based on a decrease in leisure time. Since 1965, leisure time for college-educated individuals decreased, and accordingly proximity, to work has become one of the most sought after amenities in searching for a residential location. Because of a scarcity of land, rents are higher in these urban cores. As the income of the residents increases, so do available amenities, which in turn make the area more lucrative, and by association, more expensive. This increase in rent is directly proportional to the distance a property lies from the central business district of a given city, which has in fact inverted since 1980. In the 20 largest cities in 1980, home prices were 50 percent higher in outlying areas, 10-30 miles from a central business district. By 2010, prices were 40 percent higher in the central business district than the same outlying areas.

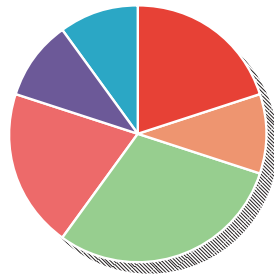
This system requires a supply of skilled work jobs to function. According to the Federal Reserve Bank of New York, productivity benefits from the effects of clustering skilled work, primarily enhanced information exchange and idea generation facilitated by face-to-face contact. Greater Cincinnati, a Metropolitan Statistical Area consisting of Hamilton County and 14 other counties in Ohio, Indiana, and Kentucky, is home to the headquarters of eight Fortune 500 corporations. Of these, seven are located within a mile of Fountain Square at the heart of the city in financial, retail, chemical, and consumer goods sectors. The outlier, AK Steel of West Chester Township in Butler County, is the only corporation with a manufacturing focus.



Automobiles ●  
 Oil ●  
 Manufacturing ●  
 Chemicals ●  
 Food ●

**Fortune 500 in 1955**

- |                      |              |
|----------------------|--------------|
| 1 General Motors ●   | 6 Chrysler ● |
| 2 Exxon ●            | 7 Armour ●   |
| 3 US Steel ●         | 8 Gulf Oil ● |
| 4 General Electric ● | 9 Mobil ●    |
| 5 Esmark ●           | 10 DuPont ●  |



Automobiles ●  
 Oil ●  
 Healthcare ●  
 Technology ●  
 Financial ●  
 Retail ●

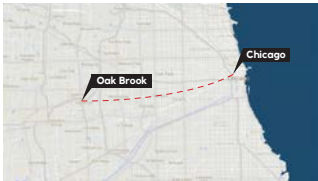
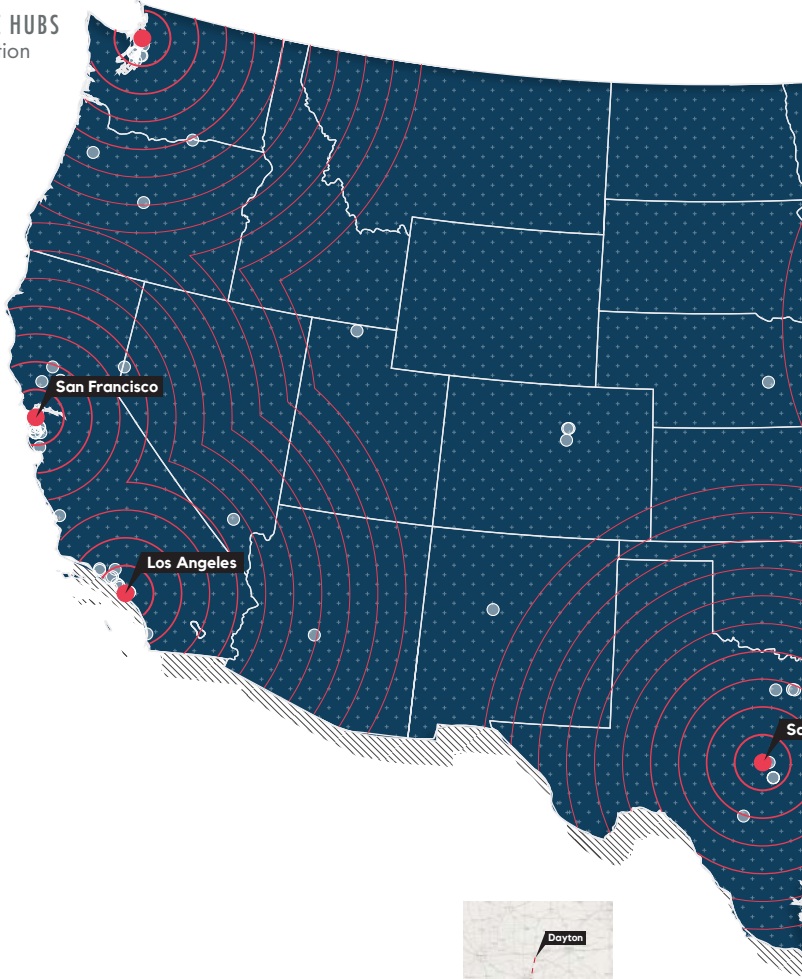
**Fortune 500 in 2016**

- |                        |                         |
|------------------------|-------------------------|
| 1 Walmart ●            | 6 United Health Group ● |
| 2 Berkshire Hathaway ● | 7 CVS Health ●          |
| 3 Apple ●              | 8 General Motors ●      |
| 4 Exxon Mobil ●        | 9 AT&T ●                |
| 5 McKesson ●           | 10 Ford ●               |

The draw of educated and skilled workers to urban areas is also affecting the demographic make up of these urban cores, along with their associated suburban and rural areas. In the top 20 urban areas nationally, for example, the white population is growing in core cities and decreasing in the suburbs. Additionally, the urban core is no longer the top landing spot for recent immigrants. Since the start of the new millennium, more immigrants have been settling in suburban areas than center cities. Skilled work concentration in urban areas is also causing unconventional changes to the age makeup of center cities and their suburbs. The youngest adult demographic, ages 18-24, and traditionally associated with living in urban areas, have actually stagnated in population percentage in the period from 1980 to 2010. The prime working age population of 25-55 has shown the greatest increase in urban areas, and ages 55 and above has decreased in center cities and has increased 10+ miles from the central business district. This increase in working-age residents, while partially explained by the large range in age, supports the assertion that urban populations are growing due to a demand for educated, skilled workers.

Large companies are especially active in the growth of the skilled labor market in American cities. Technology companies such as Apple and Google tend to develop offices near high concentrations of skilled labor. In many cases, these are among the 20 largest cities discussed above, but they also dip into talent pools near large research universities in order to leverage both educated workforces and technological research initiatives. Amazon, while still very much a technology focused company, relies both on a skilled labor force for engineering, logistics, and management and an unskilled force for shipping and distribution. Their facilities include major headquarters in Seattle, with warehouses and multi-modal distribution centers near airports in major cities. A second headquarters is planned, with requirements including a metropolitan area with a population of over 1 million, a site within 45 minutes of an international airport, access to mass transit routes, and Up to 8 million square feet of office space for future expansion.

# NATIONAL COMMERCE HUBS and Corporate Migration



1



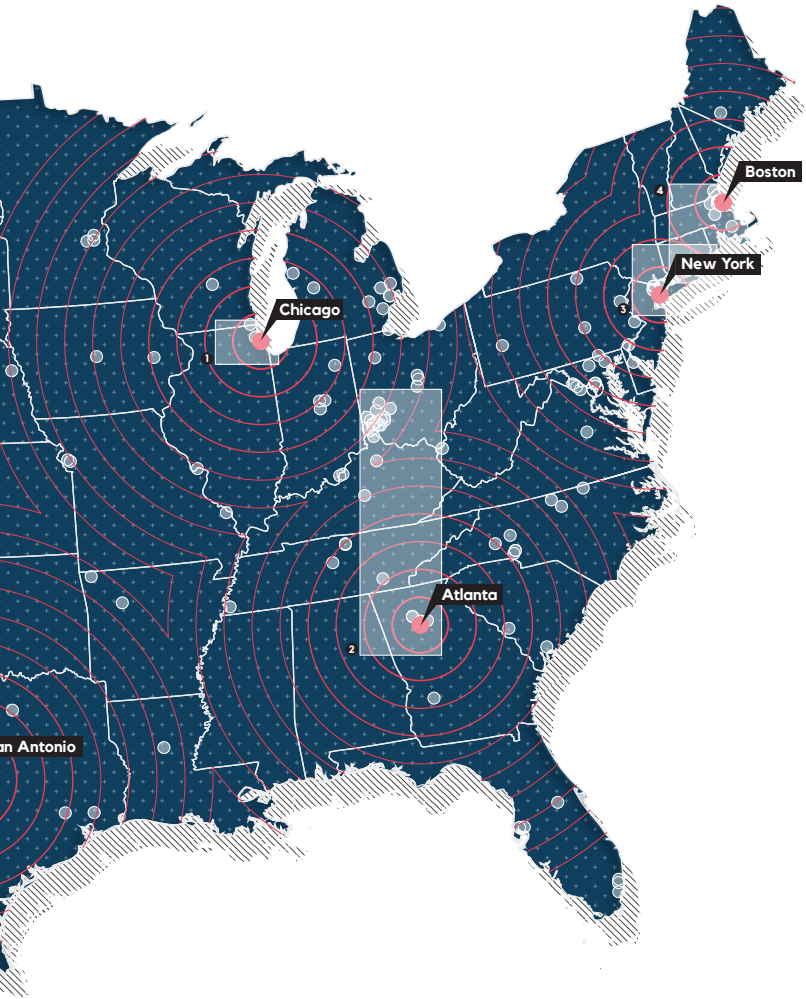
McDonald's relocation of Headquarters from Oak Brook, IL to downtown Chicago.



2



National Cash Register relocation of Headquarters from Dayton, OH to downtown Atlanta.




3

**aetna** Aetna relocation of offices from Hartford, CT to downtown Manhattan.

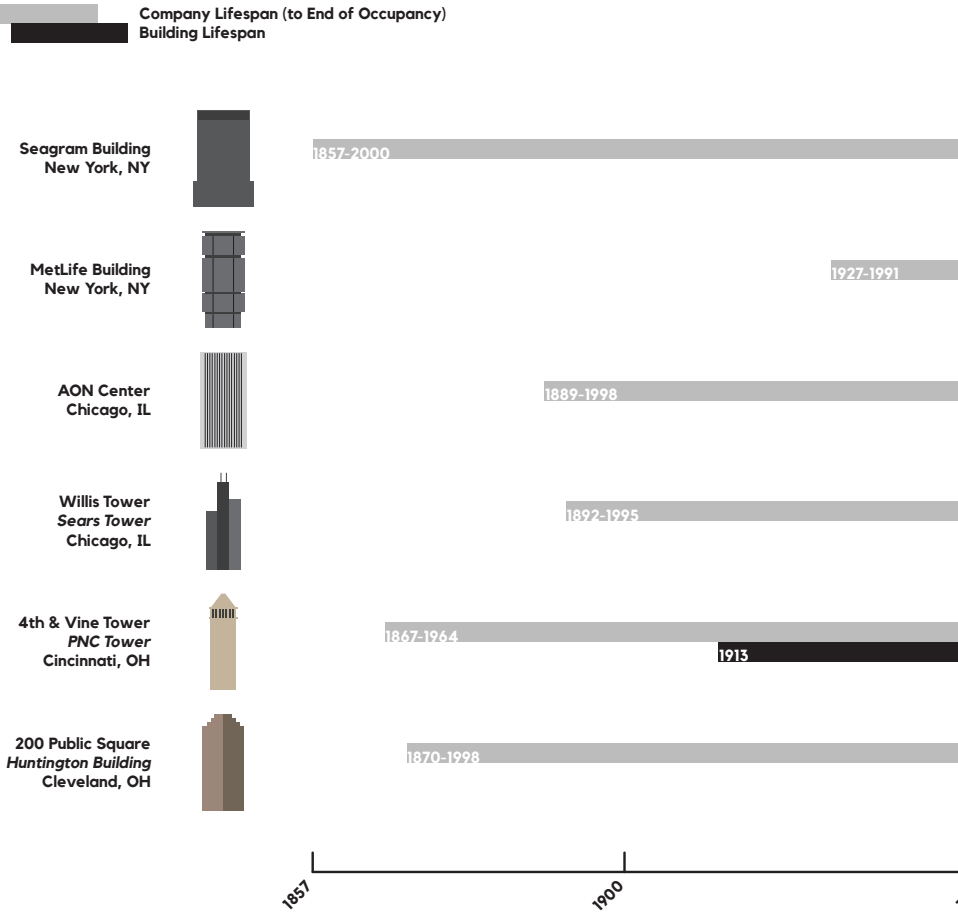


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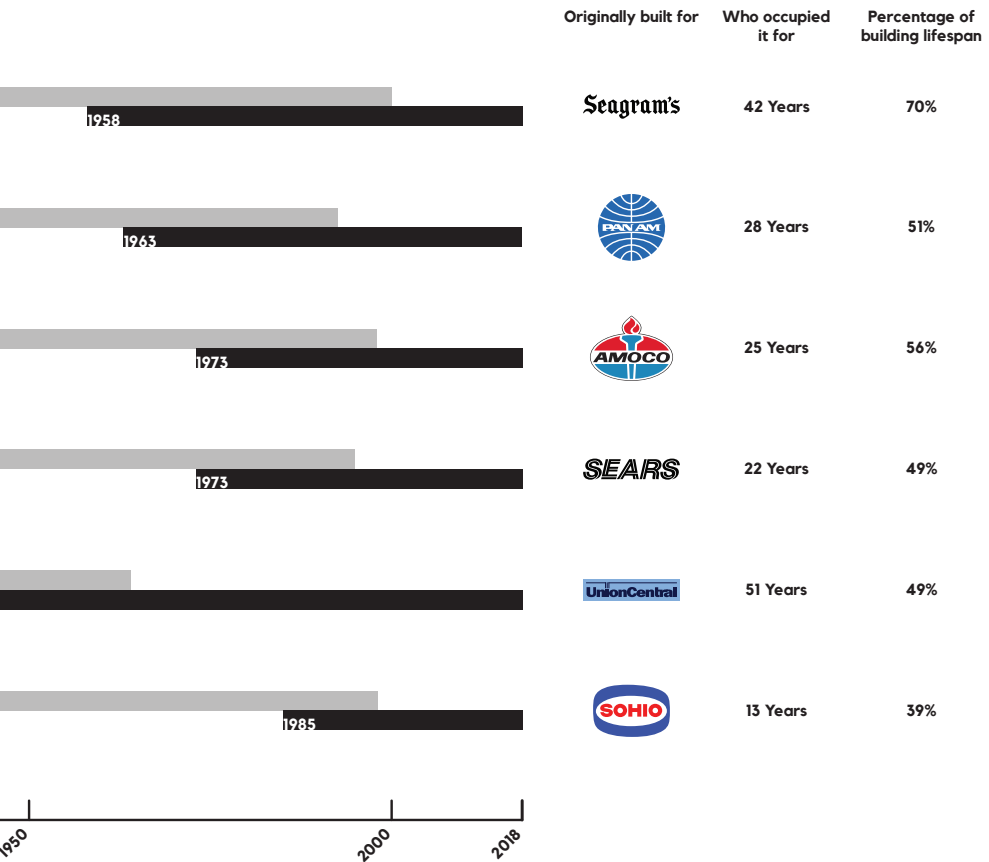
 Relocation of General Electric offices from New Haven, CT to Boston.

## BUILDING LIFESPAN

and the lifespan of companies who build them



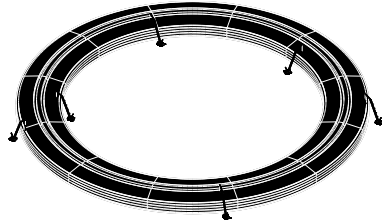
Hub offices and their associated spokes differ greatly in their intended lifespans. Companies build hub offices with intention that it will be their home for decades. This is evident in six major buildings that were originally constructed and occupied by a single large company that has since moved out: the Seagram Building in New York, NY; Willis Tower in Chicago, IL; AON Center in Chicago, IL; the Huntington Building in Cleveland, OH; PNC Tower in Cincinnati, OH; and the MetLife Building in New York, NY. Each of these buildings has far outlasted the original occupant. Four out of the six original companies occupied their building for around



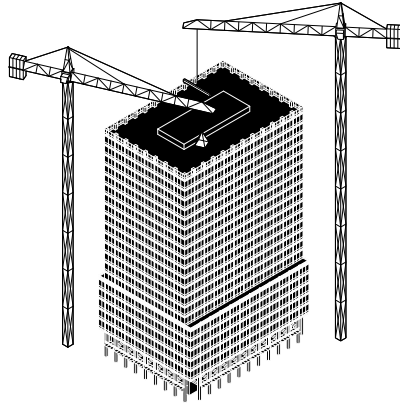
half of its lifespan (to date), with the outliers, Seagram's and Sohio, occupying for 70% and 39% respectively. In all cases, the building was not reoccupied by a single tenant, but rather by multiple tenants dividing the building into individual parcels. This speaks to the flexibility of the urban tower typology of hub building construction. Each individual parcel, the subdivision of the larger building, can serve as a spoke for a large company, or the main hub or sole office of a smaller company.

# REUSE OF HEADQUARTERS

Custom-built Buildings vs. Typical High-Rise

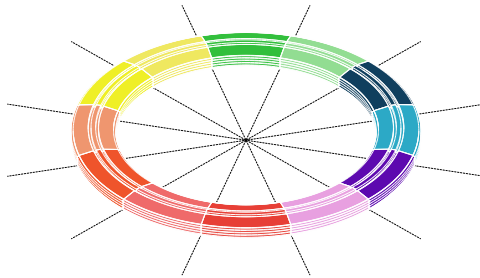


Campus style hub occupied by single company



Tower style hub occupied by single company





Re-purposed campus for multiple spoke occupants



Re-purposed tower for multiple spoke occupants

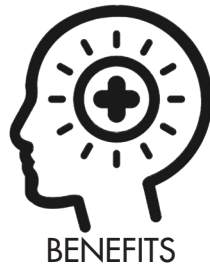


# DISCONNECTING INTEGRATED ENVIRONMENT

JOHN GARRISON

KATLYN MABRY

Technology is advancing at a rapid pace resulting in significant growth in the telecommuting world. As such, work is becoming more digital and accessible in almost any location, including the home. Thus, the boundaries between work and personal life have become blurred. Positive effects of this integration are less physical commuting, increased time with family, and lower financial costs. However, some studies suggest that there may also be adverse consequences on our brains as well as a difficulty “turning off” from work. We must then consider these side effects and find ways to assist our brain in dissociating an integrated environment. In doing so, we can create environments that drive productivity and help us perform work more efficiently both at home and the office. We propose a set of individual spaces that create miniature environments and promote productivity within our brain through the use of mental cues and associations. These spaces serve as additions to a typical office and give variation from a static and mundane environment, lacking in productivity.



- **Work anywhere and have a more flexible schedule.**

The ability to work from anywhere has been seen as beneficial because it provides flexibility and no longer having to depend on a physical location to accomplish tasks. In an article by Forbes, they talk about how work life integration is becoming more favored over finding work life balance because one is now able to perform work tasks, such as checking emails, while participating in family activities. Thus, you are able to have a more life oriented schedule while also accomplishing work tasks.

- **Telework provides financial benefits for both employees and employers.**

In an article by Techsoup they studied a company that had 2,000 employees telecommuting at least 2 times a week. The company saved \$277 million in the first year, and employees saved \$10 million in fuel costs. Another article says that telecommuting full time brings in more than \$4,000 in savings each year thanks to reduced expenses on things like gas, parking and public transit costs and dry cleaning. It also states that by not having to go into the office every day, workers gain back the equivalent of 11 days per year.

- **Telecommuting has environmental benefits.**

As employees are saving money on gas, they are also helping to save the environment. Techsoup says 47,000 tons of carbon are saved annually through teleworking. Office buildings are also able to help the environment. In an article by Better World Telecom they say the average employee office space uses 239 usable square feet per person. For a medium sized enterprise (500 employees), this would require nearly 120,000 usable square feet of office space, resulting in nearly \$200,000 for energy costs. Taking employees out of the office and allowing them to work elsewhere can significantly reduce these costs.



## DETRIMENTS

- **Inability to disconnect from work.**

Since we are always connected to work through technology, there is a growing trend of overworking becoming prevalent. The ease of access of being able to work from anywhere is leaving us working longer hours than we were before. Which instead of enabling work life integration, we are finding work eating up more personal time; which some studies are noting as unhealthy.

- **Inability for our brain to disassociate between work and leisure.**

With telecommuting and being able to work from anywhere, including home, studies suggest that this is causing our brain to be confused in certain environments and unable to differentiate. For example, if a home (leisure) area is also one in that work is performed in, our brain will tend to see this area as just a work area and unable to relax.

- **Mental association with electronics inhibits the brain from resting.**

Similarly, this inability for our brains to disassociate certain areas with work is leading to poor sleep qualities. In one study, if there were electronics or screens in the bedroom, the brain sees these as indicators of work and will be unable to unwind and prepare for rest.

- **Poor sleep quality from over exposure to blue light.**

Another factor in poor sleep qualities is the abundance of blue light from technology and our exposure to it from working at odd hours given our flexible schedule. It is noted that our brain registers bright, sterile, or blueish light, as work setting whereas warmer light is associated with the end of day and preparations for sleep.



## DETRIMENTS CONT.

- **Poor sleep quality and concentration from exposure to wifi radiation.**

If you sleep with your phone or your computer in the bedroom you are exposing yourself to harmful radiation. In a study done by 9th grade girls, they researched the effects sleeping next to your phone had on your brain. They used cress seeds as the test subject and had all the same conditions for the seeds except one batch was in a room with 2 wifi routers. (wifi routers produce the same radiation that our phones and computers do) after 12 days they found that the cress seeds that were exposed to radiation did not grow at all and some were dead or mutated.

- **Lack of social contact. Negative effect on collaboration and innovation.**

Some articles mention that with telecommuting, we lose a level of physical contact and social aspect. In the design and business industry, this can create a negative effect on collaboration that has been an essential feature to the creation of many inventions and ideas. If a person no longer works while surrounded by like minded individuals, they lose a social benefit that can help propel and shape their ideas. Another article suggests prolonged isolation can lead to weakened productivity and motivation.

## DISASSOCIATING IN A SHARED SPACE

In order to reduce the negative effects of telecommuting, we can apply physical and mental “cues” that will help our brain disassociate in a shared environment. This enables it to switch gears and focus on specific tasks. For example, in a recent study, researchers found that our brain associates electronics and screens as being work related and that it must be alert to perform tasks. By taking these things out of the bedroom, it will be able to unwind at the end of the day in preparation for sleep.



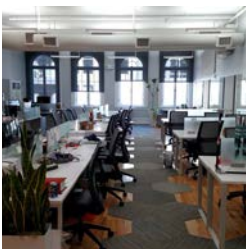
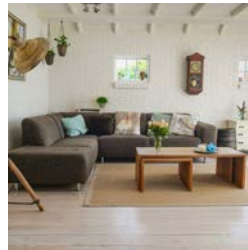
OFFICE



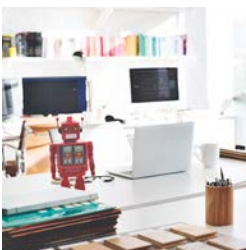
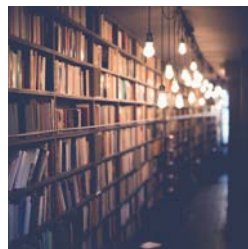
HOME



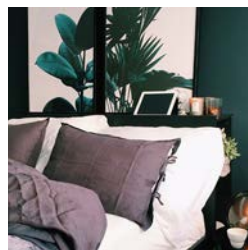
COMFORT



LIGHTING

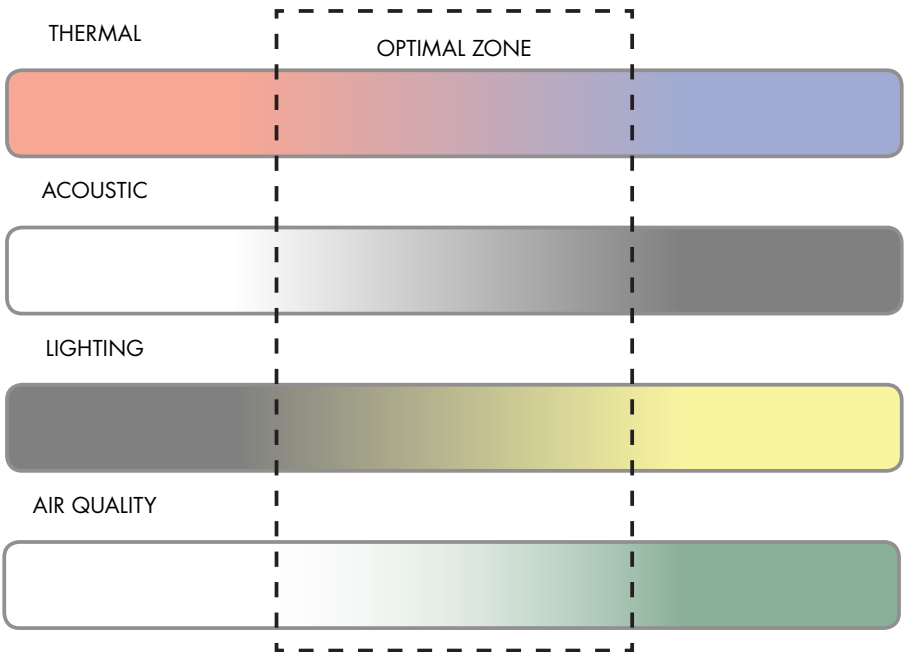


TECHNOLOGY  
VISIBILITY



## CONDITIONS FOR PRODUCTIVITY

A study conducted by Cornell University found a link between environmental conditions and productivity. They argued that there is an optimum setting in which people perform at their best level of productivity. Although there can be some variation depending on people's interests, they generally fall within the same area on the scale. By designing to have an environment that lies within this optimal zone, it can be suggested that an inhabitants can reach these levels most efficiently.



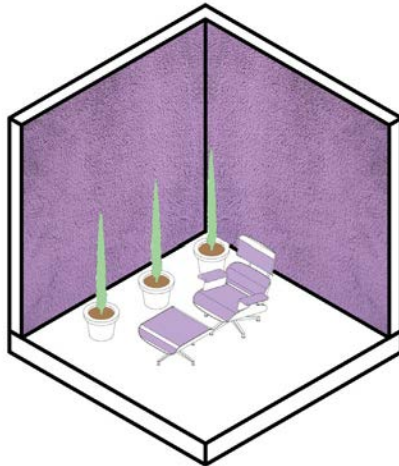
## FUTURE STRATEGIES

After conducting research on integrated environments, moving forward we see to utilize it in a way to create environments that optimize productivity. Theoretically, we propose the future of designing an office is to create individual spaces as additions to the office environment. These spaces will act as centralized zones for a person to focus and elevate their productivity. The core belief is that these spaces will invoke physical and mental cues in a person to allow them to detach from what ever work/live environment they inhabit, and be able to focus on just one thing.

Consider for a moment that these spaces are able to analyze a person's likes and dislikes. As the system and space strive to create the perfect environment for productivity, they are able to customize it by the user's individual characteristics and further create a unique zone for which they can perform at their best. Conversely, there also is the possibility to create an optimal space for a person to disconnect from work and be able to switch their brain to a more livable situation using the same physical and mental cues.

### DISCONNECTING SPACE

Thermal: warm  
Acoustic: quiet  
Lighting: dim

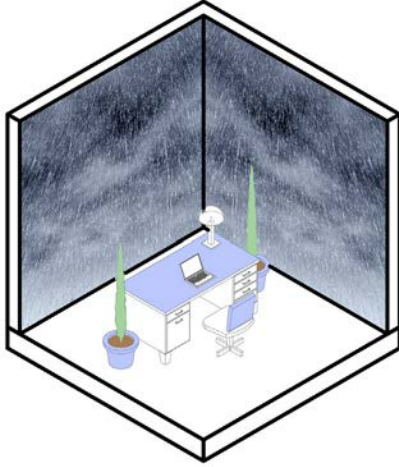


### IDEAL SPACE 1

Thermal: cool

Acoustic: white noise

Lighting: dim

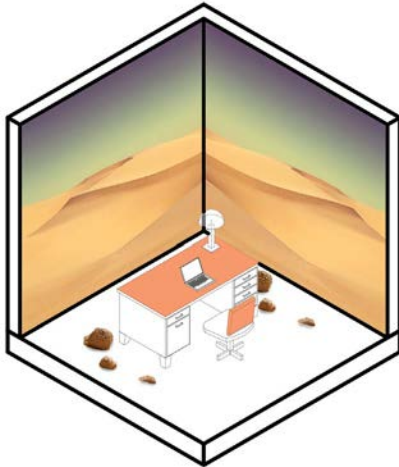


### IDEAL SPACE 2

Thermal: warm

Acoustic: loud

Lighting: bright



# THE IMPACT OF NATURE ON THE WORKPLACE

## NATURE

NORMAN KERR

CHRISTOPHER MERCHAK

Many workers may go their entire day without exposure to the outdoors. Modern office spaces have lost opportunities for increased productivity and wellbeing by depriving their employees of access to nature. Nature can be accessed within the workplace through its physical presence, views to the outdoors, and even pictures on walls or on your computer. The benefits that workers receive from nature are both physical and psychological. Businesses also gain direct boosts to productivity and revenue from investing in natural features. Many 21st century companies are taking steps to bring their employees closer to the natural environment. To that end, employee experiences around greenery are added in order to improve their moral and wellbeing. Some are using nature as a showpiece to push the makeup of our cities' built environments towards greener technology. Natural additions to an office space can be expensive amenities, but the benefits may be essential to improve quality of life for everyone in the building.

# FUTURE OFFICE

Seamless integration of architecture and nature



## HISTORY OF NATURE IN THE WORKPLACE

Limited access to nature in the workplace until recently



Early 1900's



1939



Early 1960's

## BENEFITS OF NATURE IN THE WORKPLACE

**12%** Increase in productivity when employees are in the presence of plants



**30%** Of sick days are caused by respiratory illness. Access to plants significantly reduces this number





Late 1960's



1970-1990



PRESENT

88% People reported an increase in their wellbeing in the workplace



FUTURE?

Time line image - "History of Office Design | From the 1700's to Today | K2 Space." K2space. August 01, 2017. Accessed May 01, 2019. <https://k2space.co.uk/knowledge/history-of-office-design/>.

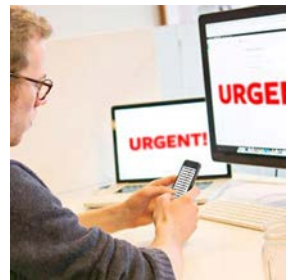
# WORK SHIFTS AND AMENITIES THROUGHOUT THE WORKPLACE

## SCHEDULED AMENITIES

OLIVER MULLIKIN

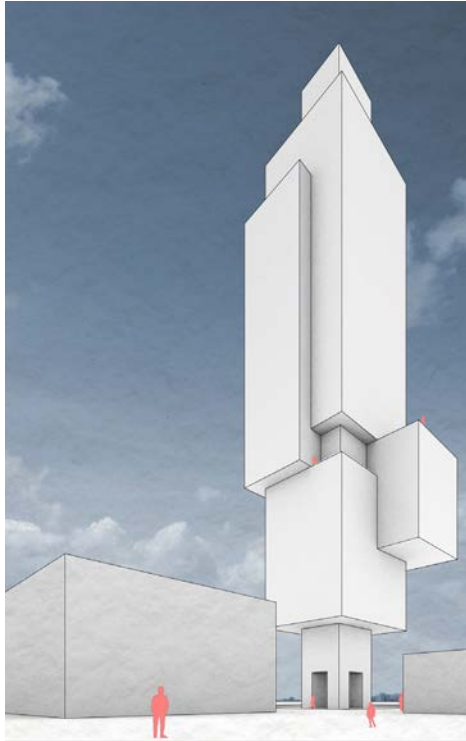
SAMUEL WILLIAMSON

Since the industrial revolution, the standard workweek has entailed an eight-hour workday, five days a week, resulting in an even 40-hour workweek. In return, we as a society have lived a life of “Live to Work”. Until recently, companies all over the world have branded their workweek schedules to escape the mundane nine to five. Examples of this are divided work hours, or a lower amount of time spent in the office every work day. As a result, there is a great responsibility on employers’ shoulders to facilitate their employees diverse work styles. Therefore, the emphasis on amenities throughout the workplace increases, since they play a critical role in establishing a well-rounded workforce. These may include additions such as athletic facilities, green spaces, cafeterias, and game rooms. In addition to making a company more diverse, amenities also provide improvements in office moral, productivity, and longevity. As companies implement these changes we as a society can revolutionize the workplace from a life of “Live to Work” to one where we all can prosper of “Work to Live”.



## SCHEDULED AMENITIES

Aggregated within the workplace



Through our research we determined that a mixture of all three work styles provide their own benefits and restrictions. Therefore, we established an ideal model that incorporates each of the three best qualities. We used the multiple entry approach from the 3 shift workday to allow employees to enter from any direction. This also eliminates the funneling affect that occurs when only having one primary entrance into the building. Similar to the 1 shift workday we pulled the idea of having interior amenities within the workplace. However, instead of having all amenities located in the interior we only put those that create the least amount of distraction to employees inside. These may include green spaces and multi-purpose rooms. The other amenities, such as, athletic facilities and cafeterias would be around the workplace. This concept comes from the 12 hour work shift model that nurses utilize. The advantage to this idea is that you receive maximum space for athletic facilities and allow employees to get up and out of the office during their lunch break as the go to the cafeteria. These implementations to the workplace can boost moral, improve productivity, and increase longevity of the average employee, and as a result the workforce strays away from the “Live to Work” mentality into the “Work to Live” philosophy.

FUTURE OF WORK

# SOCIOECONOMIC CLIMATE OF MEGACITIES

SHOSHANNA SIDELL

SRIMOYEE SINHA

An exponential increase in population and the development of megacities will have a direct effect on every aspect of people's lives and employment. Previously, the shared economy that existed in villages fostered a codependency between individuals. People had direct contact with the goods and services they were providing and receiving. A revival of this system is occurring with separate communities beginning to cohabitate within dense urban environments, creating more opportunities for social and professional interaction between individuals. Collaborative spaces, reminiscent of an agglomeration economy, are playing an increasingly important role in growing urban communities. Within these evolving metropolises, there could be a cross pollination of types of work, dwellings, and community centered spaces, all of which creates a symbiotic environment that is more productive and coexists on a local, city, and global scale. The future of work will ultimately depend upon how well the collaboration between members of the community and supporting sustainable urban planning practices exist, and how mankind can keep up with the increasing pace of the changing world.

1970



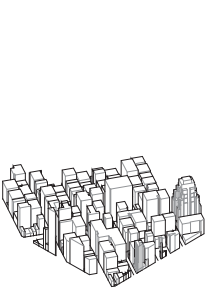
1990



## GROWTH OF MEGACITIES

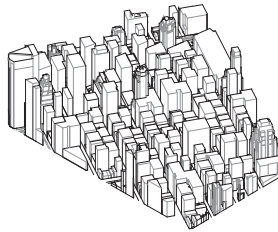
Top Right: Urban population percentage 2010-2050

Bottom: Global urban population from 1970-2030



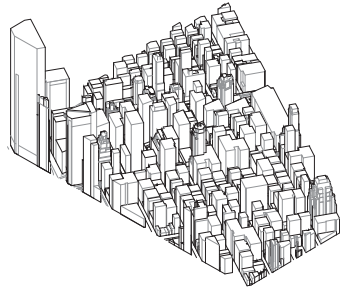
2010

50% of the population was urban



2030

60% of the population will be urban



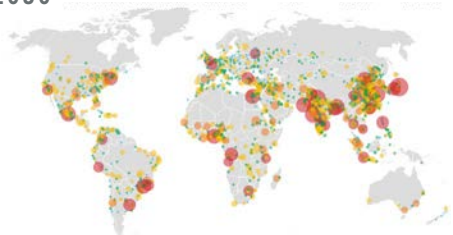
2050

70% of the population will be urban

2010



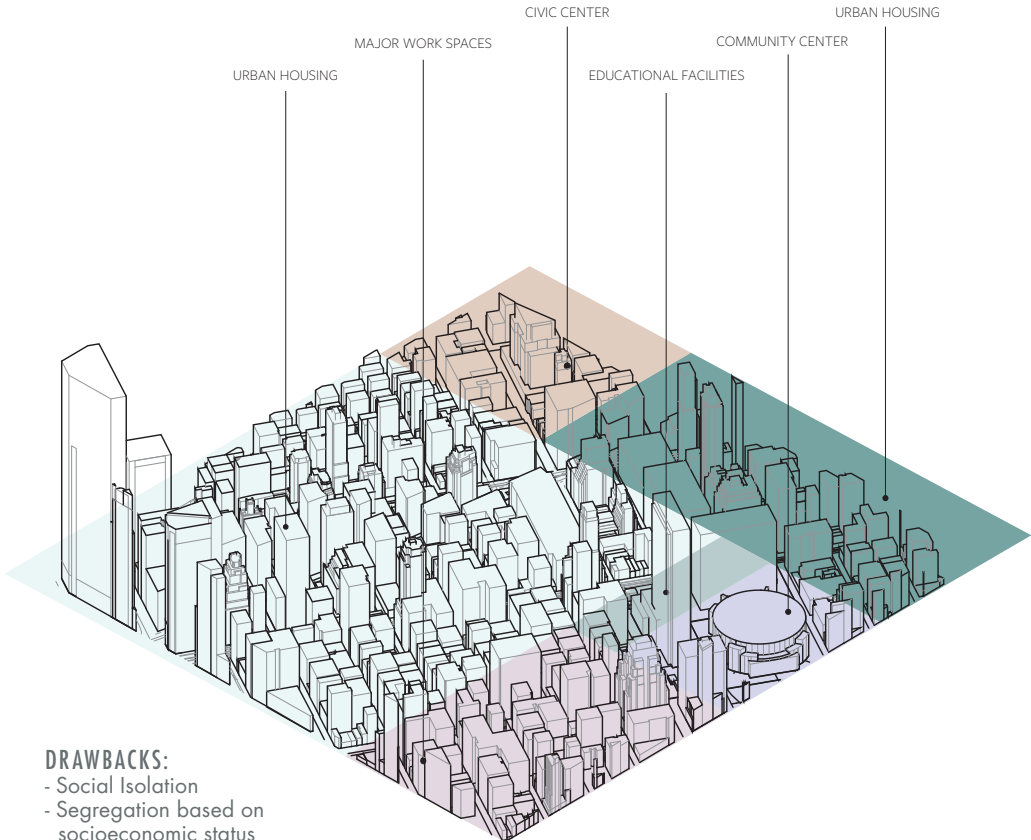
2030



"Bright Lights, Big Cities." The Economist. February 04, 2015. Accessed May 02, 2019.  
[https://www.economist.com/node/21642053?fsrc=scn/tw\\_ec/bright\\_lights\\_big\\_cities](https://www.economist.com/node/21642053?fsrc=scn/tw_ec/bright_lights_big_cities).

## POSSIBLE DIRECTION OF URBANIZATION

Urban Sprawl

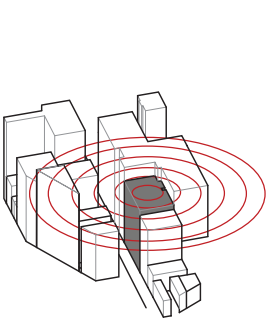


### DRAWBACKS:

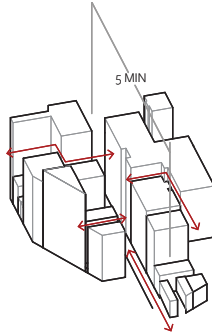
- Social Isolation
- Segregation based on socioeconomic status
- Prevents collaboration and innovation
- Increases emissions from more cars and increased area

## NECESSARY ELEMENTS OF A CITY

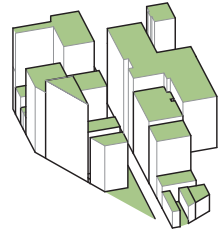
Based on urban design research these are necessary aspects of a productive city



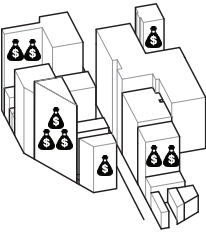
TRANSIT HUBS



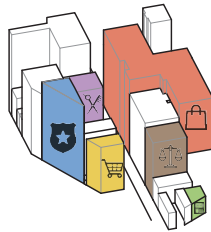
WALKABILITY



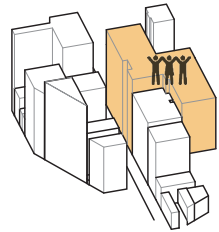
GREEN SPACES



MIXED INCOME  
NEIGHBORHOODS



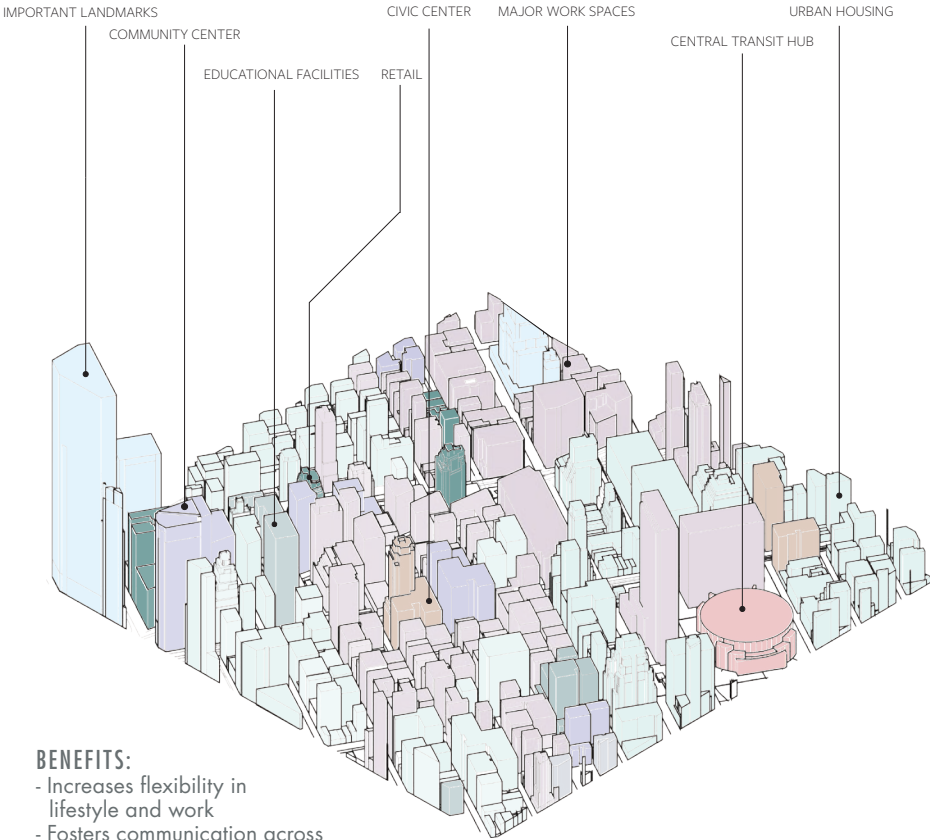
INTEGRATED  
PROGRAMS



COMMUNITY  
CENTERS

# IDEAL DIRECTION OF URBANIZATION

## Urban Densification

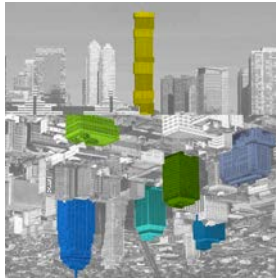


### BENEFITS:

- Increases flexibility in lifestyle and work
- Fosters communication across socio-economic groups
- Efficient use of resources
- More variance in building program and spaces for innovation

## FUTURE URBANISM

As megacities and their buildings evolve, a more diverse combination of programs and proximities will arise

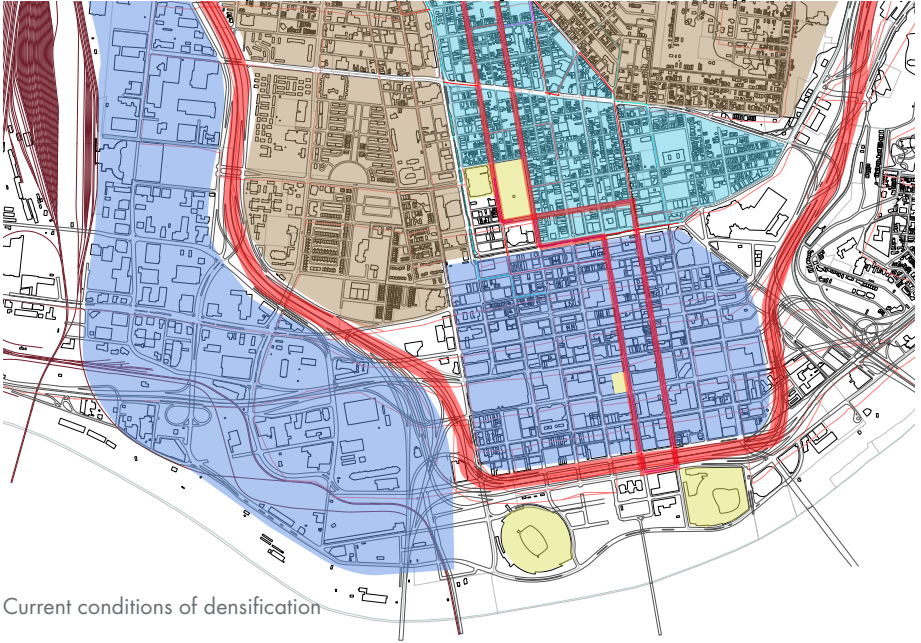


## URBAN COMMUNITIES

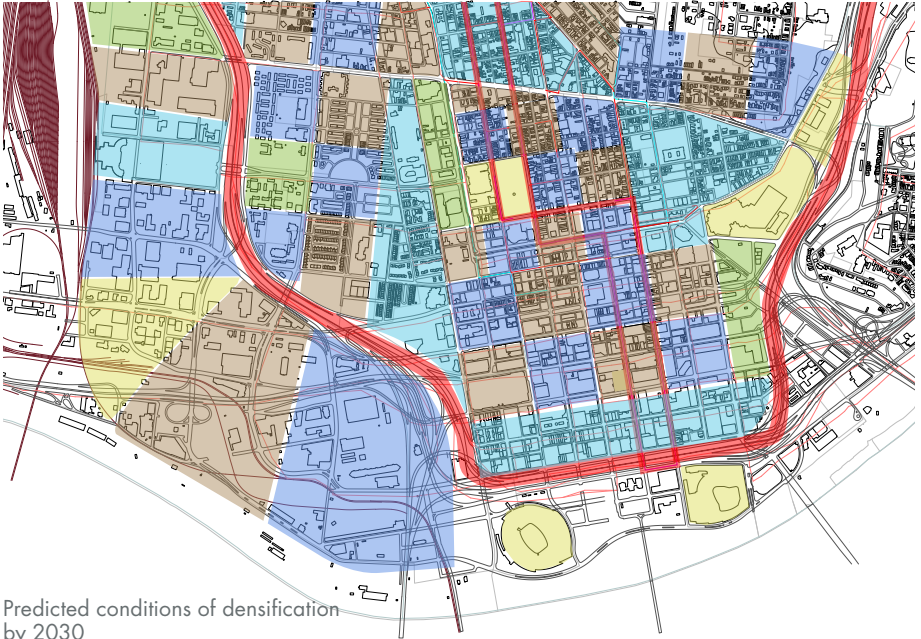
- A shared economy will create closer knit communities
- The settings where work happens will vary and be possible in many places throughout a city
- An ecosystem of collaboration and talent will grow
- Cities and the neighborhoods within will be tightly networked spaces for working and living
- New types of employment needs will arise from how existing job sectors overlap
- Shared workspaces will increase communication and innovation

# IDEAL DIRECTION OF URBANIZATION | CINCINNATI

## Urban Densification



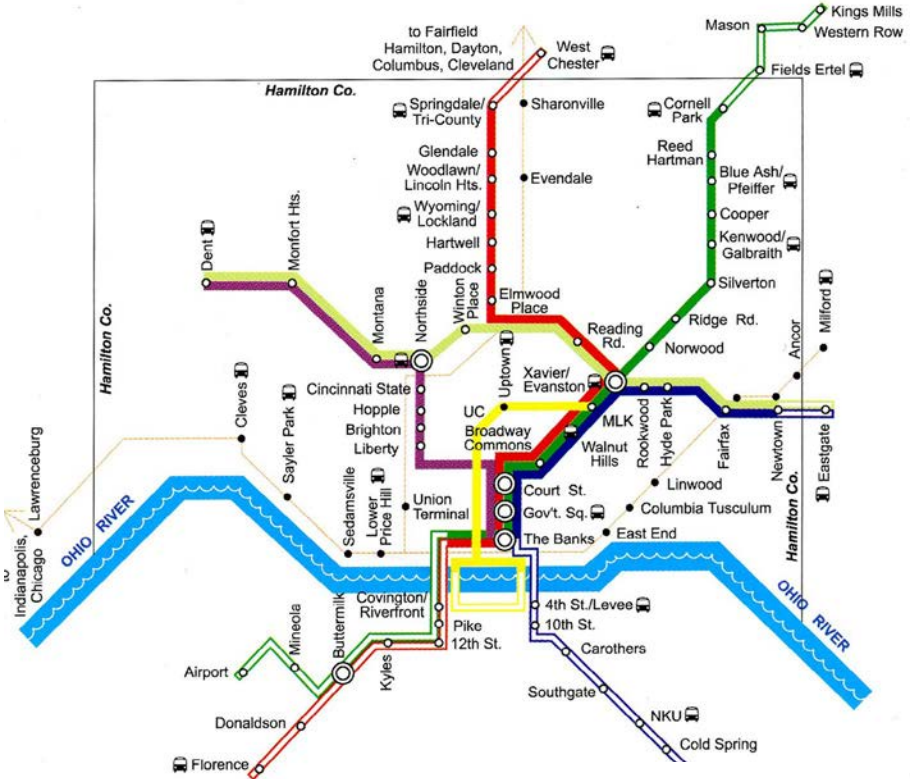
Current conditions of densification



Predicted conditions of densification by 2030

# CINCINNATI RAIL TRANSIT MAP FOR 2030

## Urban Densification

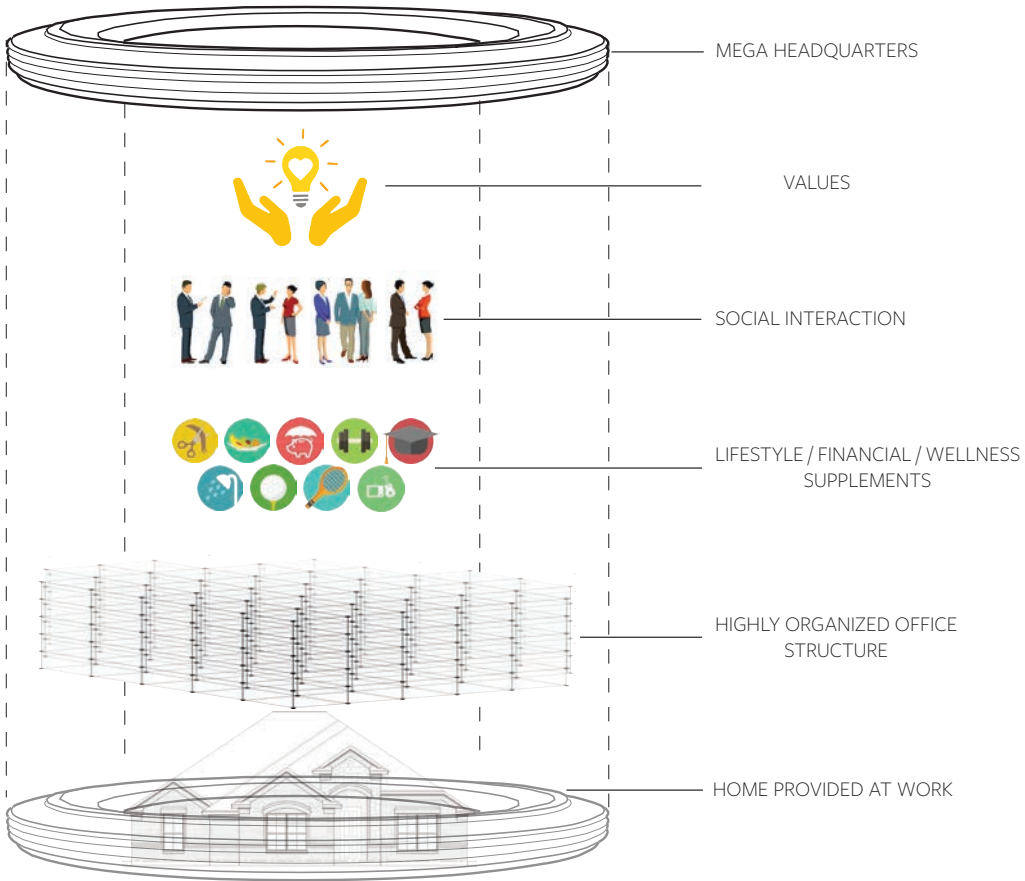


- LIGHT RAIL: RED LINE
- LIGHT RAIL: GREEN LINE
- LIGHT RAIL: BLUE LINE
- LIGHT RAIL: YELLOW LINE
- LIGHT RAIL: PURPLE LINE
- COMMUTER RAIL: RIVER LINE
- COMMUTER RAIL: NORTH LINE

Mecklenborg, Jake. "MetroMoves: A Decade Later." UrbanCincy. November 29, 2012. Accessed May 02, 2019. <https://www.urbancincy.com/2012/11/metromoves-a-decade-later/>.

# FACTORS LEADING TO EFFECTIVE WORKPLACE DESIGN

Precedents and Statistics taken from surveys conducted by the Harvard Business Review shows relevant aspects of effective design of a work environment



## SO, WHAT WILL THE FUTURE LOOK LIKE ?

- With automation at the verge of a great breakthrough, employees will prepare themselves to be able to retrain and develop advanced skills.
- Employers will provide employees more freedom of choice regarding the benefits they receive based on their social and philosophical needs. They will also have freedom to change these choices based on changing life events.
- Collaborative spaces, private areas, and multipurpose rooms will coexist under one roof to integrate professional and personal needs of employees and employers.
- The global workforce will be eager to adapt and respond to technological advances and evolving human needs.





FUTURE OF WORK  
**SYNTHESIS**

JOSHUA ANDERSON - 106  
MICHAEL ROGOVIN

KRITI CHAUDHRY - 108  
SCHOOL OF ARCHITECTURE

MATTHEW DAVIS - 110  
SAID 4002

JOHN GARRISON - 112  
SPRING 2018

HANNAH JOHNSON - 114

NORMAN KERR - 116

KATLYN MABRY - 118

CHRISTOPHER MERCHAK - 120

OLIVER MULLIKIN - 122

JONAH PRUITT - 124

JAY SCHAIRBAUM - 126

EVAN SCHLENK - 128

JARED SCHROEDER - 130

SHOSHANNA SIDELL - 132

SRIMOYEE SINHA - 134

SAMUEL WILLIAMSON - 136

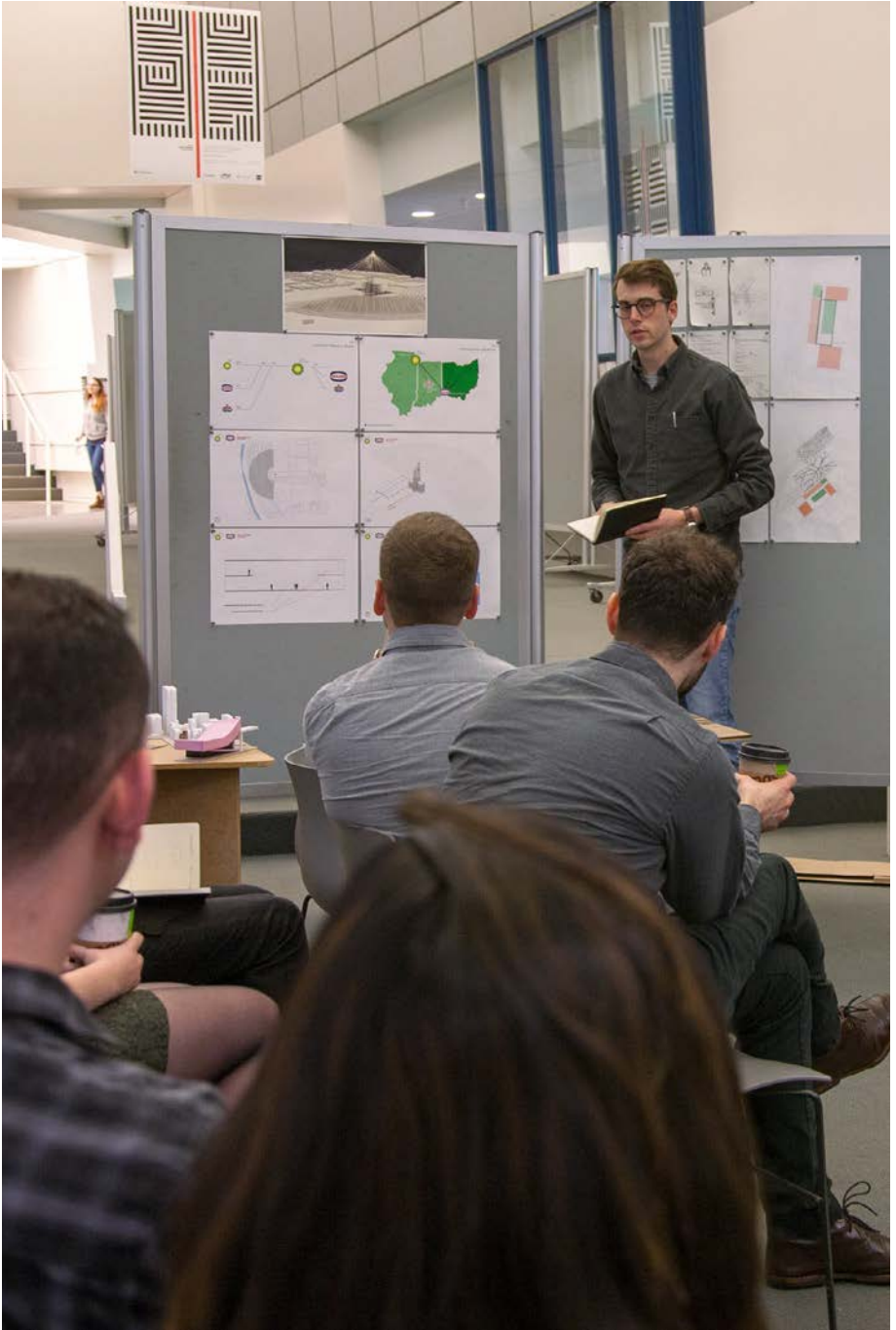
## FUTURE OF WORK SYNTHESIS

Once the research phase had produced a wide breadth of knowledge on the future of work, the next step was to process/filter this information in order to synthesize a response. Our goal was to scavenge the research for an actionable driver that could influence the formation of space or act as a catalyst for design. Ideas were tested in rapid succession, and those whose implications were too nebulous to elicit an architectural response were culled from the list.

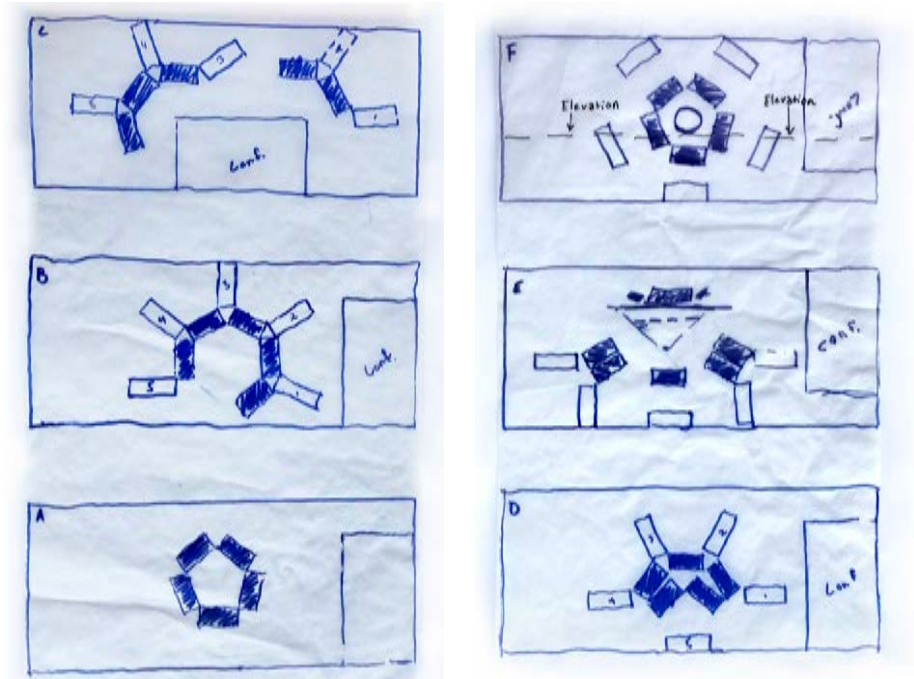
The synthesis phase was compressed into two weeks to encourage fast turnaround and idea generation. The first week was dedicated to a series of rapid fire design charrettes with the second week focused on refining their product. Each charrette lasted three hours and was designed to challenge the relationship of research to the implementation of space. After three hours, ideas were put aside for review at the end of the synthesis phase. Each subsequent charrette required the exploration of new topics and discouraged the re-use of ideas from one to another. The only constant was that the students were to apply their research to the design of space to support innovation. At the end of this two week period the work was presented in an open gallery setting where students conversed with each other and outside critics seeing the work for the first time. The best two designs produced by each student during this phase are documented in the pages that follow.

## CONCEPT REVIEW

Evan Schlenk presenting his work



**SMALL CHARRETTE - FIVE PEOPLE - "INTERTWINED"**  
exploratory exercise into innovation spaces.

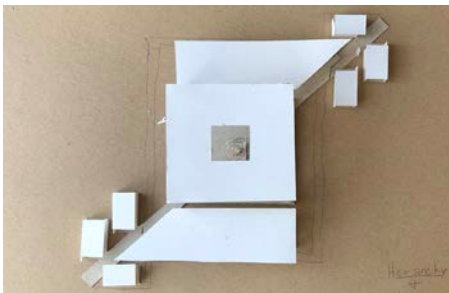
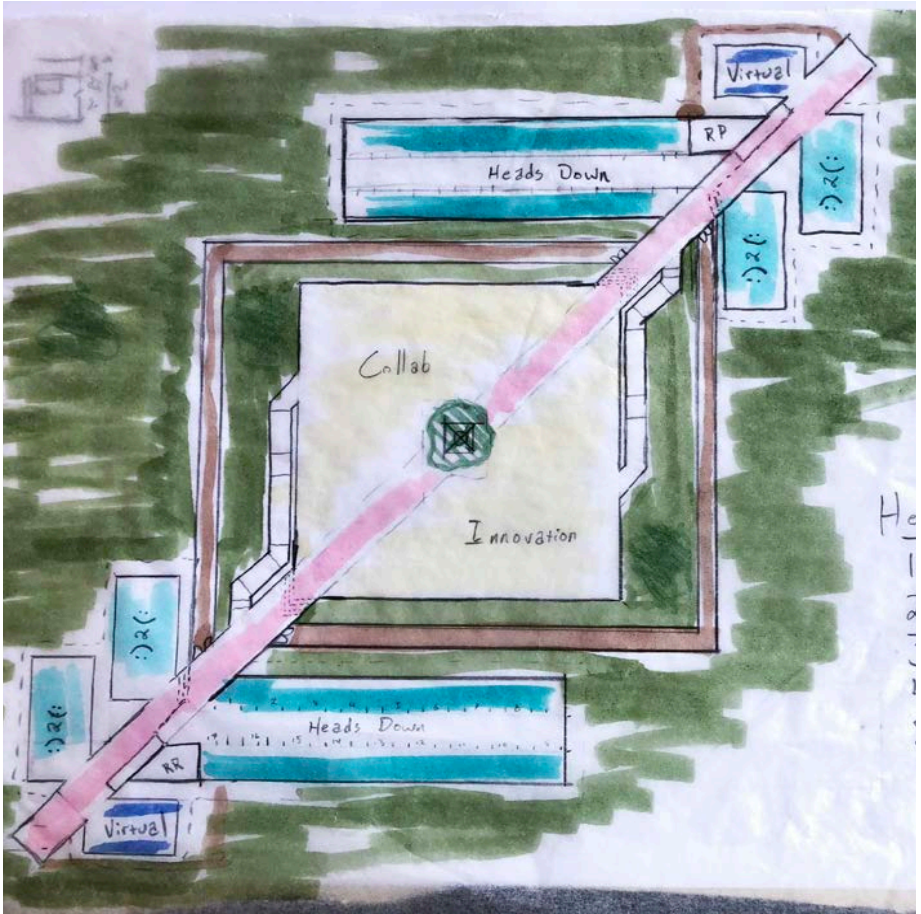


**PHYSICAL REPRESENTATION**  
uniformity, equality, transparent



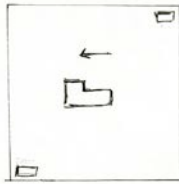
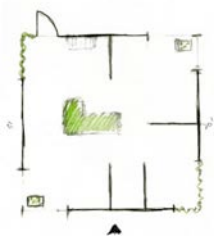
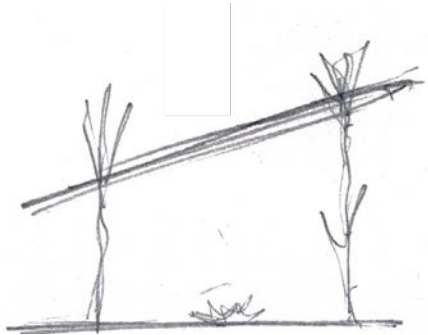
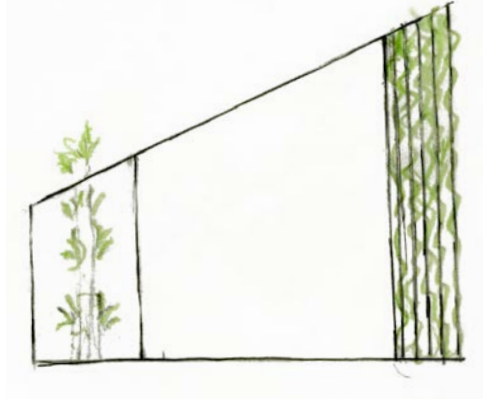
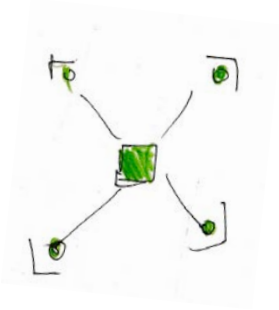
# MEDIUM CHARRETTE - FIFTY PEOPLE - "HEIRARCHY"

descending importance: collaboration, innovation, heads-down, face-to-face, virtual interaction.



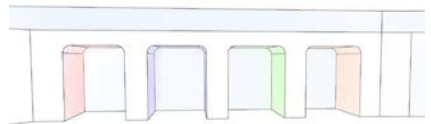
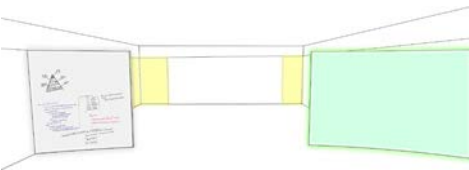
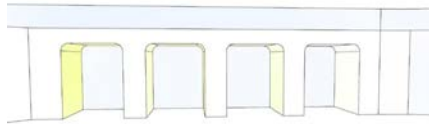
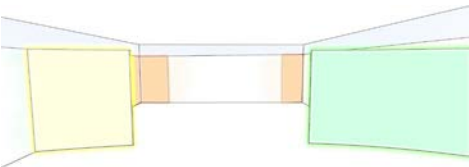
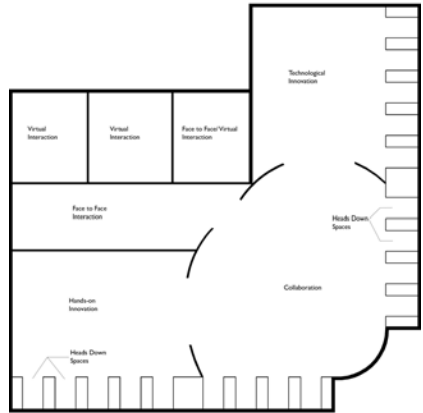
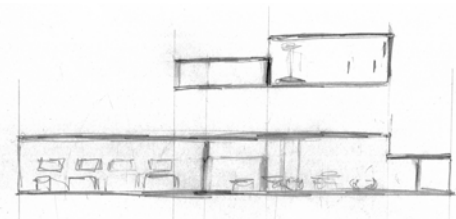
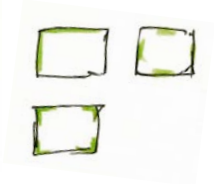
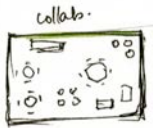
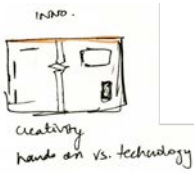
## SMALL CHARRETTE - FIVE PEOPLE - "AMIDST NATURE"

This project explored the idea of office space surrounded by nature in diverse ways



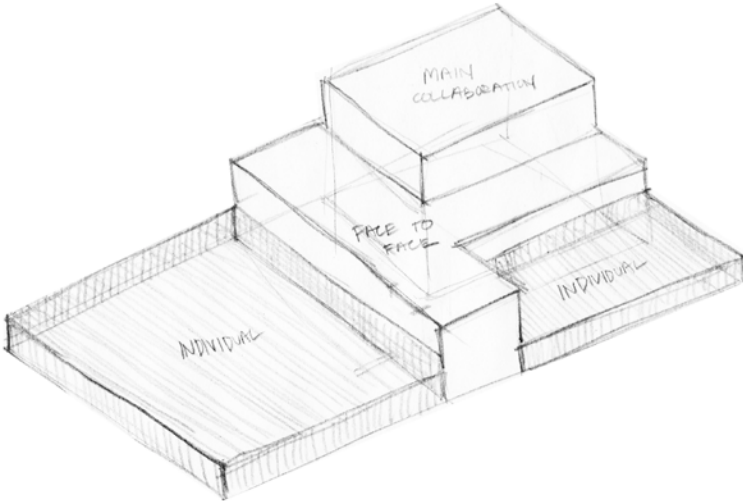
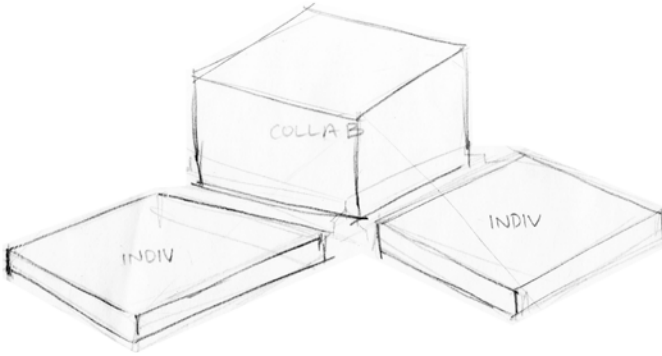
# MEDIUM CHARRETTE - FIFTY PEOPLE - "COLORED COMFORT"

This project explored the idea of comfort and flexibility through adaptive, color changing coves and walls



# MEDIUM CHARRETTE - FIFTY PEOPLE

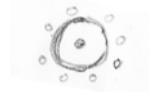
Disconnecting from Integrated Environments & Hierarchical Design



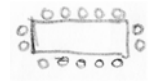
Action workspace



Face to face interaction



Innovation

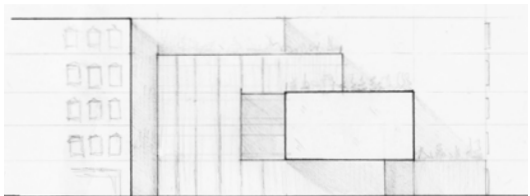
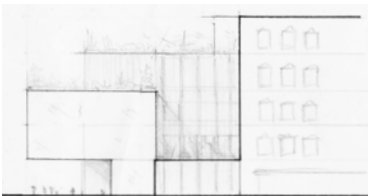
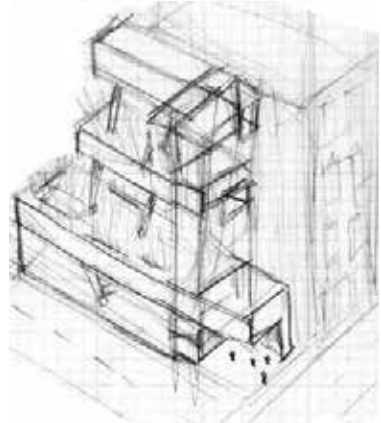
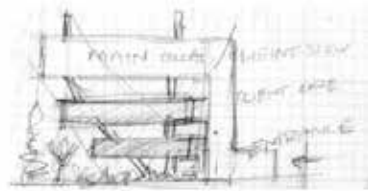
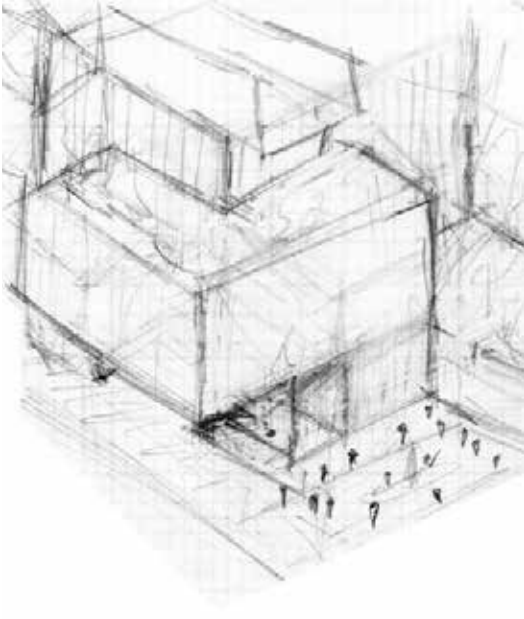


Large Collaboration

Innovation & collaboration - focus on open, bright, & independent space for in person face-to-face interaction

Hierarchy of space from large to small - collaboration, innovation, face to face interaction, heads down work, virtual interaction

**LARGE CHARRETTE - FIVE HUNDRED PEOPLE**  
Hierarchal Design & Nature in the Workplace

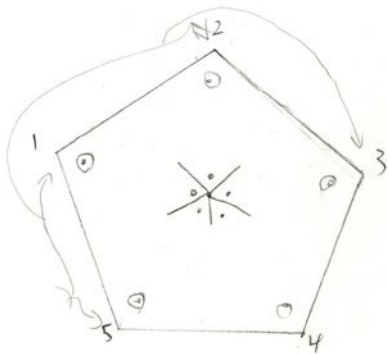
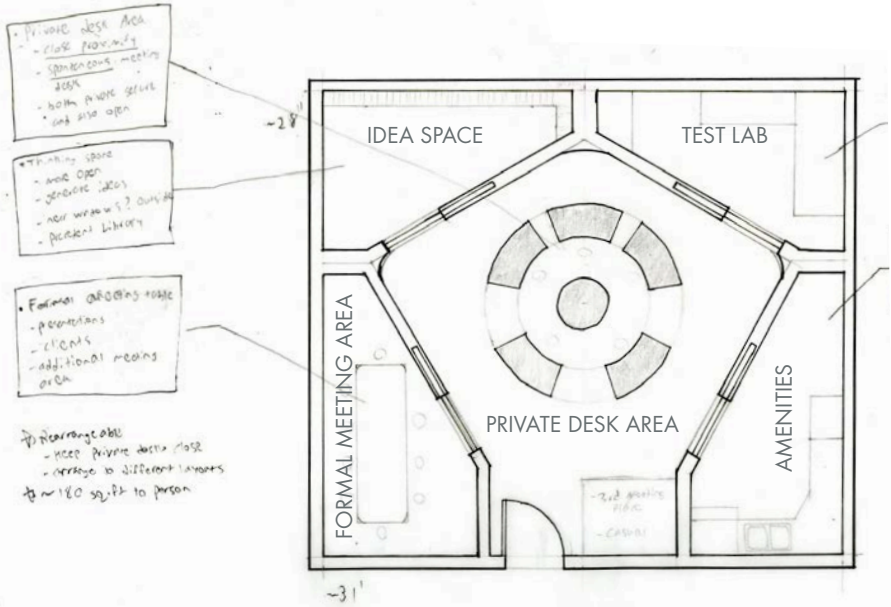


Response to an urban condition that values hierarchy of space, collaboration, innovation, heads down work, virtual interaction, company values, order of spaces visible from outside.

Relation to nature was achieved through views to nature on every floor, adding green space to ever growing urban environments, and outdoor space catered to the hierarchal program

# SMALL CHARRETTE - FIVE PEOPLE

Innovation space for a five person freelance collective.



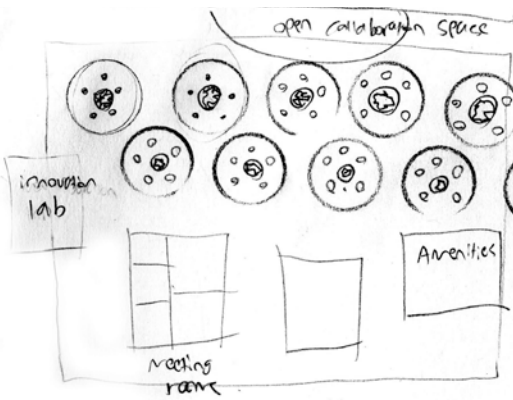
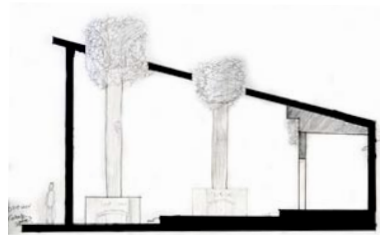
Five people independent, shared space or collective of freelancers equal hierarchy everyone is equally the boss

Freelance open/flexible schedule everyone wants their personal area need an outlet for collaboration

We strive for the corner office, so in equal hierarchy, does everyone get a corner desk?

# MEDIUM CHARRETTE - FIFTY PEOPLE

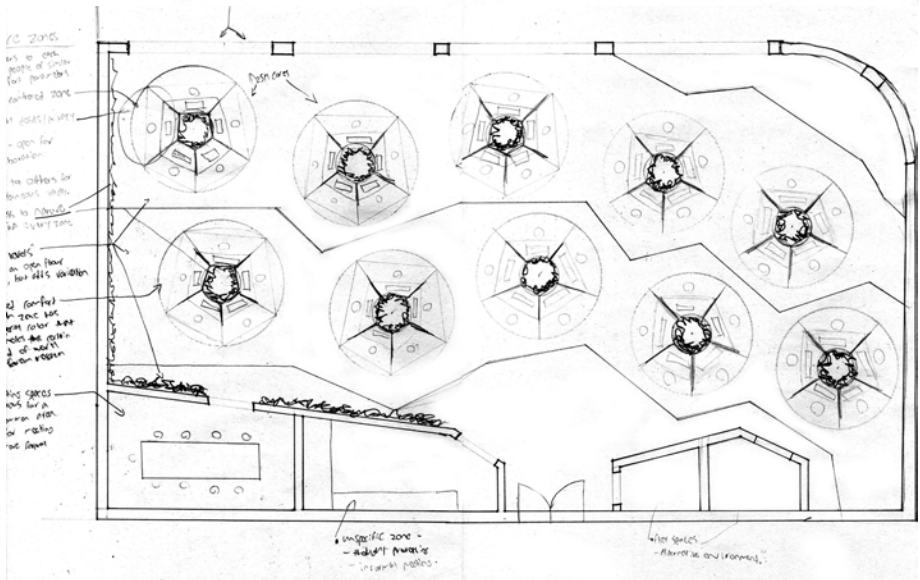
Office space focused around social proximity and connection to nature.



## Biomes of 5

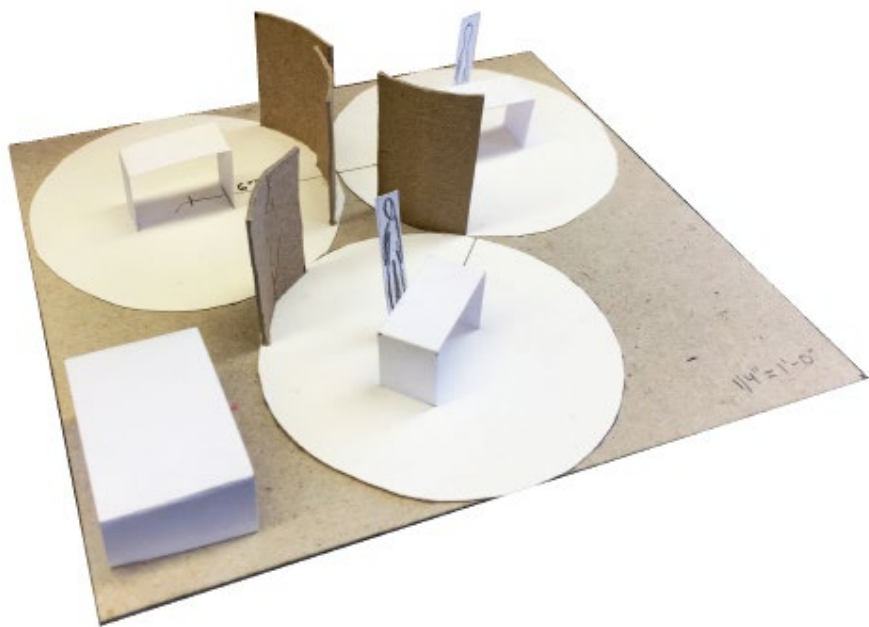
- worth with around people of similar parameters
- plants in the middle
- certain colors - ramp

• elevation of different zones?



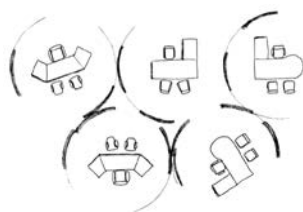
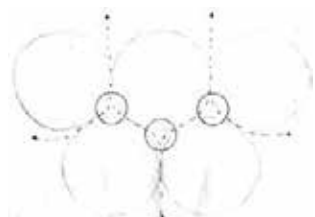
## SMALL CHARRETTE - FIVE PEOPLE

The focus of the workplace will be on the individual and how they work throughout a given day.



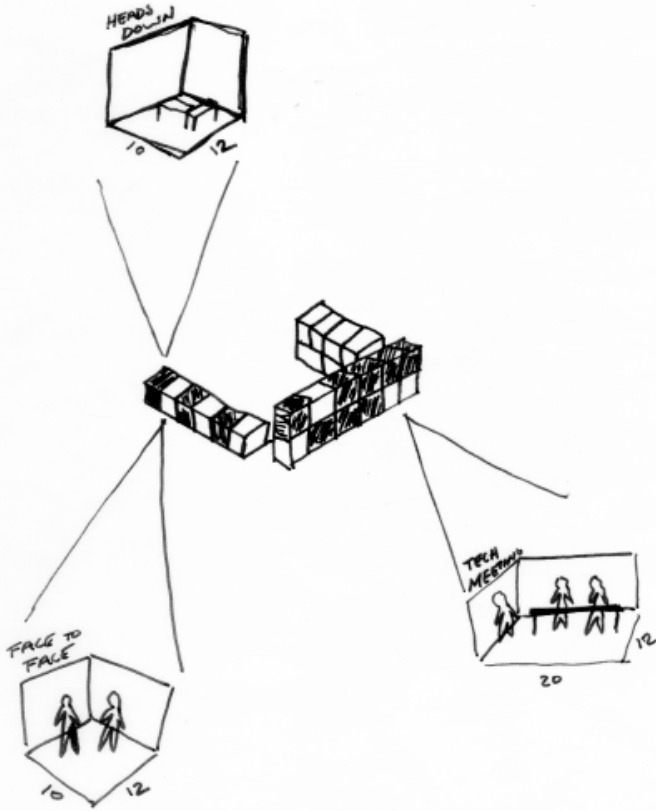
## FLEXIBLE COLLABORATION

Adjustable walls allow individuals to open for collaboration.



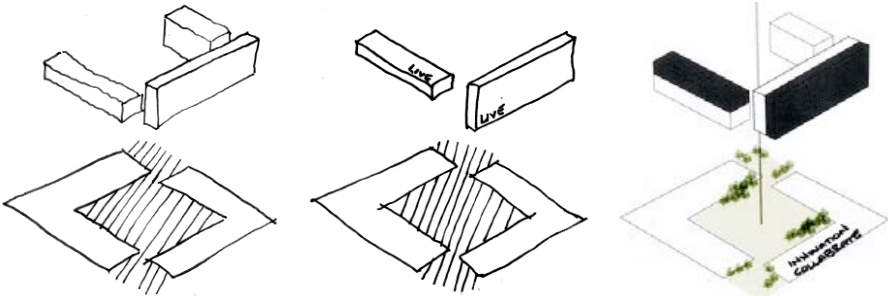
## LARGE CHARRETTE - FIVE HUNDRED PEOPLE

As freelancer's become a larger part of the workforce special city blocks will be developed to support their flexible lifestyles.

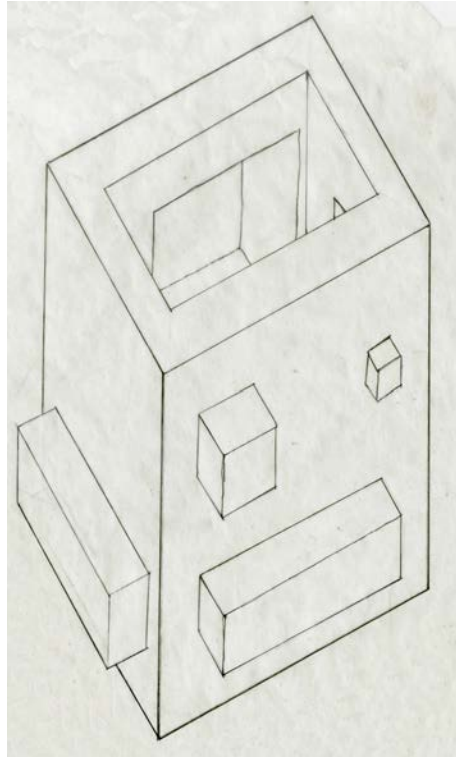
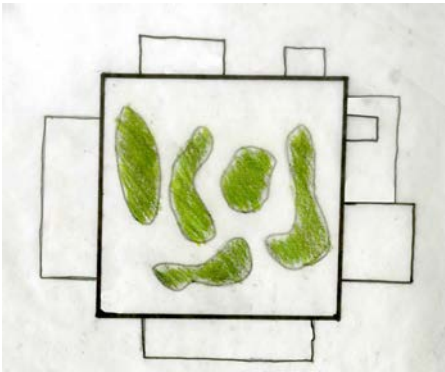
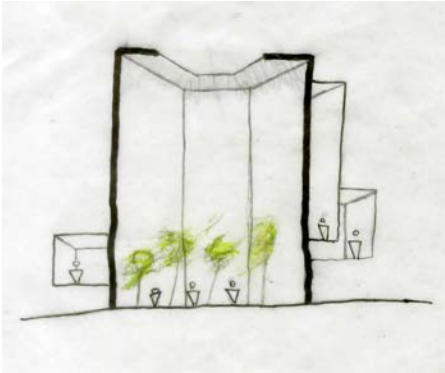


## LIVE, WORK, PLAY

All needs of the freelancer will be incorporated into one place.



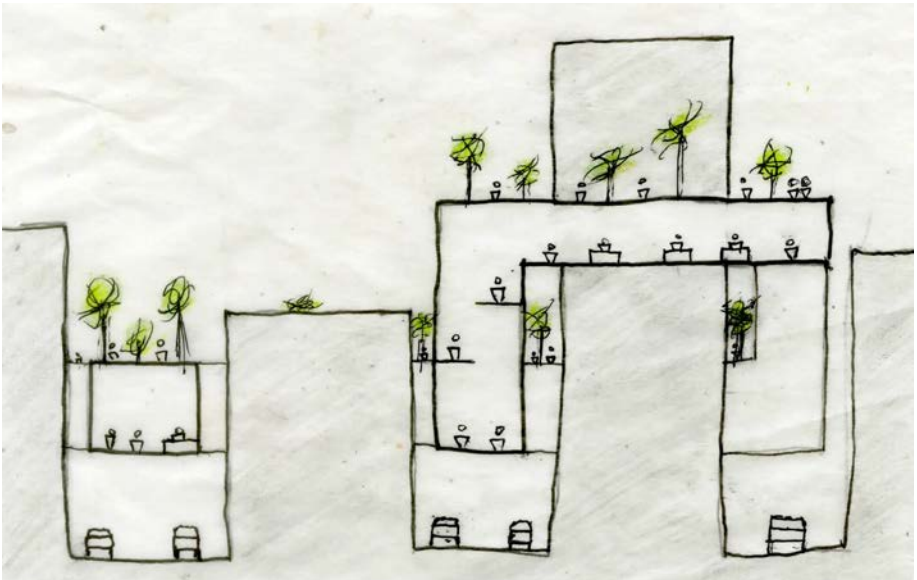
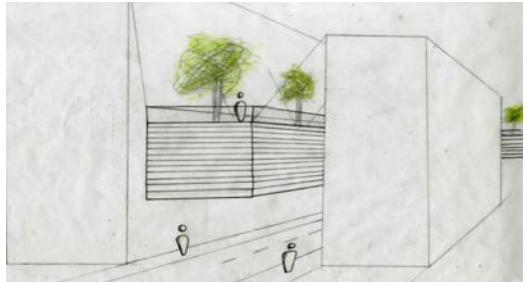
**MEDIUM CHARRETTE - FIFTY PEOPLE**  
Nature as a guide for organization



Programmatic work spaces are located around a centralized, open air courtyard. The courtyard serves as an informal work and meeting space for everyone in the building.

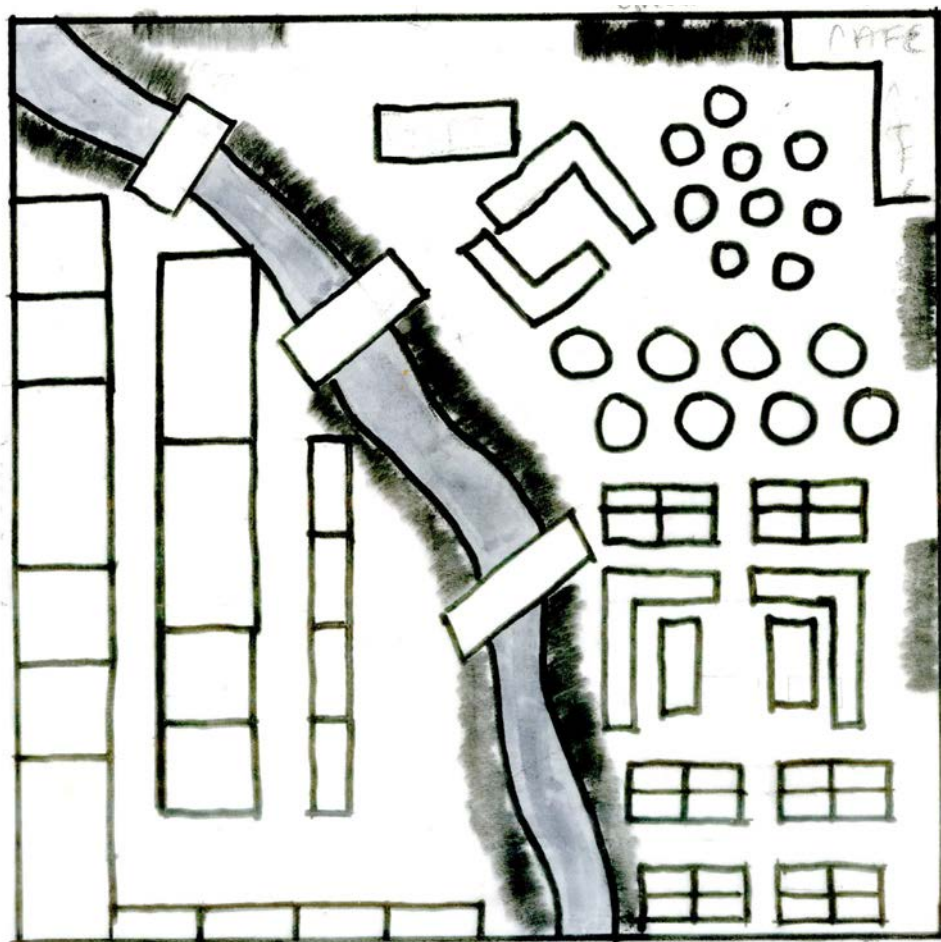
## LARGE CHARRETTE - FIVE HUNDRED PEOPLE

An autonomous future & the impact on the urban form

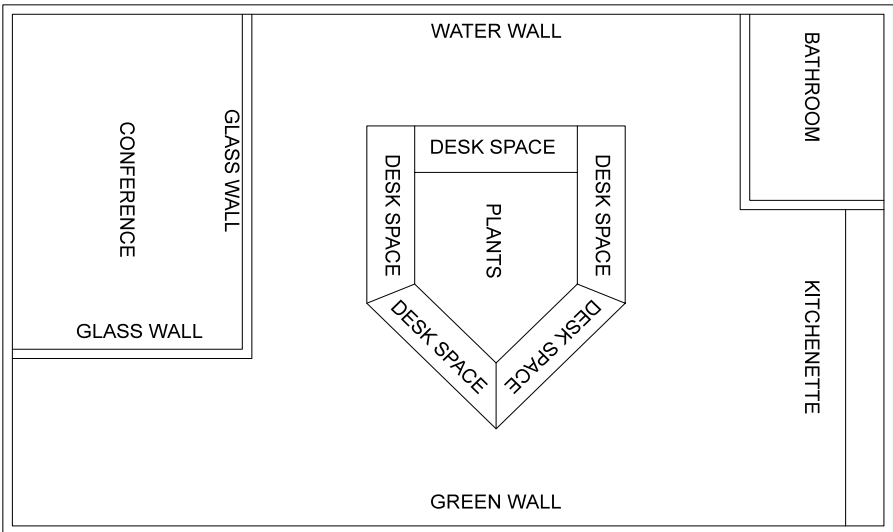
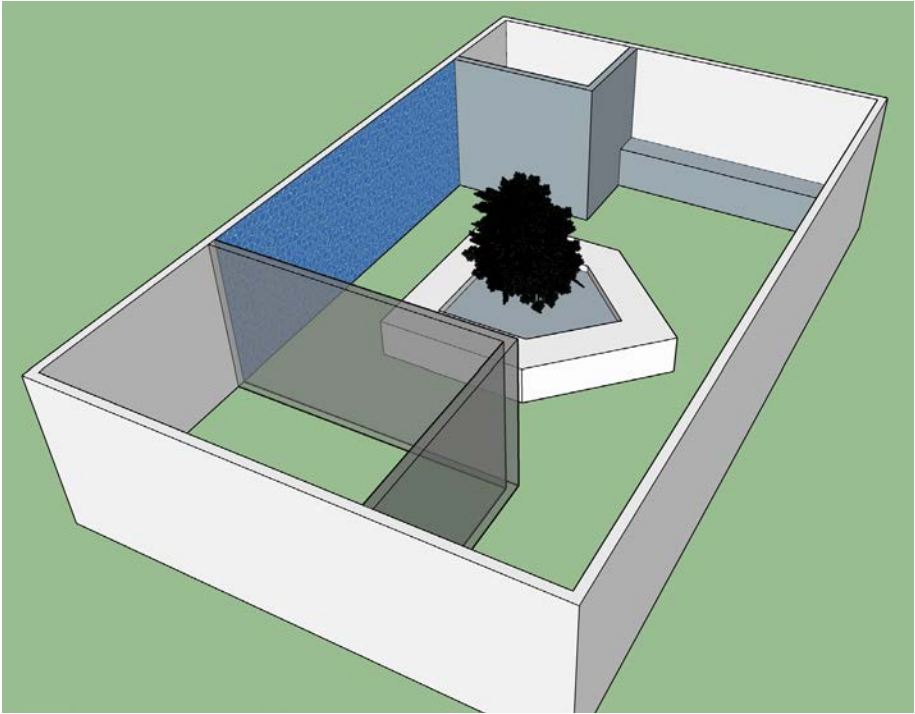


A building that weaves around the existing and evergrowing urban fabric. The building is lifted off of the ground to provide space for autonomous roadways. Roof space is used as a public park and as primary pedestrian circulation.

MEDIUM CHARRETTE - FIFTY PEOPLE  
Nature

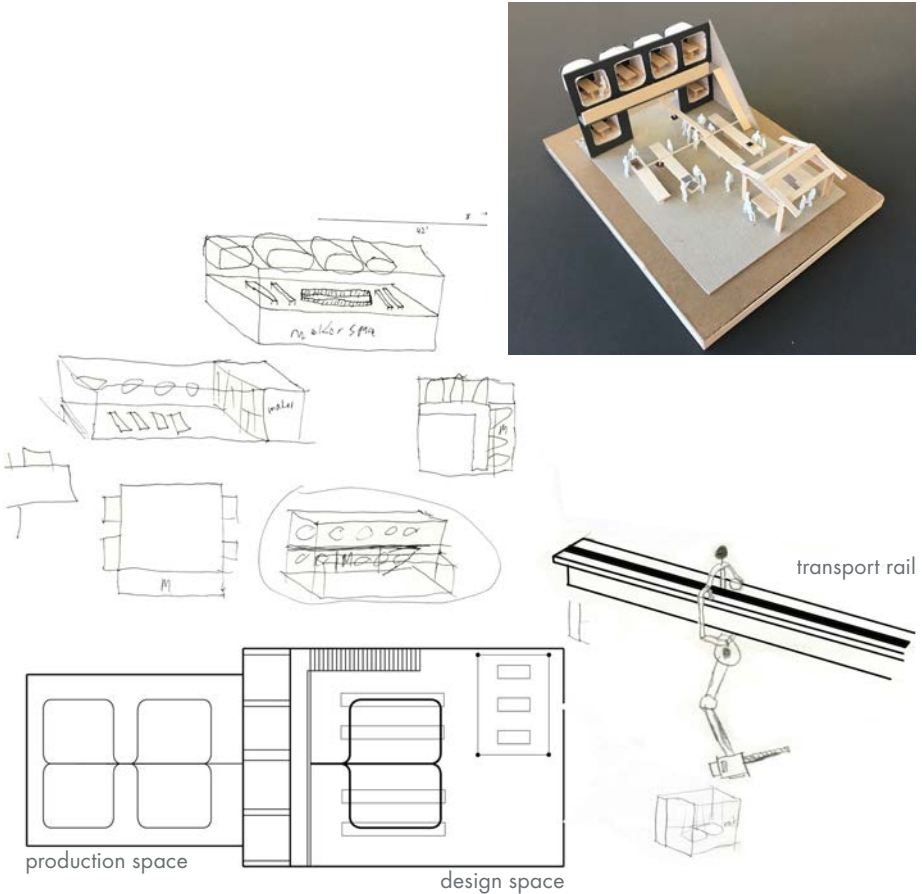


**SMALL CHARRETTE - FIVE PEOPLE**  
Nature



# MEDIUM CHARRETTE - FIFTY PEOPLE

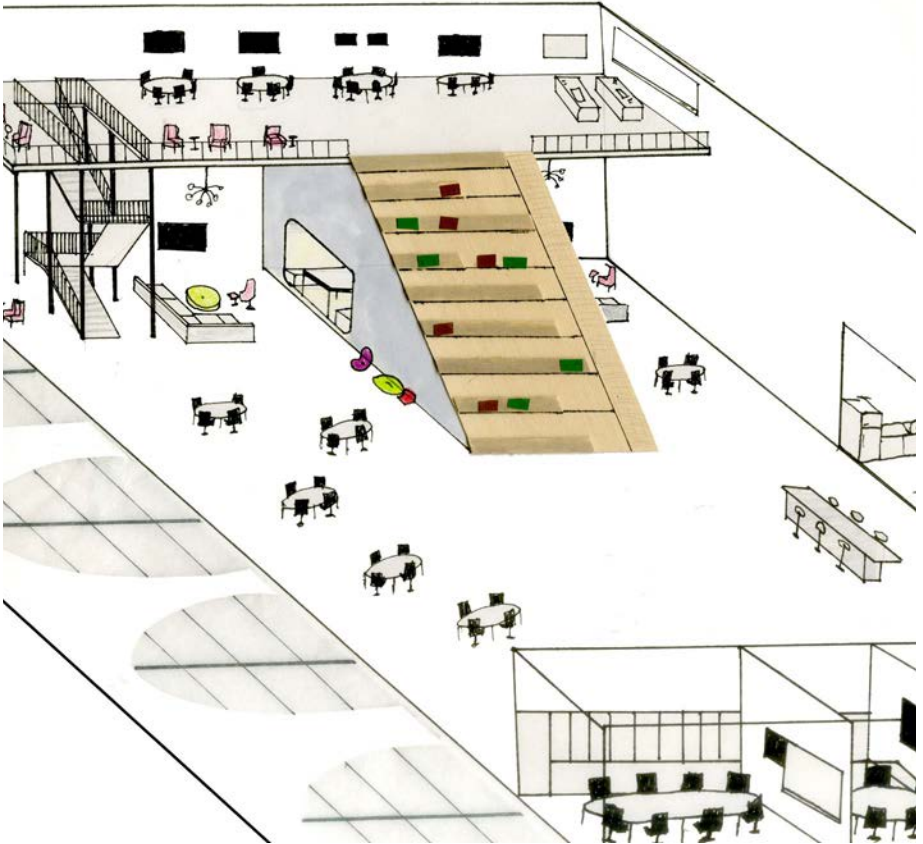
Craftsmanship & Freelance



This collaboration space was designed to bridge a connection between a factory floor/maker space with a design studio space. The rails running above the desk are meant to transport heavy items like tools and prototype productions between workspace and production space. There are multiple large work tables on the floor that allow freelance workers to take possession of them as needed without creating a feeling of ownership. There is also an array of pods that allow for heads down focus space away from the larger group areas.

## SMALL CHARRETTE - FIVE PEOPLE

Comfort



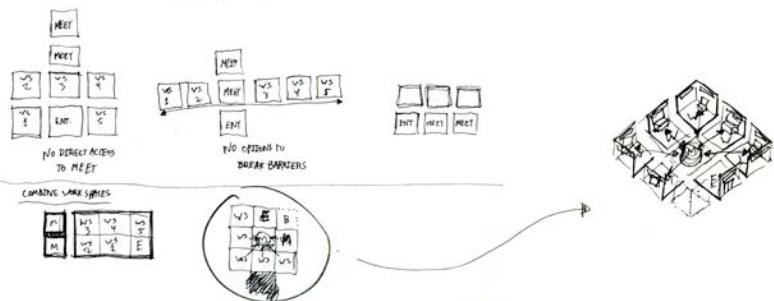
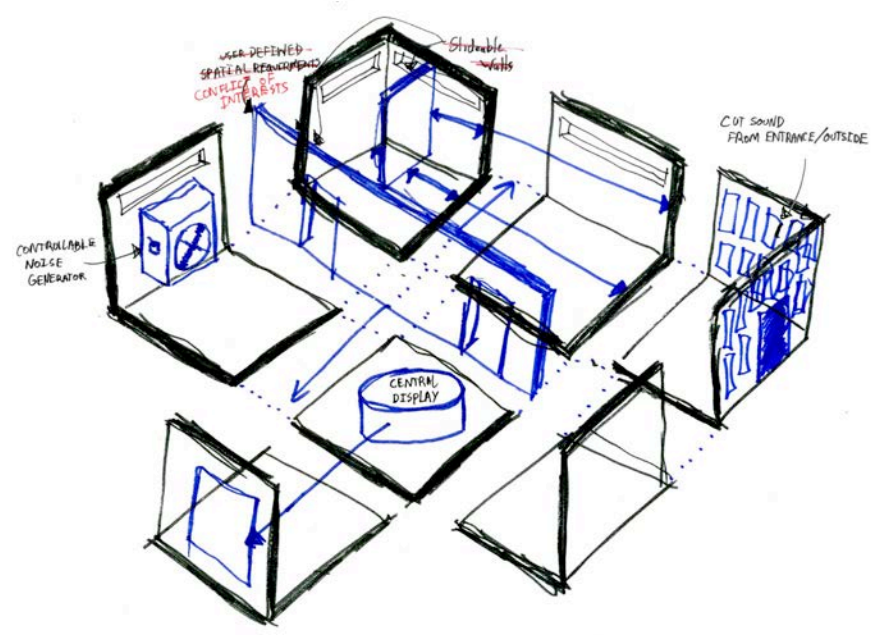
This collaboration space is designed to encourage people to find the type of focus or group spaces that work best for them. There are many face-to-face, group, and private spaces for varying numbers of employees to use. The most notable feature is the work stair in the center that can be used as a lecture space, but also as a space for individuals to relax on when there is not a big group in the room.

# SMALL CHARRETTE - FIVE PEOPLE

Collaboration in an integrated environment

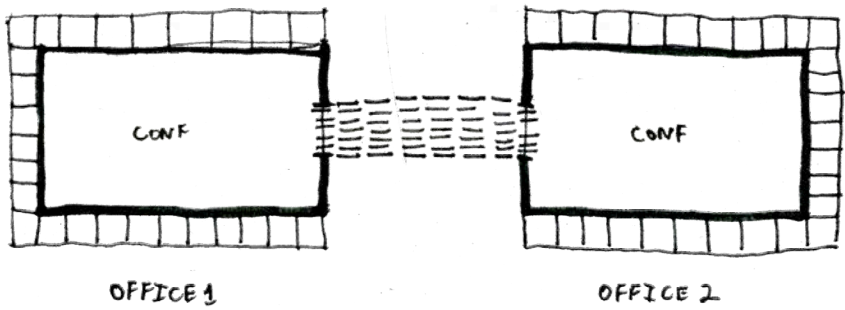
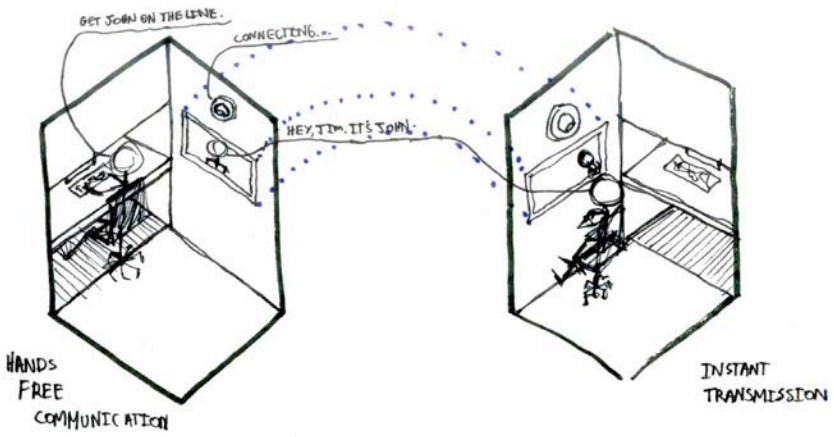
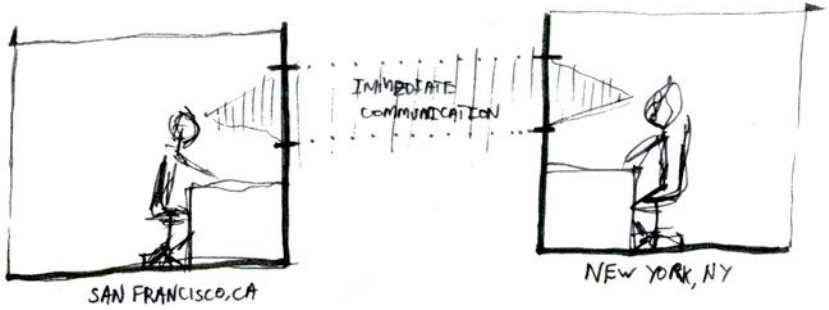
## INTEGRATED ENVIRONMENTS

- Innovative Space Requirements**
- Creates focus
  - Emphasis on collaboration
  - Central display space for discussion and meeting
  - Small scale - 5 people
  - 150-200 sqft per person (sq)
- Environmental qualities**
- Controllable noise
  - Movable settings (tables, walls, etc)
  - Individual spatial considerations (allow space for 1 person)
  - Separation from outside world (function should not be compromised by present conditions)
  - Acoustics
  - Lighting
- Ability to facilitate and share ideas**
- Ability to communicate between individual spaces
  - Stimulation ability to separate
- Classing windows**



# MEDIUM CHARRETTE - FIFTY PEOPLE

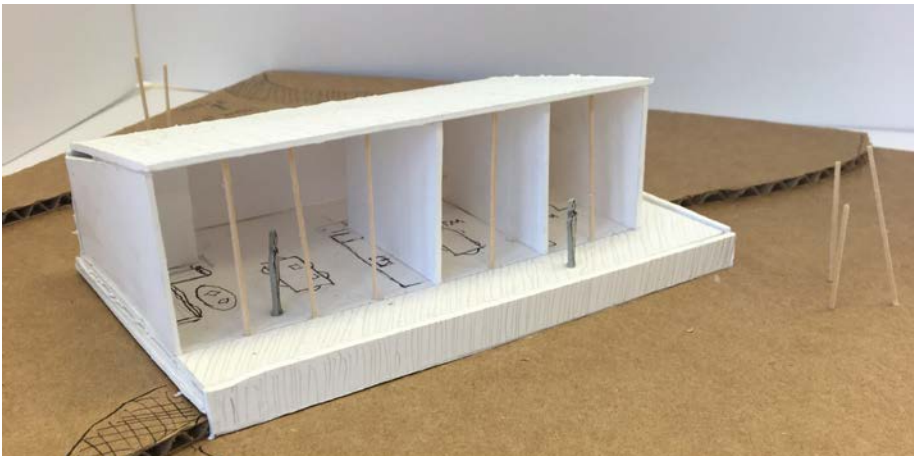
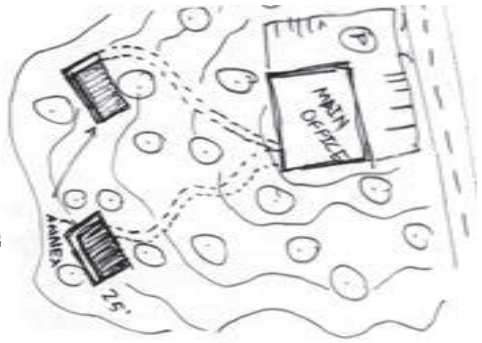
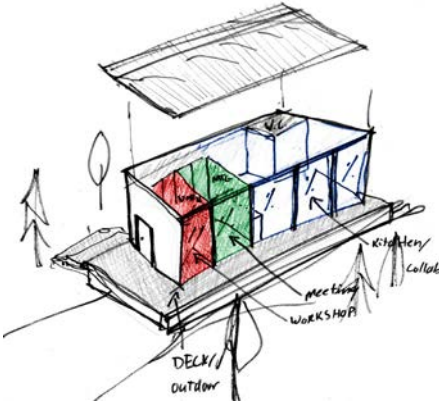
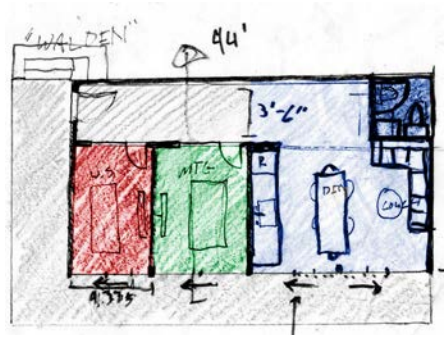
Communication in both the virtual and physical environment



- Should communication be of mass or individualized?

# SMALL CHARRETTE - FIVE PEOPLE - "WALDEN"

This exercise sought to create outpost offices that surround employees with nature.



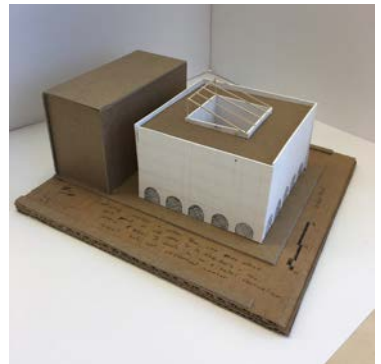
MEDIUM CHARRETTE - FIFTY PEOPLE - "THE NEW COURTYARD"  
 This project focused on community amenities and public transit as part of the working experience.



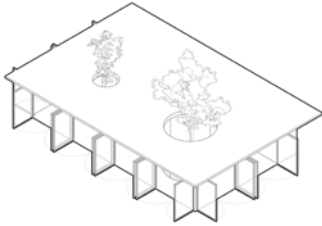
THE NEW COURTYARD

the focus of our future must  
 respect + expand its urban context  
 such like the garden + the street  
 today. The ground floor is for small  
 business + commerce while the upper  
 floors are introduced for office use.  
 the new organization will allow citizens  
 to have an public life + integrate their  
 communities."  
 Transportation + Nature + Super City

-Touche  
 Pratt



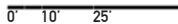
**SMALL CHARRETTE - FIVE PEOPLE**  
 Innovative Workspace



Provide Solution



Office within a natural environment



Separation through trees in space



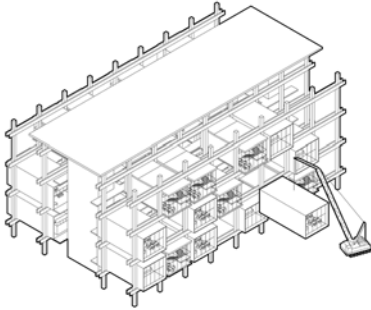
Diversity of workstation

**THE PROBLEM**

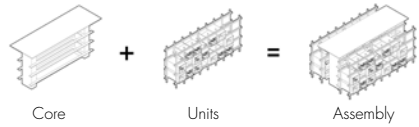
Exploring a shift in office typology spurred by advances in communication in the digital age, this outpost style pavilion sees a future that puts innovation in the places that capture worker's imagination. In this example, a small team is provided the traditional requirements of an office space within the confines of a dense forest. The only thing separating them from the trees are operable glass walls that allow for the sensual components of nature to permeate into the space. Such an office promotes health and wellness and could see an increase in worker productivity. Components of the building would include sustainable and efficient construction methods that would decrease overhead costs.

# LARGE CHARRETTE - FOUR HUNDRED PEOPLE

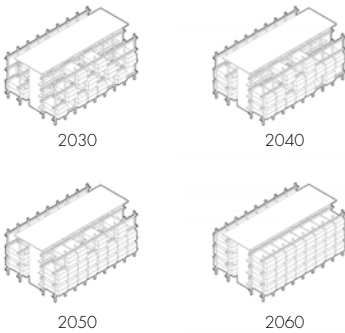
Innovative Workspace



Provide Solution



Create an adaptable framework



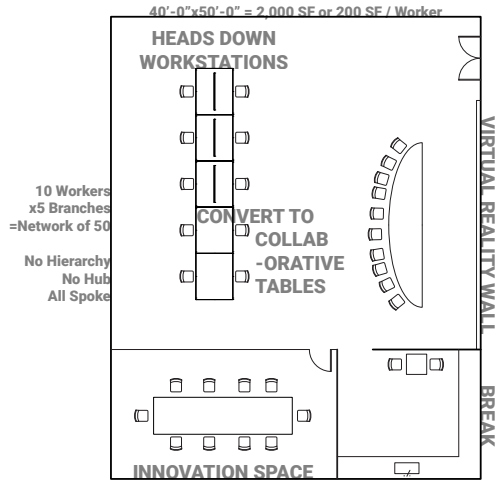
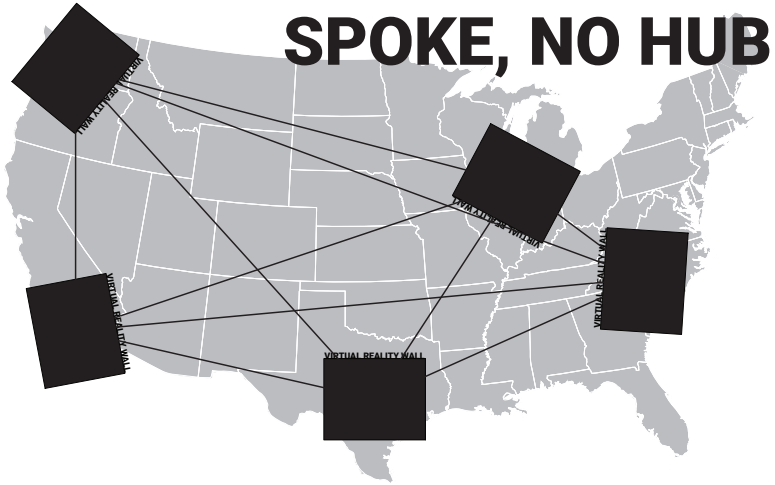
Initial construction allows room to grow

Array of unique office units

## THE PROBLEM

The largest of these studies explores a solution applicable to corporate impact in urban environments and the adaptability required of buildings in a rapidly changing economy. By establishing a framework that specific built units could exist within, a single structure could serve as a single headquarters in one lifetime and a multi-tenant office in another. Each of these units promote customization to fit the need of any tenant including conference spaces, closed offices, collaborative offices, and lecture halls. Such a building prevents the social voids that are created when large companies leave or cease to exist. In their place grows new life that will carry a city into the future.

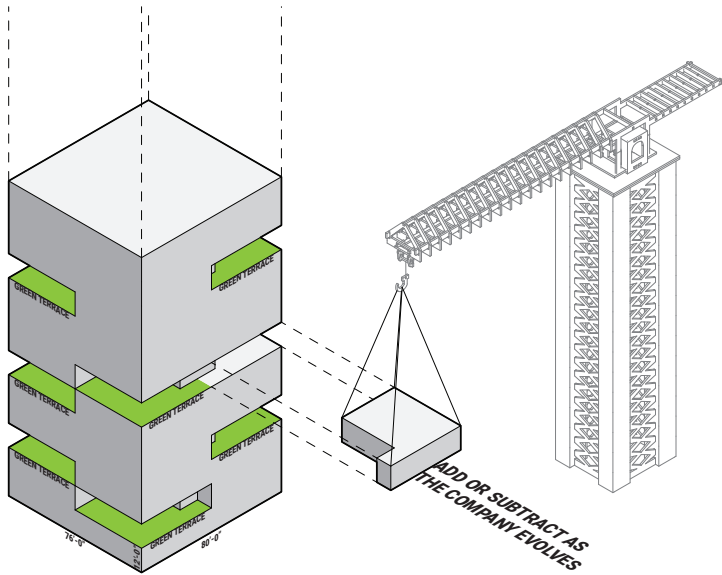
MEDIUM CHARRETTE - FIFTY PEOPLE  
 Virtual communication in a hub and spoke model



Interconnected office locally and nationally

# LARGE CHARRETTE - FIVE HUNDRED PEOPLE

Flexible building on a former industrial site

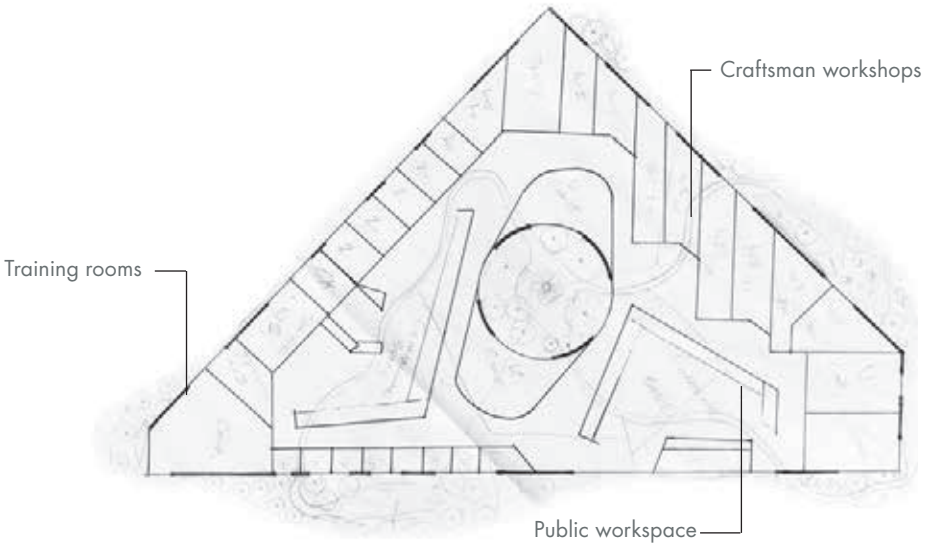


Revive a post industrial site through a flexible tower construction, minimizing footprint, and maximizing green space



## MEDIUM CHARRETTE - FIFTY PEOPLE - "RIVER VILLAGE"

Horizontal collaboration space in a naturally inspired layout



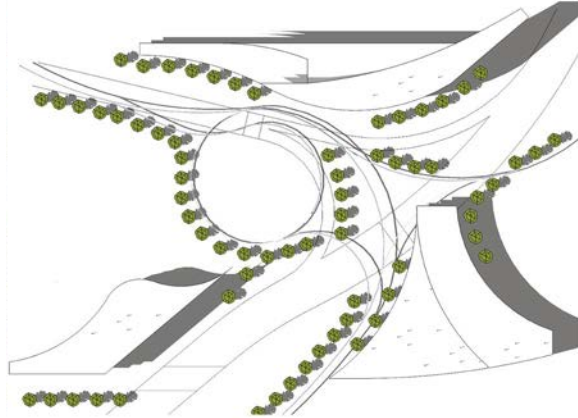
This space is designed to encourage horizontal collaboration for an office/workplace of 50 workers. A water feature runs throughout the space providing a connecting feature that will create the mental ease of natural language with a central water fountain from which all springs. This is reflexive of the idea of a village growing around a spring.



View from conceptual exterior into the space, showing aesthetic visual ease and natural influence.

# LARGE CHARRETTE - FIVE HUNDRED PEOPLE - "INFRASTRUCTURE AND REUSE"

Growing and efficient infrastructure and space use

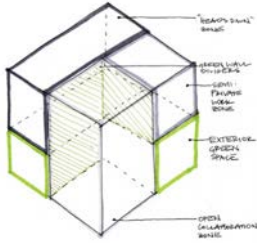


The premise of this design is that complexes begin to arise around main infrastructure intersections. With the rise of autonomous vehicles our traditional understanding of the highway will shift as roads become more efficient and smaller, giving rise to better space usage.



# CHARETTE 1\_5 Person Satellite Workspace

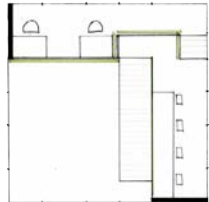
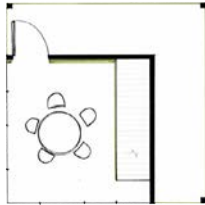
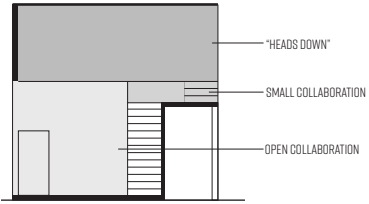
An easily assembled work cube that fosters multiple levels of innovation and connections to outside environments



vertical natural dividers

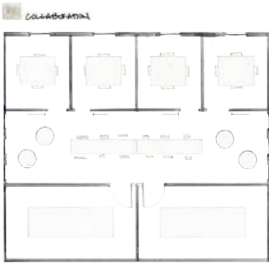


horizontal separation of work

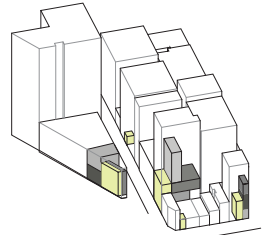


# CHARETTE 3\_Urban Work Nodes for a Growing Economy

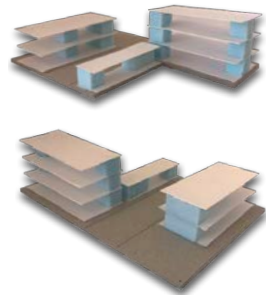
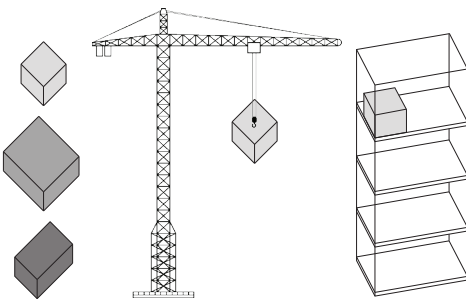
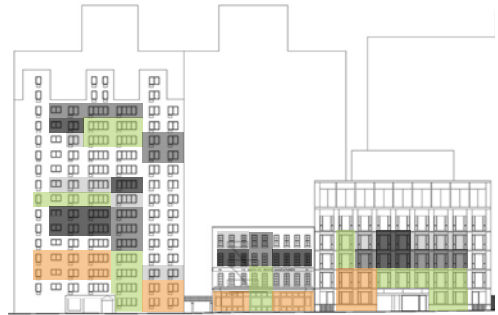
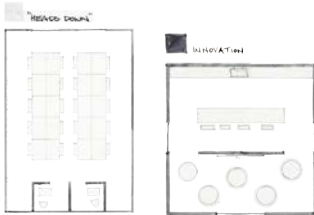
A system of workspaces units that can be added upon and centered around nature nodes within a city



urban node green spaces

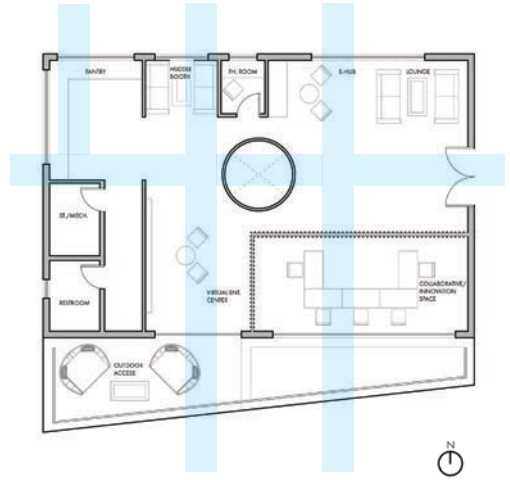
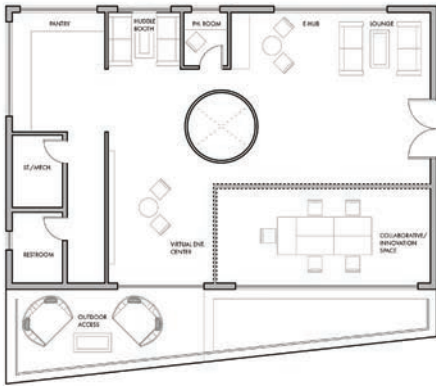


multipliable work units around nodes

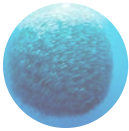


## SMALL CHARRETTE - FIVE PEOPLE - "WORKSPACE WITHIN NATURE"

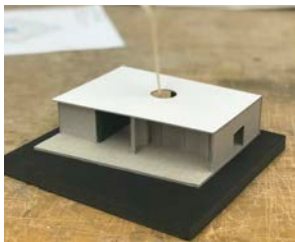
A transparent office space that blurs the boundaries between different spatial programs



Diagrammatic plan showing transparency in layout and visual access to nature from all sides

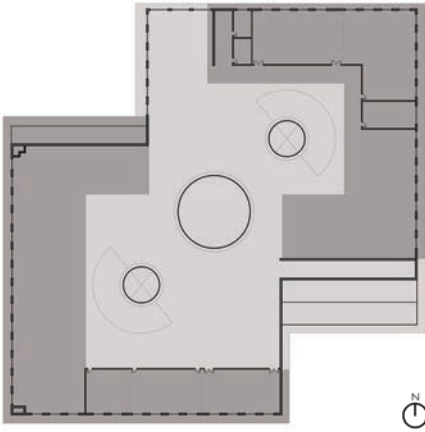


Different ways to create a constant food chain within an indoor ecosystem that replenishes itself

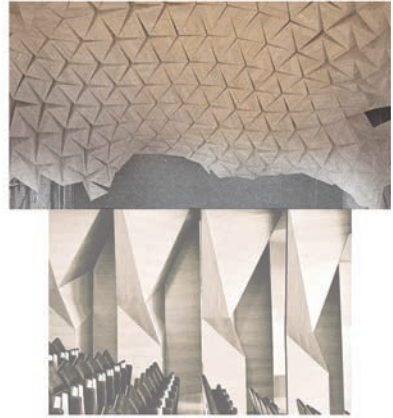


# MEDIUM CHARRETTE - FIFTY PEOPLE - "AN ARCHITECTURAL RESPONSE TO BIOMIMICRY"

A fluid transition between areas to promote subtle nuances of variance as one traverses through the space



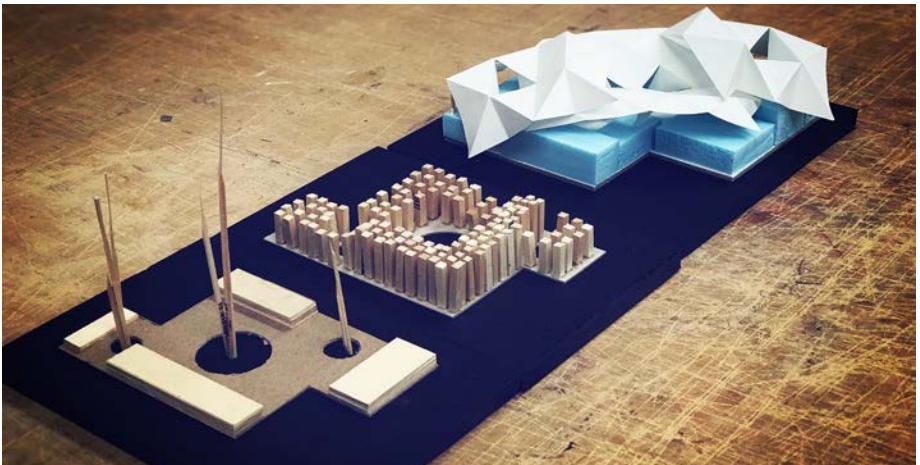
Diagrammatic Plan showing the relationship between Public and Private areas.



Diagrammatic Representation of interaction between X-Span Ceiling Structure and X-Span Wall Systems.

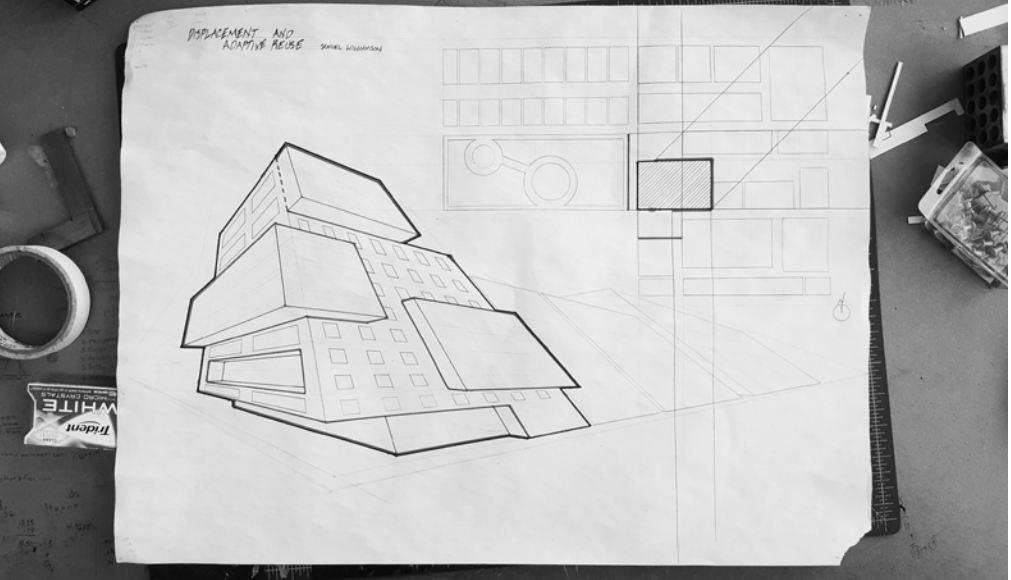


Longitudinal section showing the interaction of x-span ceiling structure with an occupied space: ceiling structure imitates a forest canopy as a juxtaposition of 3d planes



## MEDIUM CHARRETTE - FIFTY PEOPLE - "CONTEXTUAL DESIGN"

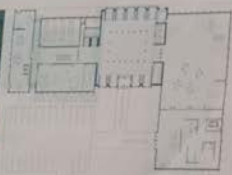
An exploration of design using existing architecture to add and remove massing depending on contextual elements.





# CLEARANCE

Managing Secure Spaces



A woman with blonde hair, wearing a green short-sleeved button-down shirt and a black skirt, stands to the left of the display board. She is looking towards the right side of the board.

A woman with long dark hair, wearing a dark blue jacket, is seated in a green office chair, facing the display board.

A man with dark hair, wearing a dark blue suit jacket, is seated in a green office chair, facing the display board.



# FUTURE OF WORK DEVELOPMENT

JOSHUA ANDERSON - 142

MICHAEL ROGOVIN

KRITI CHAUDHRY - 148

SCHOOL OF ARCHITECTURE

MATTHEW DAVIS - 154

SAID 4002

JOHN GARRISON - 162

SPRING 2018

HANNAH JOHNSON - 168

NORMAN KERR - 174

KATLYN MABRY - 180

CHRISTOPHER MERCHAK - 184

OLIVER MULLIKIN - 190

JONAH PRUITT - 198

JAY SCHAIRBAUM - 204

EVAN SCHLENK - 218

JARED SCHROEDER - 226

SHOSHANNA SIDELL - 230

SRIMOYEE SINHA - 238

SAMUEL WILLIAMSON - 244

## FUTURE OF WORK DEVELOPMENT

In the final seven weeks of studio, students transformed their design proposals from the synthesis phase into a tangible architectural response. Each proposal had to implement three findings from research and apply this toward their own projected future for Cincinnati, Ohio. For some, that future entailed the societal implications of fully autonomous transportation or the realization of virtual reality environments for telecommuting. Whatever the narrative was, it provided the context which the architectural design had to live in and respond to. The only constant was that students were to design space to support innovation and creativity.

The work produced in this phase culminated in a final review and competition hosted by BHDP. A panel of critics parsed through each proposal and chose three projects they felt had best risen to the challenge of designing for the future of work. Kriti Chaudhry, Matthew Davis, & Jay Schairbaum won first, second, and third respectively. The designs of these three and all others are documented in the pages that follow.

# FINAL REVIEW

Jay Schairbaum presenting his work



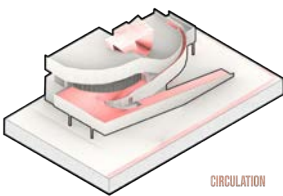
# FUTURE OF WORK ENGAGEMENT

JOSHUA ANDERSON

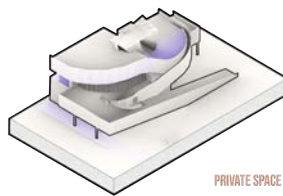
Exploring a future of work that pushes corporate transparency to its furthest extent by blending interstitial public and private spaces in an attempt to breakdown the barrier that separates a company and their consumer. Future generations are becoming ever more aware of the power of the corporate world and ask that a corporation interested in their business give back to the community in some way. What follows is an architectural exploration of the extremities of corporate/public interaction and just how far and transparent a corporation can be while maintaining a competitive advantage.

## CONCEPT DIAGRAMS

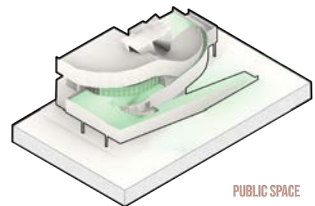
Overall visualization of programatic elements



CIRCULATION



PRIVATE SPACE



PUBLIC SPACE

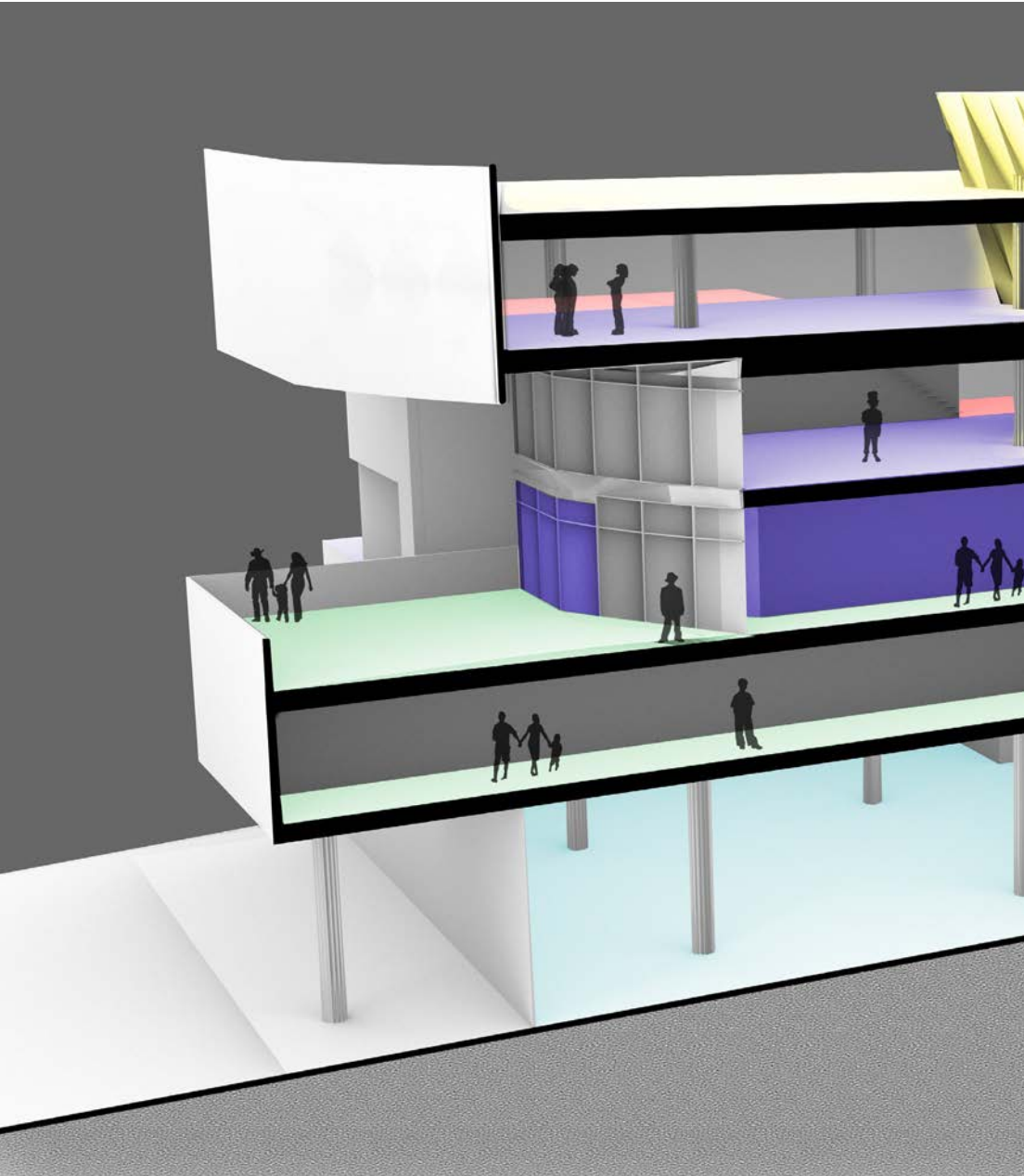
## SITE MAP

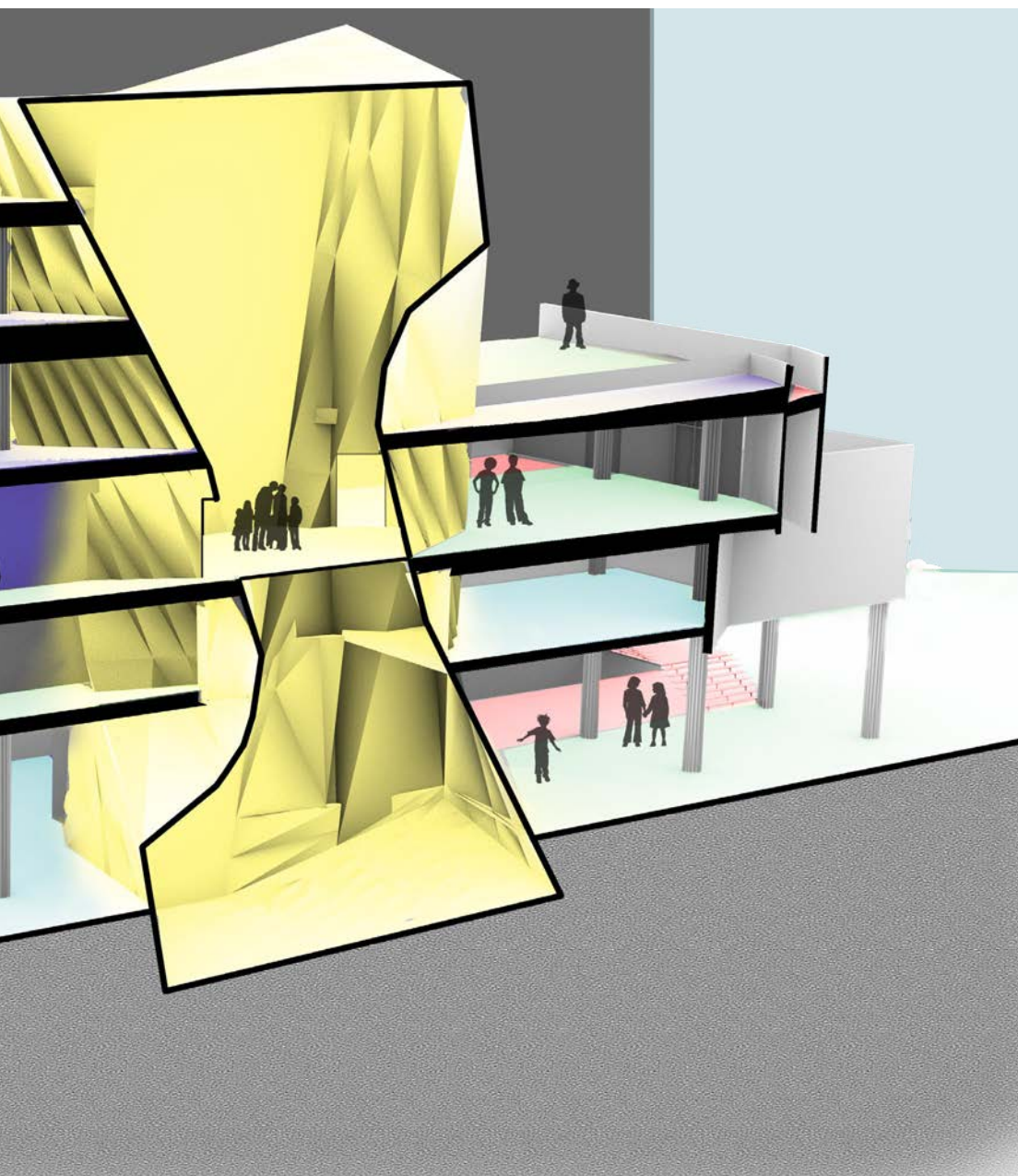
public transit (blue), public parks (dark green), public buildings (light green),  
site (red), viewsheds (yellow)



# SECTION PERSPECTIVE

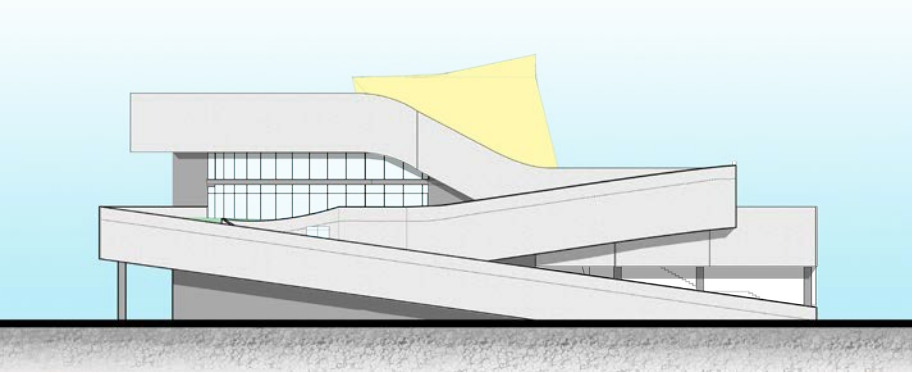
a study of circulation and interaction between public and private spaces





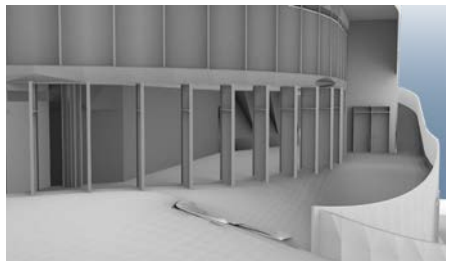
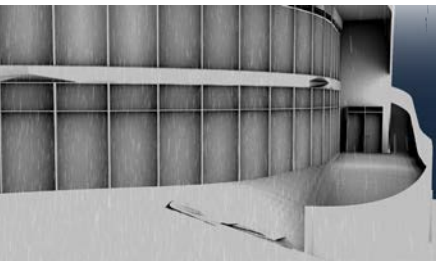
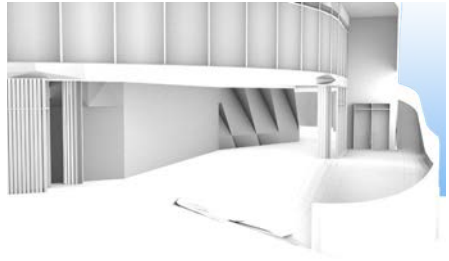
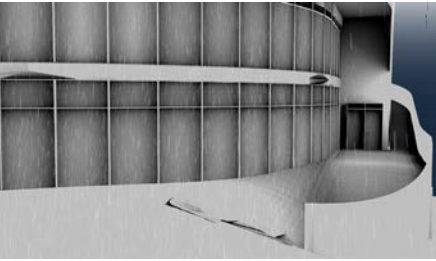
## NORTH ELEVATION

an outward expression of architectural ideals of cross circulation



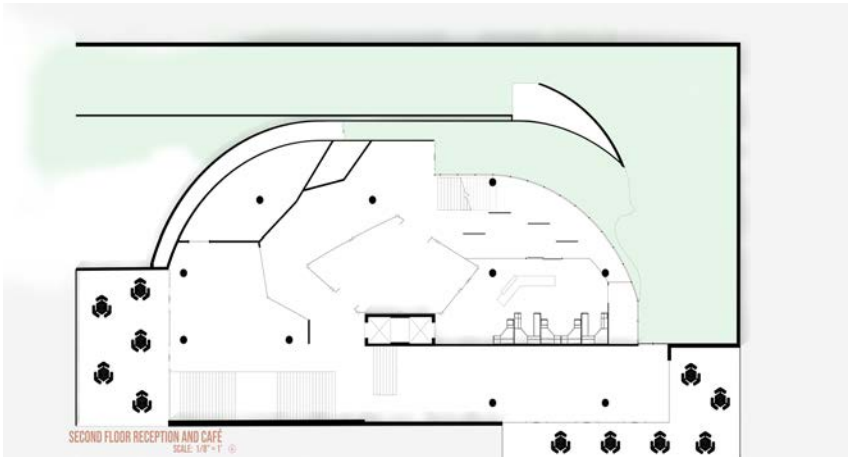
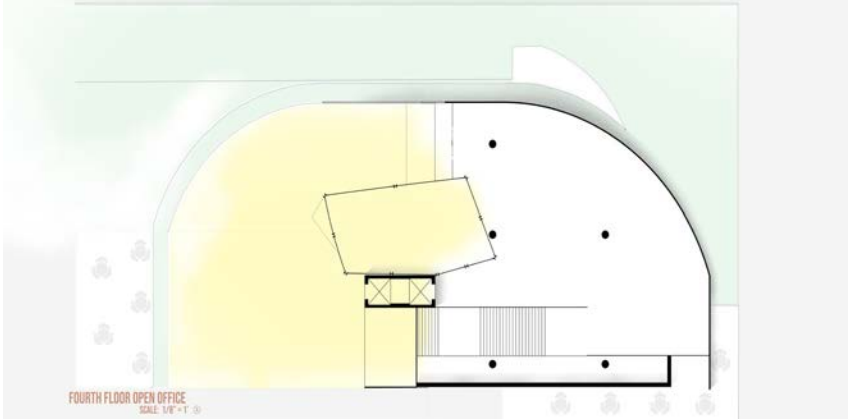
## PERMEABLE FACADE

literal representation of transparency and fluidity



# OPEN OFFICE PLAN

views without barriers allowing every desk in the office a view to the outdoors



# MODULAR WORKSPACES AND COMMUNITY ENGAGEMENT

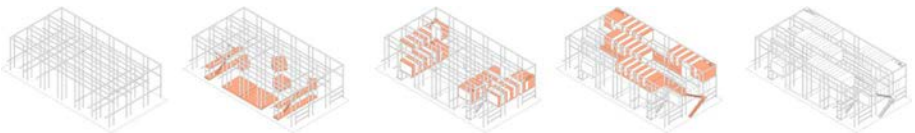
## TRANSPOSE

KRITI CHAUDHRY

It is the year 2030 and our world is changing as always. The major tech companies like Apple and Google have gained a strong hold over the industrial sector. The year is also experiencing its greatest percentage of freelancers and small businesses than ever before. This new generation of workers strays away from the traditional workplace scenarios and wants to create its own framework for the workplace. Transpose provides a design solution for this growing population. The proposal is a matrix of pre-fabricated modular workplaces that are supported by a steel structure. These modules have the flexibility to be modified as per the needs of the user and the additive ability to expand with the inhabiting business. This proposal can house between 2- 4 companies. The building is lifted up off the ground to create a plaza for inter- company and community engagement.

### DIAGRAM

Phases of the Project

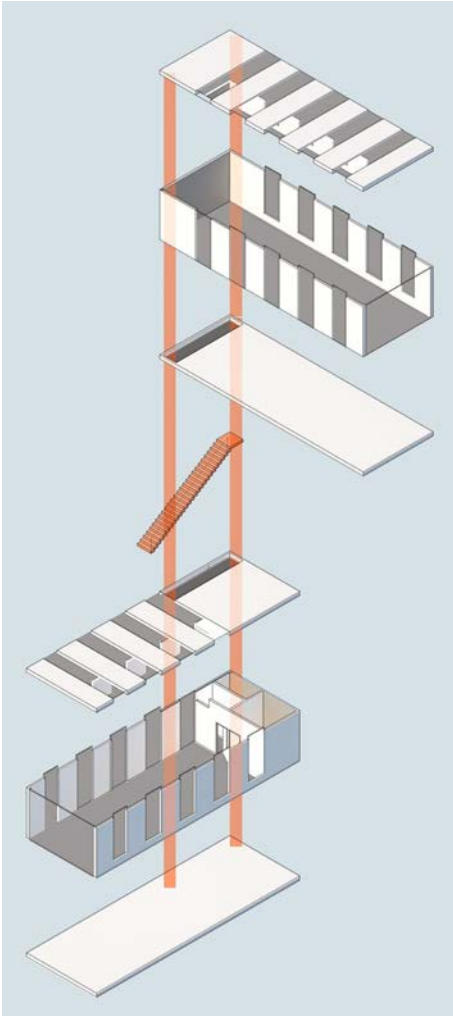


### DIAGRAM

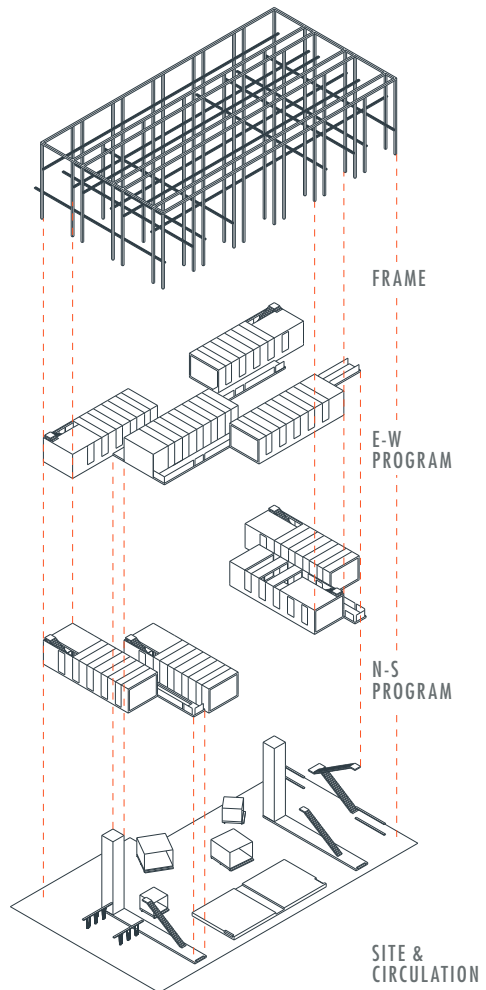
Vertical Module Connection



**MODULE**  
Exploded Axon

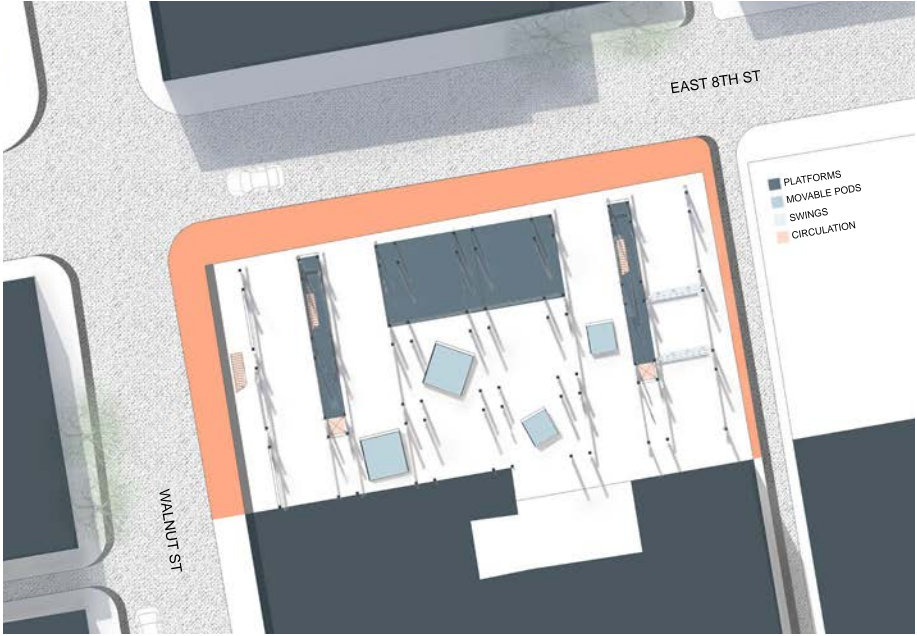


**EXPLODED AXON**  
Building systems



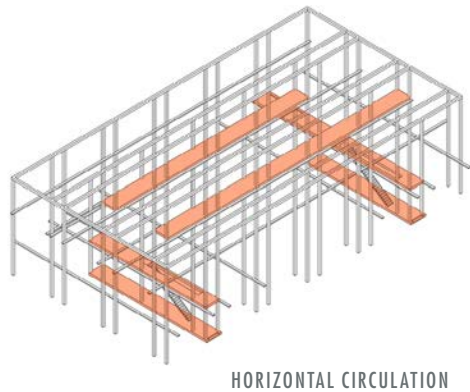
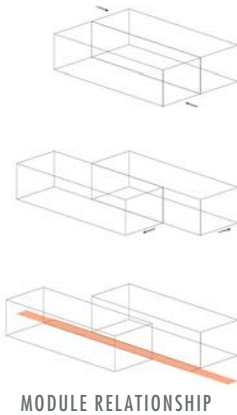
# SITE PLAN

## Open Plaza for Community Engagement

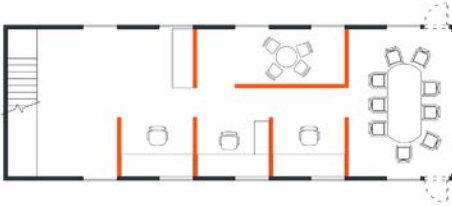


### DIAGRAM

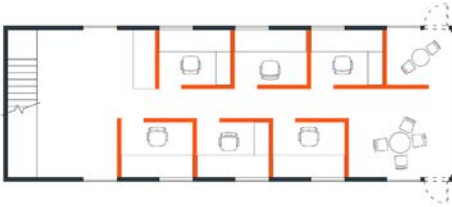
#### Adjacent Module Connection



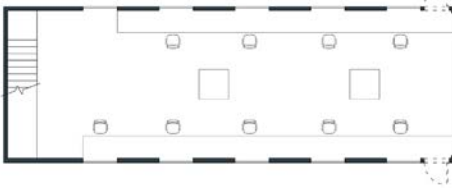
FLOOR PLANS  
Flexible Design Options



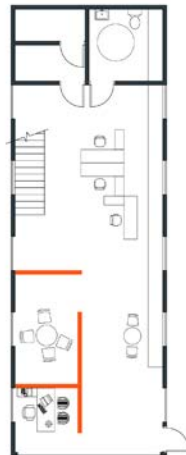
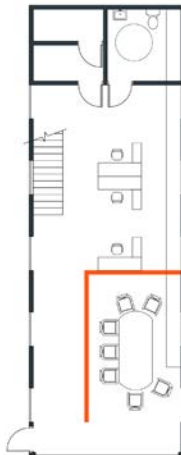
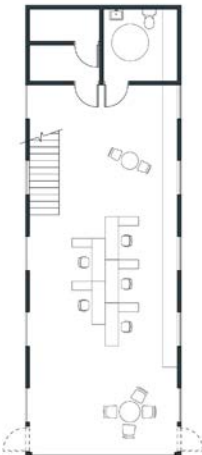
OPTION 1 - HYBRID



OPTION 2 - CLOSED OFFICE



OPTION 3 - OPEN OFFICE



## SECTION PERSPECTIVE

Interaction between modular units





## ADVANCES IN WORKPLACE TECHNOLOGY

# VIRTUAL MANIFESTATION

MATTHEW DAVIS

In a future where virtual spaces can materialize physically, companies will find ways to use this technology to meet the needs of a growing urban population.

Future cast - In the year 2030, 7 years after the completion of the Chicago - Cincinnati hyper-loop, Cincinnati will be experiencing rapid population growth as commuters from Chicago pour into the city looking for cheaper residential living arrangements.

And while technology transforms public transportation, so too will it alter the workplace.

The use of virtual reality technology — currently a niche resource for most companies — will eventually become mainstream as the tech becomes increasingly affordable and practical. This will increase the disparity between the intertwined and disconnected spaces of work with regards to technology.

By extrapolating a technological prototype developed by MIT in 2013, architects will soon be able to intertwine virtual realms with tangible environments. The device, known as “inFORM,” was outlined on MIT’s website:

“inFORM is a Dynamic Shape Display that can render 3D content physically, so users can interact with digital information in a tangible way. inFORM can also interact with the physical world around it, for example moving objects on the table’s surface. Remote participants in a video conference can be displayed physically, allowing for a strong sense of presence and the ability to interact physically at a distance.”

- Daniel Leithinger, Sean Follmer, Hiroshi Ishii

By the year 2030, this technology will be scaled up to encompass entire rooms. A real-estate firm — known as Virtual Realty — will utilize this technology for on-site tours of listings in the thriving downtown Cincinnati area.

PRECEDENT STUDY  
MIT "inFORM" experiment



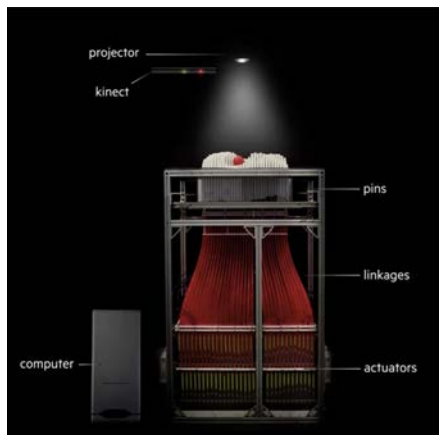
INFORM BEING USED BY TECHNICIANS AT MIT



KINEX SENSORS SEND THE SIGNAL TO THE DEVICE



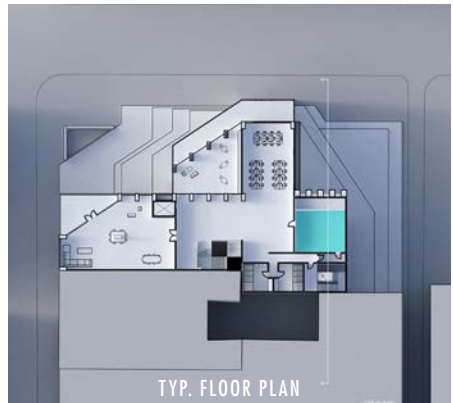
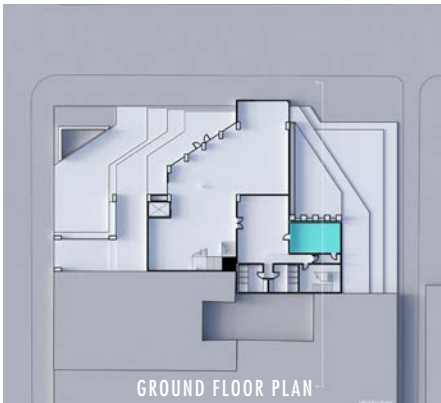
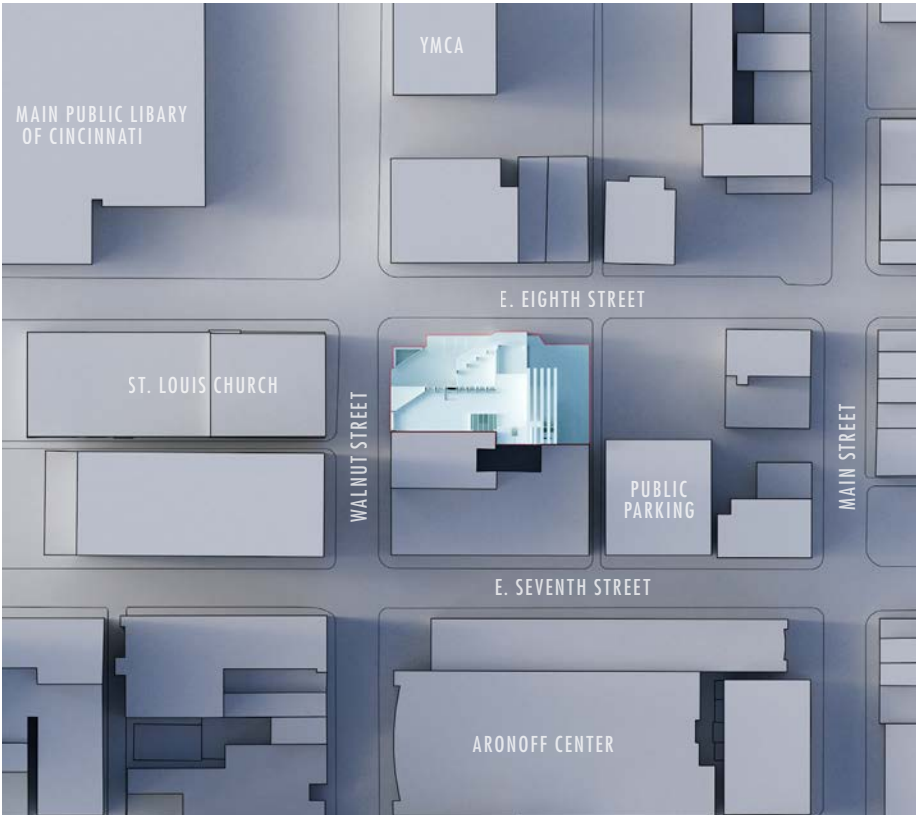
SMALL PEGS RISE AND FALL TO CONTROL THE BALL



THE DEVICE REQUIRES LARGE SCALE MACHINERY

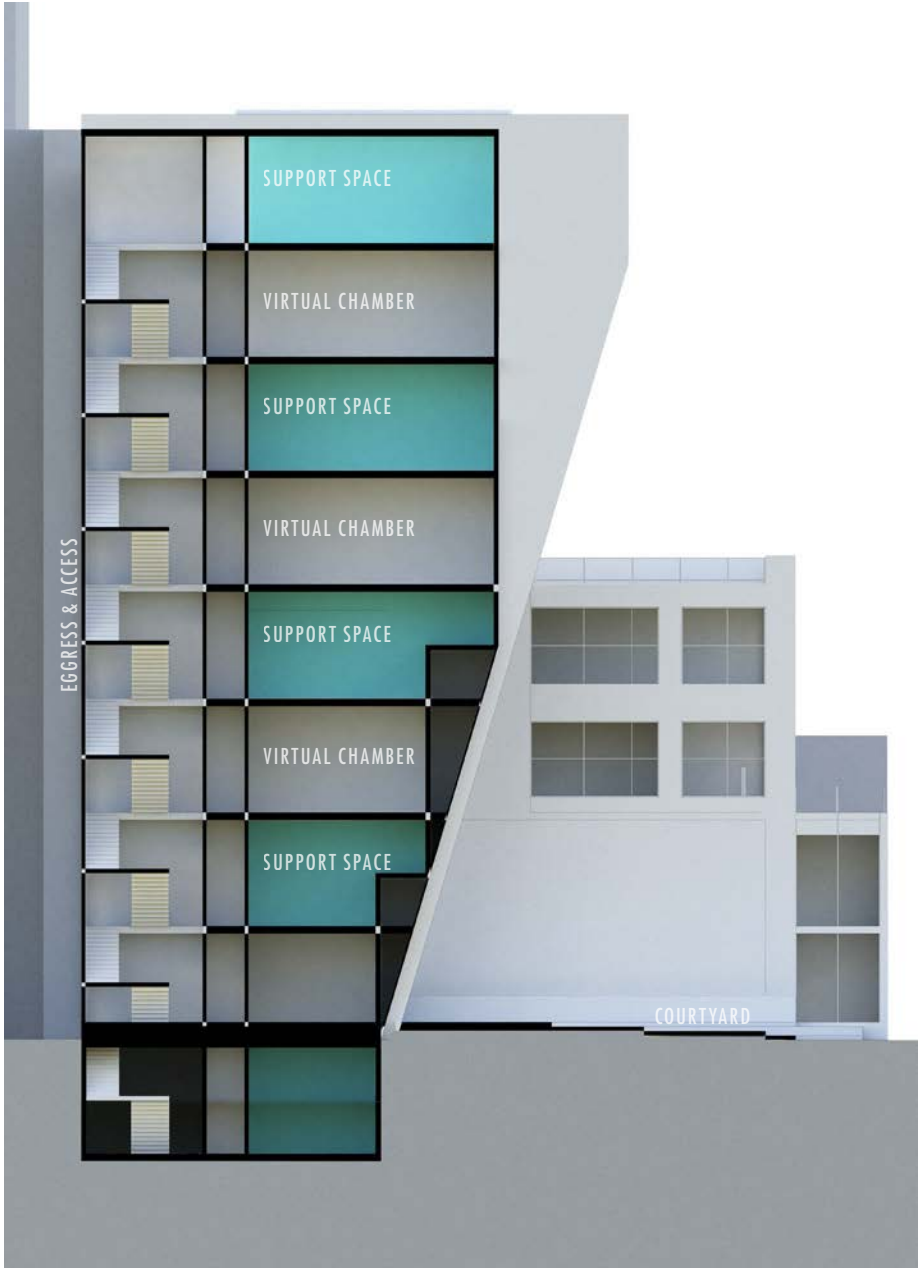
## SITE & PLAN

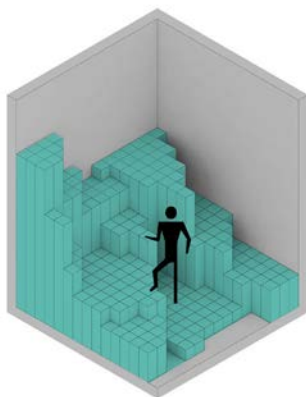
Cincinnati's downtown business district, space for 100-150 employees



SECTION

Tower of virtual experience chambers





## THE VIRTUAL SPACE

.....  
PHYSICAL INTERACTION MERGED  
WITH DIGITAL PRESENCE



## THE WORKPLACE

.....  
HEADS DOWN WORK AT A TRADITIONAL  
DESK ENVIRONMENT



## COLLABORATION SPACE

.....  
INFORMAL MEETING AND DISCUSSION



## DISCONNECTED SPACE

.....  
FLEXIBLE SPACE FOR INDIVIDUAL USE



EXTERIOR RENDERING  
View from the library

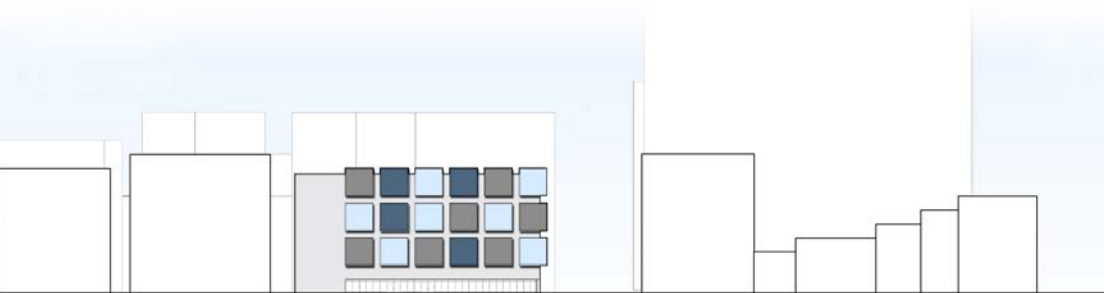




# DISCONNECTING FROM AN A COLLECTION OF DISTINCTION

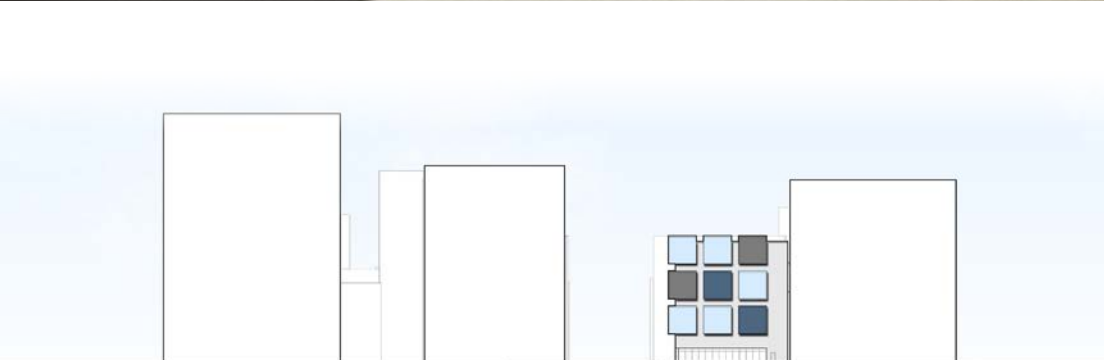
JOHN GARRISON

In a future where technology is continuously integrated with our environment and where work is able to be performed anywhere, what then becomes of the office? This project looks at how the workplace of the future will be a collection of hyper specialized spaces that enable users to perform specific work tasks optimally rather than if they were performed elsewhere. The office then becomes a desire rather than a necessity that provides social interaction, a sense of belonging, and defined work environments as benefits.



## EXTERIOR PERSPECTIVE

Modular spaces with large northern exposure.



### PRIVATE WORK AND AMENITY SPACES

Erratic form to emulate a collection of boxes arranged together whereas the program is kept consistent throughout.

Pushed towards the back of the building to allow for a large atrium space to open up the dense form of the building.

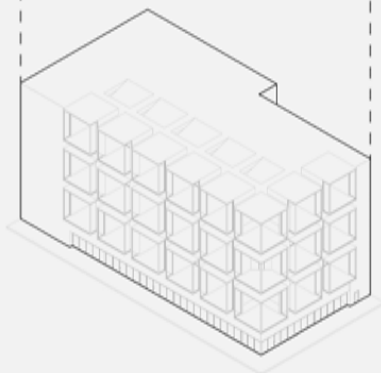
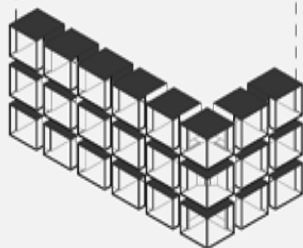


### HYPER SPECIFIC SPACES

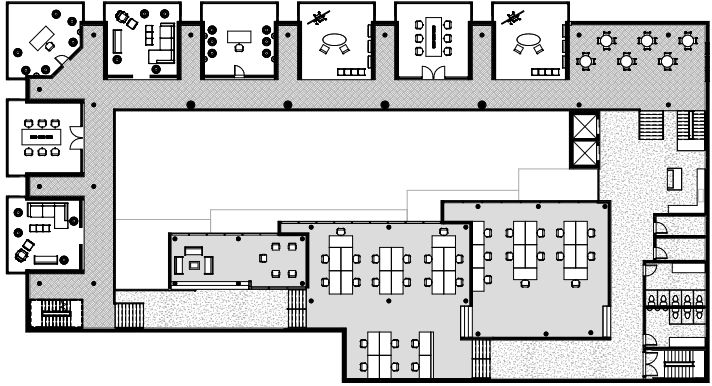
Pushed to the exterior for the facade to display the programmatic arrangement.

Lighting, Temperature, Sound, Openness parameters are heavily specialized to augment the space to be optimal for a specific program.

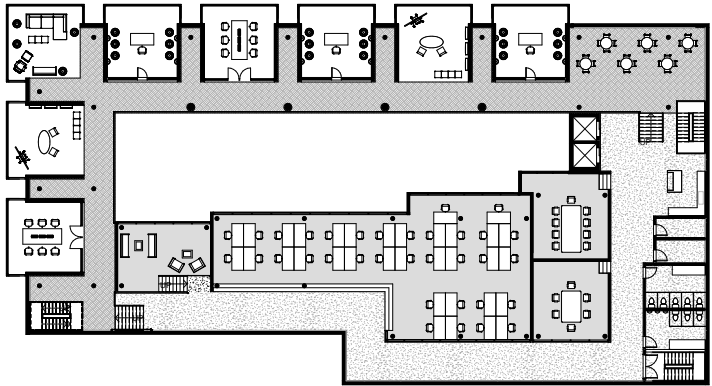
Heavily organized form while the program is more erratic depending on the specific needs of the interior space.



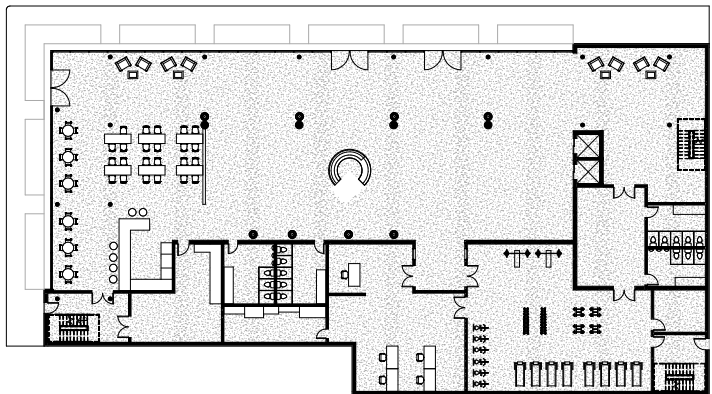
# FLOOR PLANS



LEVEL 3



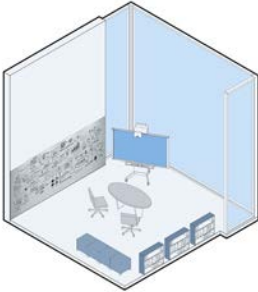
LEVEL 2



GROUND LEVEL

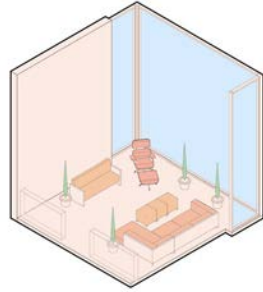
## EXAMPLE ROOM DIAGRAMS

Rooms augment the inhabitants experience to improve work performance.



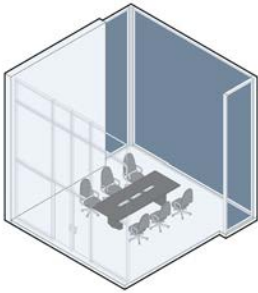
**INNOVATION SPACE**

Blueish/Vibrant lighting  
Cool Temperature  
Open to Distractions  
Visual Noise



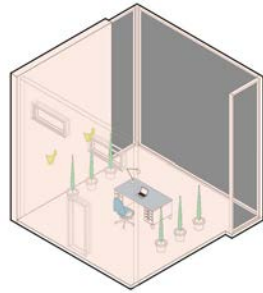
**DISCONNECT SPACE**

Warm lighting  
Warm Temperature  
Semi-Private  
No technology



**MEETING SPACE**

Blueish/Vibrant lighting  
Cool Temperature  
Semi-Private  
No Distractions



**PRODUCTIVE SPACE**

Vibrant lighting  
Cool Temperature  
Completely private  
No Distractions

## INTERIOR PERSPECTIVES

Atrium that ties individual working spaces together.



# TECHNOLOGY'S IMPACT ON THE WORKPLACE

## CONDENSE

HANNAH JOHNSON

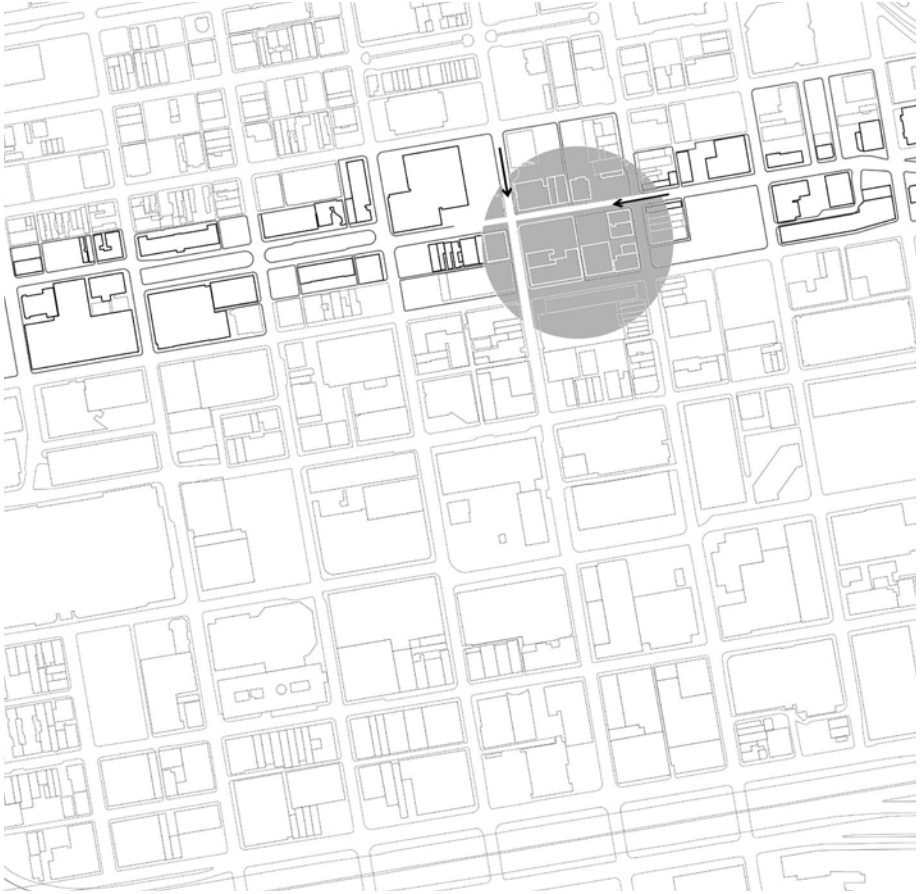
Addressing the issue of technology through an interaction standpoint. We see today that people become increasingly isolated due to technology. By creating a program and built environment based off creating interactions, technology can begin to bring individuals together rather than isolate.

One of the fastest advancements in technology today is rapid prototyping. This allows for quick iteration and reception of thoughts. It is easy and cheaper to customize rather than create duplicates. In the future this will lead to mass customization rather than mass production as we see today. Allowing for even the mass produced items, like cars, to be customized by the individual. However customization takes increased communication and iteration.

In order for buildings to combat this they must include all the features necessary to produce such items. By combining production, design, and retail into one central building with technology as the backdrop to allow this condensed workplace to transpire.

## SITE PLAN

Centered on a corner site in a dense urban setting it was important to active the corner



## SPACE RENDERINGS

Showing the three main programs in the space: design center, retail, and office space



DESIGN CENTER



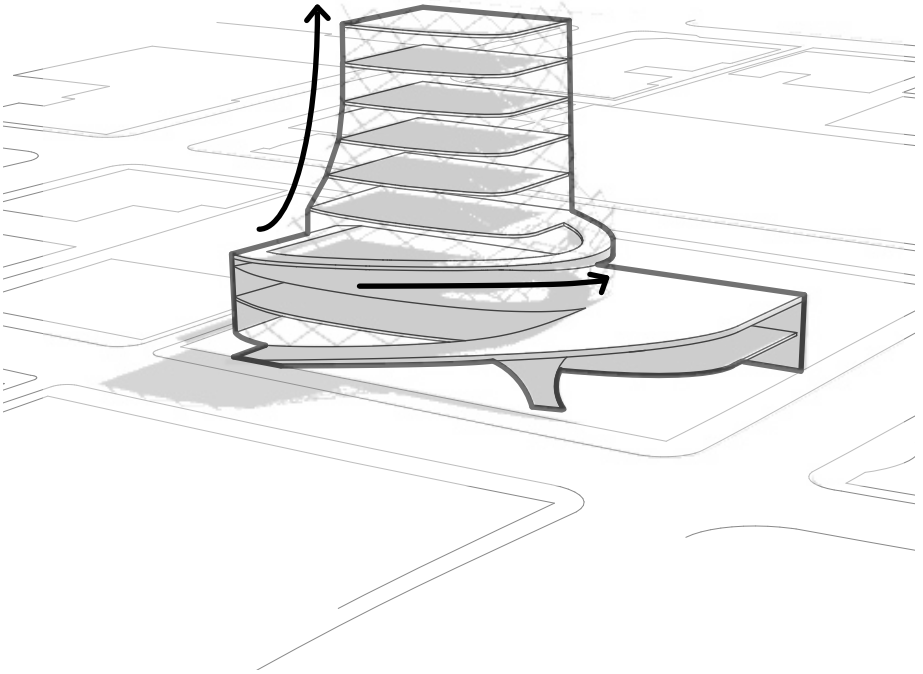
RETAIL



OFFICE SPACE

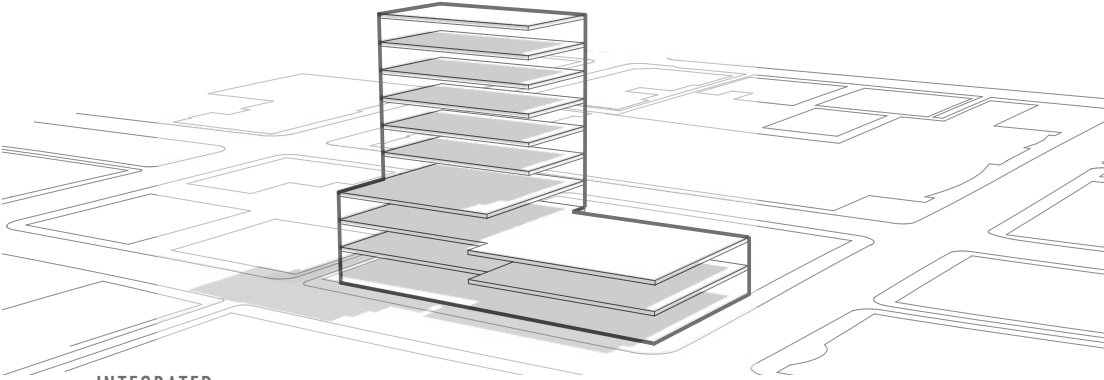
## PRIVACY

The office space is terraced inward from the base to react to square footage requirements. A screen is added to the office space to allow for privacy.



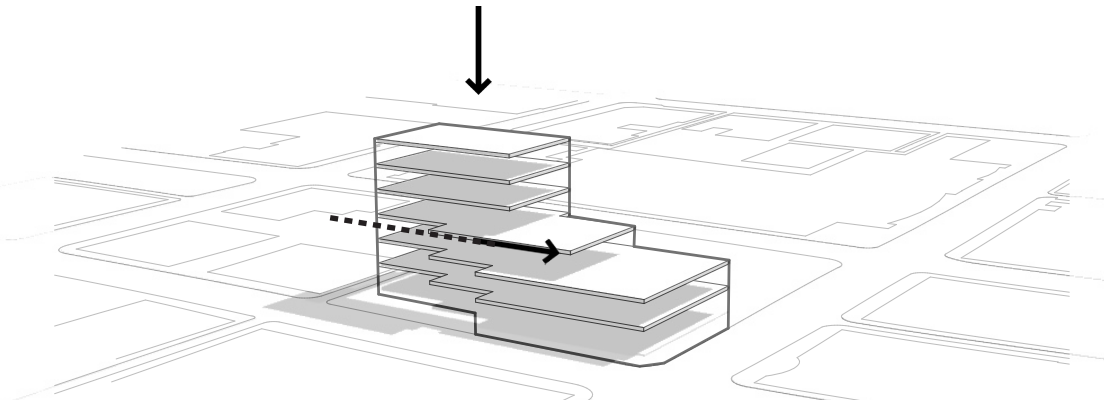
## PROGRAM

The program is separated into three different masses. The footprint is pushed to the boundaries which allows for maximum square footage overall.



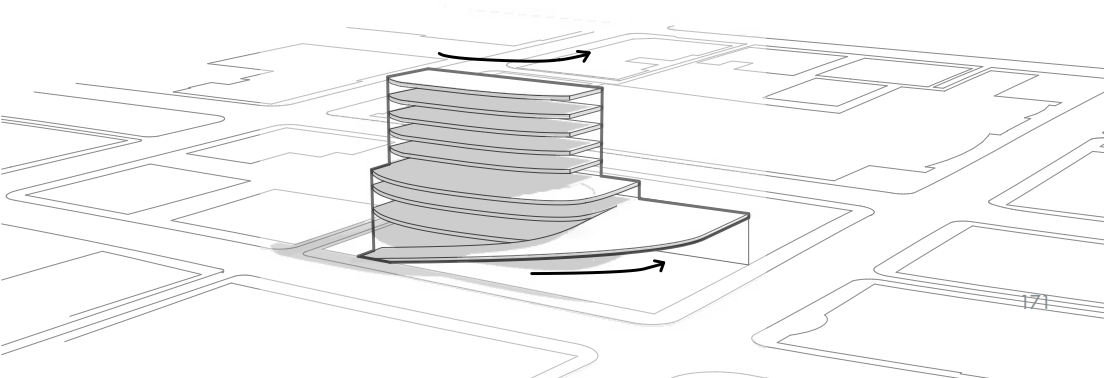
## INTEGRATED

The design center is pushed to the center allowing for it to be the connection between the retail and office space.



## CIRCULATION

The retail and office space are rotated in from the street to allow visual connection to the design center from the street level.





**SECTION**

Showing how the different levels of the building are interconnected



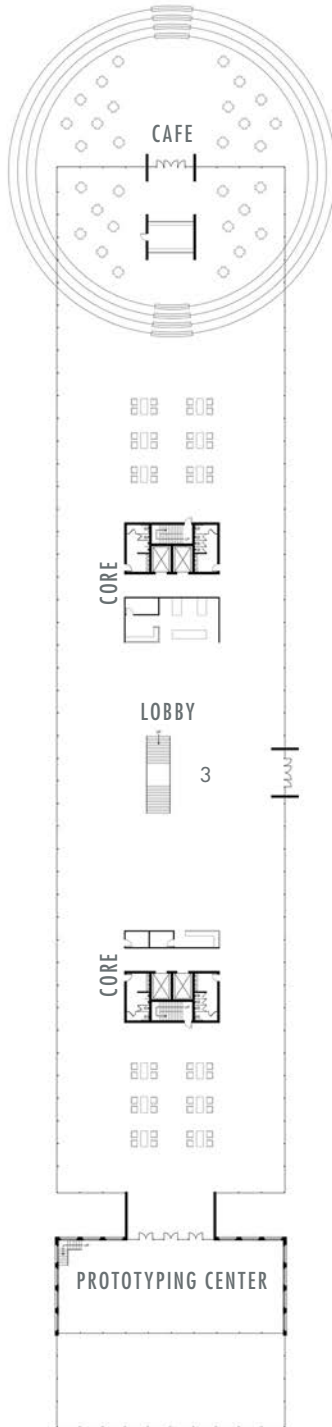
# ADAPTING A POST INDUSTRIAL SITE FOR THE CAMPUS OF THE FUTURE INTEGRATION

NORMAN KERR

By the year 2030, corporate headquarter buildings and campuses will cease to exist due to company longevity and building life spans. As a result, there will be a great increase in freelance workers and a system of coworking spaces will begin to populate areas all over the country. This design provides workers with everything they may need to be productive in a fast paced world. The building features a prototyping center that allows for all occupants to create models and full scale mockups with ease and encourages research of the latest building technologies and strategies.



PLAN



## CAFE SPACE

The cafe space provides an informal work area and encourages networking amongst occupants.









### EXTERIOR PERSPECTIVE

Glazing along the entire ground level creates for a greater connection between interior and exterior spaces.



### SECTION PERSPECTIVE

Programmatic spaces are organized according to privacy. Open public spaces are located at the ground level of the building while private and closed off spaces are located on levels 2 and 3.

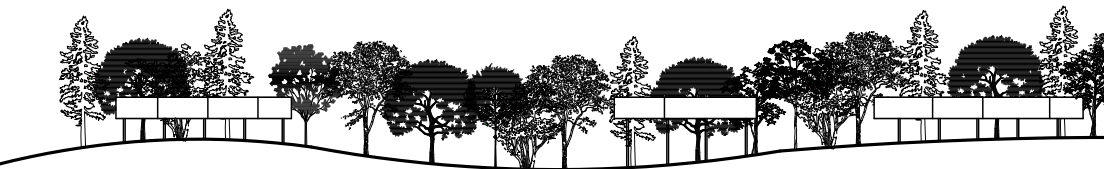
# NATURE AS A CATALYST FOR AN URBAN CAMPUS RE-GROWTH

KATLYN MABRY

In the future, we face a shortage of urban green space as the built environment continues to densify and new buildings claim the remaining vacant land in the city. Office buildings sit at the core of this change and are therefore directly impacted by it. This proposal removes the office from this sort of metropolitan congestion and replaces it into a post industrial neighborhood turned nature preserve. Central to this proposal is a hub and spoke organization where the hub consist of three central office buildings and the spokes are a variety of smaller structures supporting employee amenities.

## SITE SECTION

Buildings maintain consistent elevation above the forest floor to preserve the natural ecology on the ground.





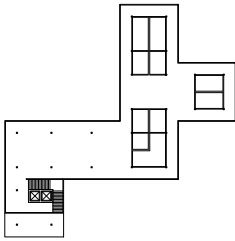
## EXTERIOR PERSPECTIVE

Minimal depth of floor plates & exclusive use of glass for the envelope blur the boundary between interior and exterior.

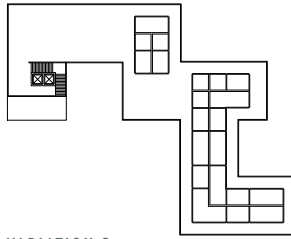


## PLAN CONFIGURATIONS

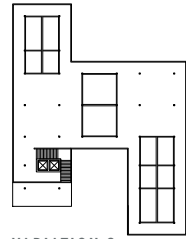
Buildings change in scale depending on program and site conditions



VARIATION 1



VARIATION 2



VARIATION 3

Amenities include a small market, day care, gym, and laundromat, that can be used by employees and people of the community. The site is connected by walking paths that can be used by employees and the community. The office buildings are designed to allow for adequate sunlight into every part of the building as well as fresh air flow. Each up building has been raised to allow for minimal ground intervention and a continuous forest floor.

## SITE STRATEGY

Program is dispersed through site to minimize local impact on the environment.



# MANAGING SECURE SPACES

## CLEARANCE

CHRIS MERCHAK

Clearance is designed for a future where people have integrated smart technologies in all aspects of their homes including locks, cameras, and thermostats. This building is designed for a Security Systems and Data Analytics firm that creates and monitors smart security systems for residential homes. The company has around 150 full time employees and has a freelance workforce that can add an additional 20 -100 employees at any given day.

The building services many different types of employees as well as clients and is separated into sections based on the security clearance levels of the people who occupy it. The Orange zones are the most secure areas of the building and are restricted for use by full-time employees only. The yellow zone is designed for the freelance workers. Freelancers do not have a permanent desk, but the pods can allow 1-6 workers to conduct business privately, alone, or in groups. The green zone is the lowest security area, which holds the public kitchens, firm wide gather/presentation space, and the client showroom.



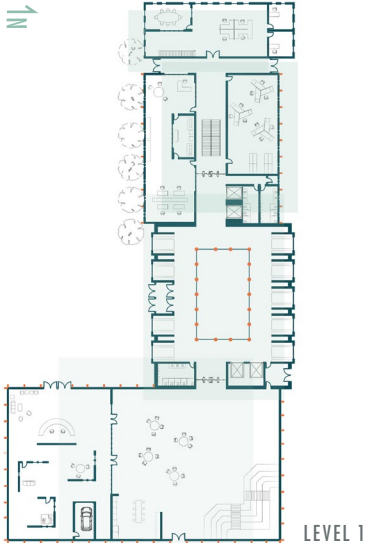
**EXTERIOR PERSPECTIVE**  
South facade and parking lot



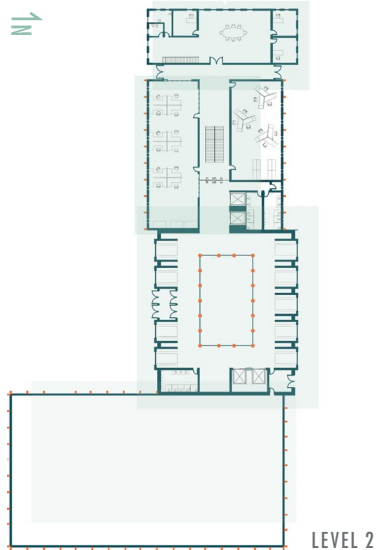
**SOUTH ELEVATION**  
All three building section and existing conditions



# SPRING GROVE AVE PERSPECTIVE



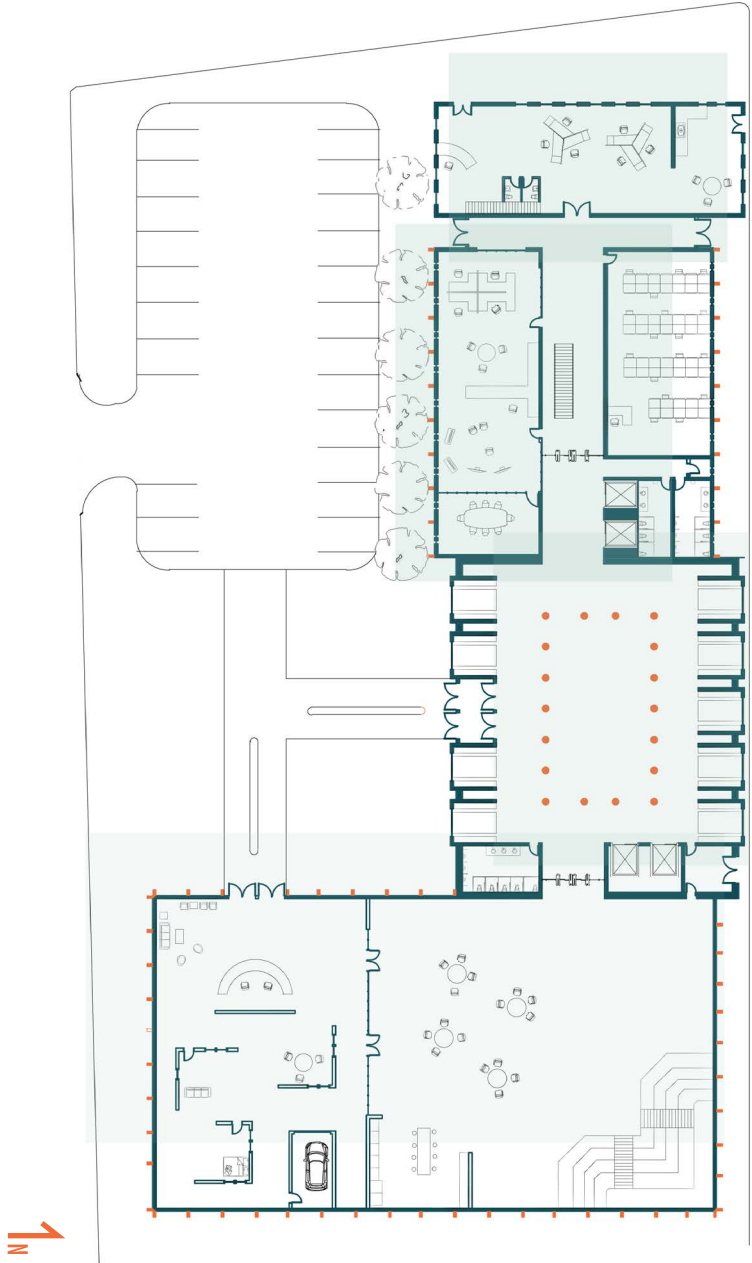
LEVEL 1



LEVEL 2

# SITE PLAN

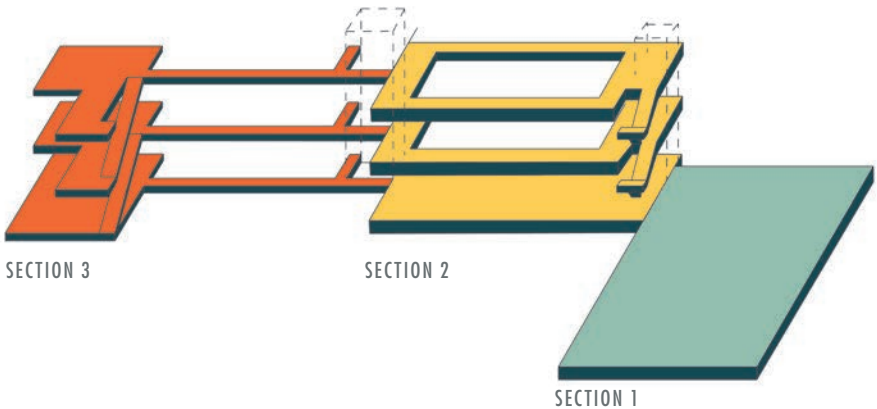
All three building section and existing conditions



**INDUSTRIAL SITE**  
3220 Spring Grove Ave

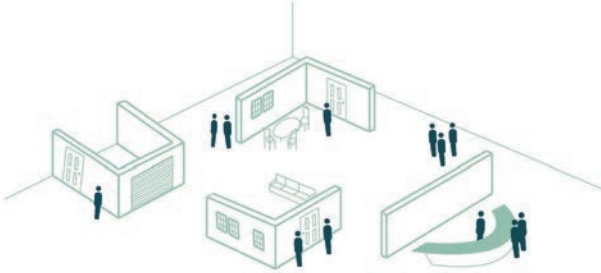


**PROGRAM DIAGRAM**  
Three distinct building sections with independent program



## SECTION 1

Low clearance, High access



- Customers
- Low Level Employees
- Freelancers
- High Level Employees

## SECTION 2

Medium clearance, Medium Access



- Freelancers
- High Level Employees

## SECTION 3

High clearance, Low Access



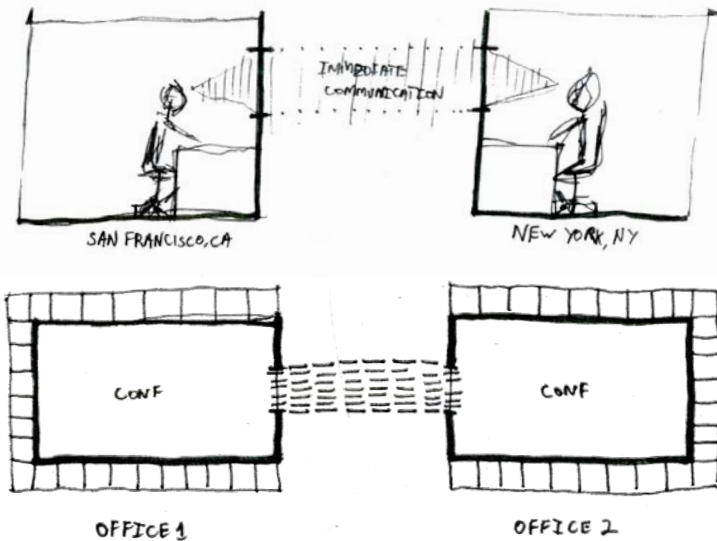
- High Level Employees

# A LOOK INTO KINETIC WORKSPACE SHIFT

OLIVER MULLIKIN

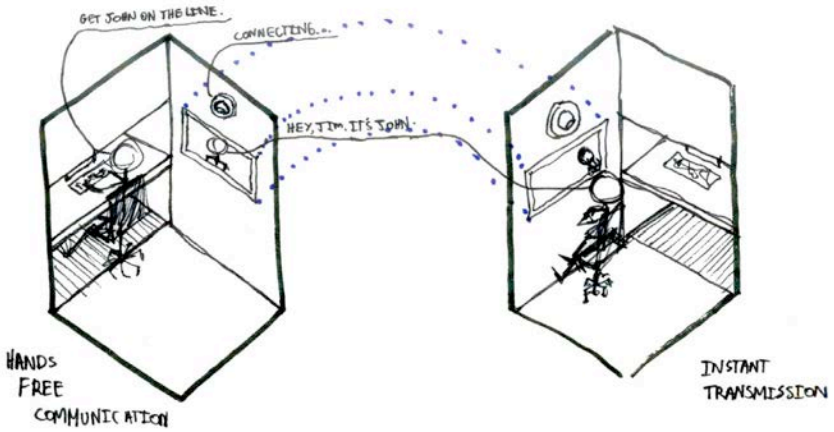
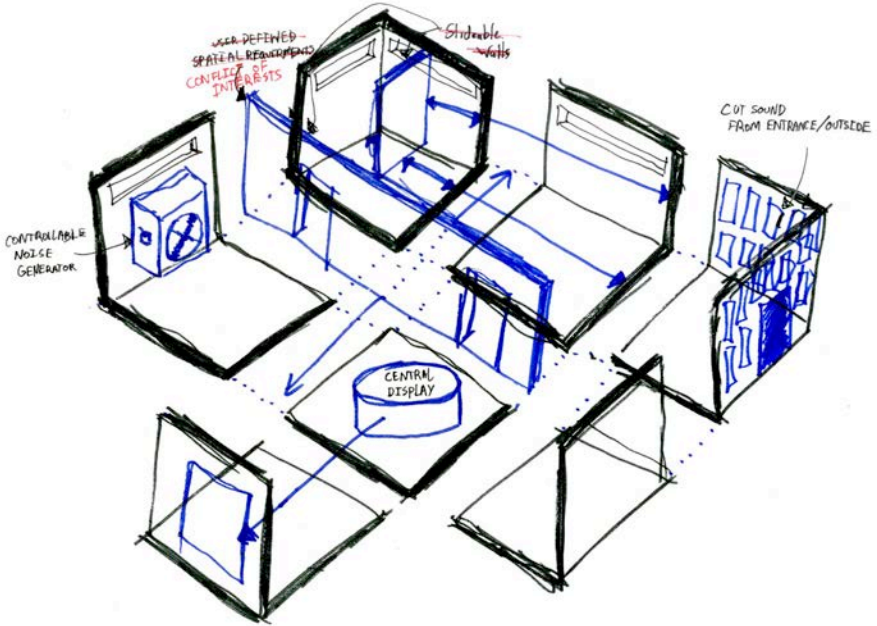
How can employees become more integrated with their work? With the traditional form of hierarchy seen in workplaces today, there is a loss of both communication and collaboration between employees, superiors, and production. It becomes necessary to branch away from the typical hierarchical design. SHIFT explores the exaggeration of an idea that places opportunity and iteration in the hands of individual employees.

## EARLY CONCEPT DIAGRAM



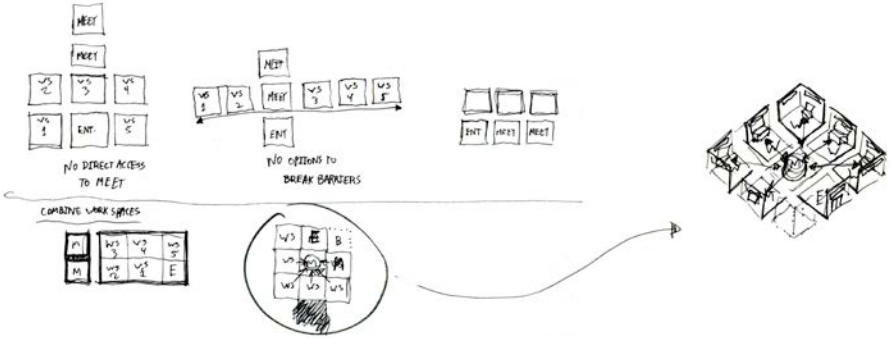
# CONCEPT CHARRETTES

Exploring ideas behind enhanced communication



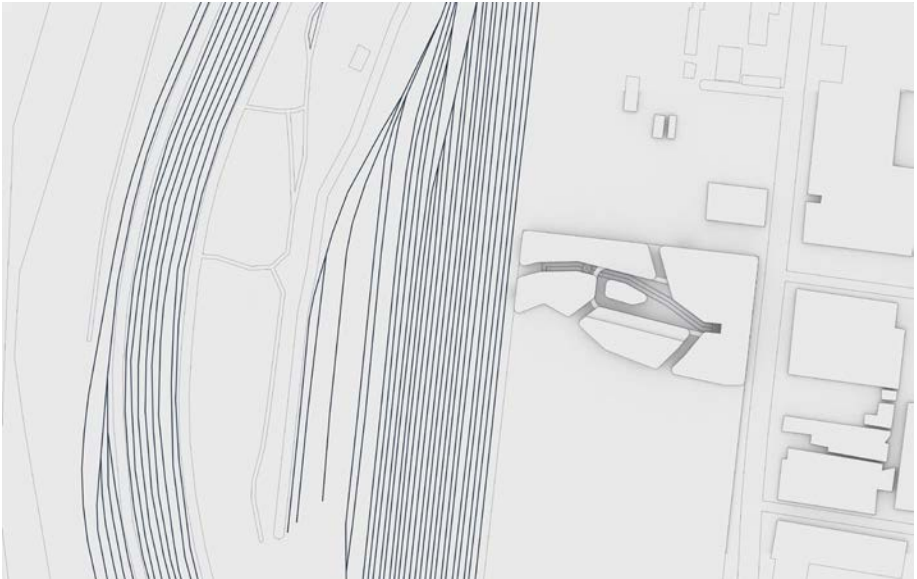
# CIRCULATION THOUGHT PROCESS

How can everyone have access to everything?



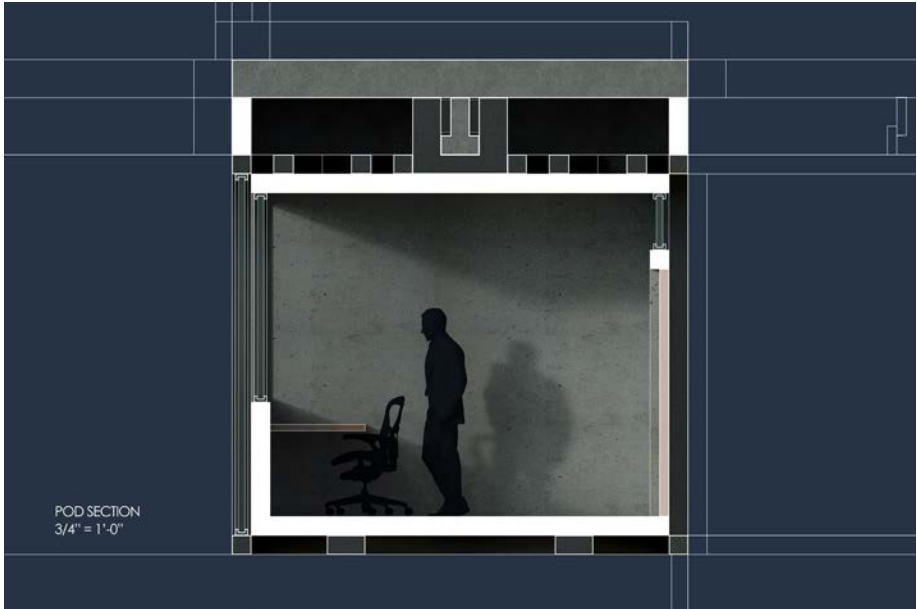
# RAILWAY SITE MAP

Cause for inspiration



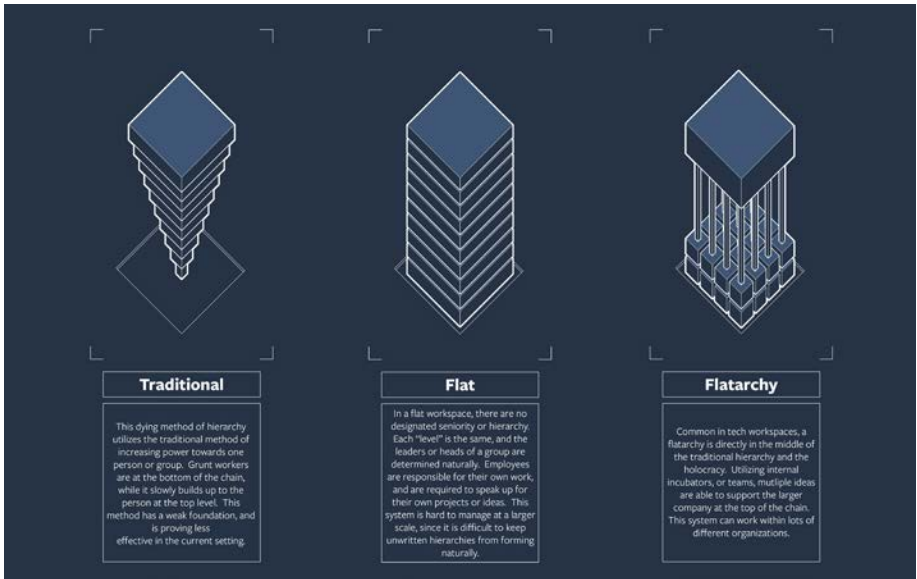
## PRIVATIZED PODS

Maintaining the option of solidarity



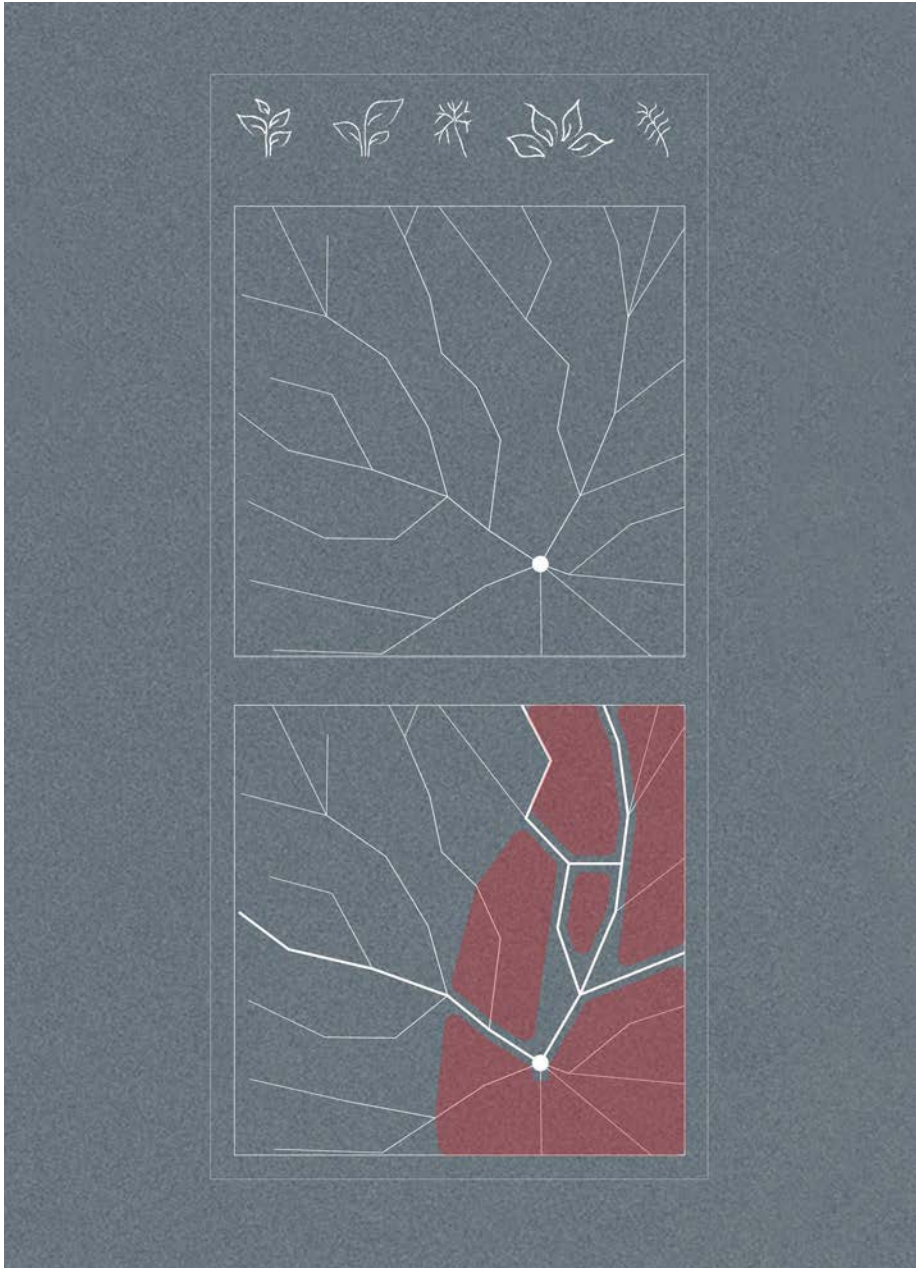
## HIERARCHY DIAGRAMS

Breaking from tradition



# SITE BRANCHING DIAGRAM

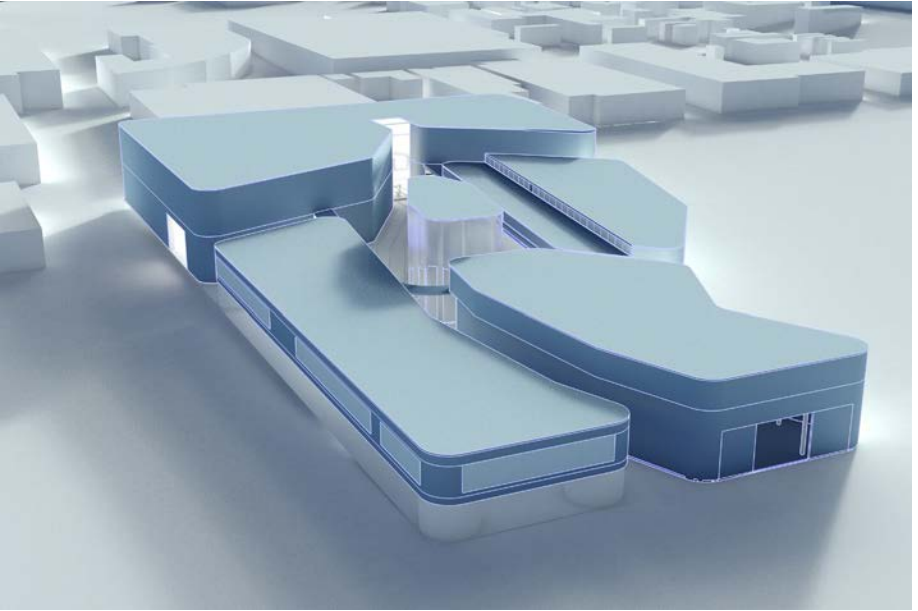
A strong contrast between natural and mechanical



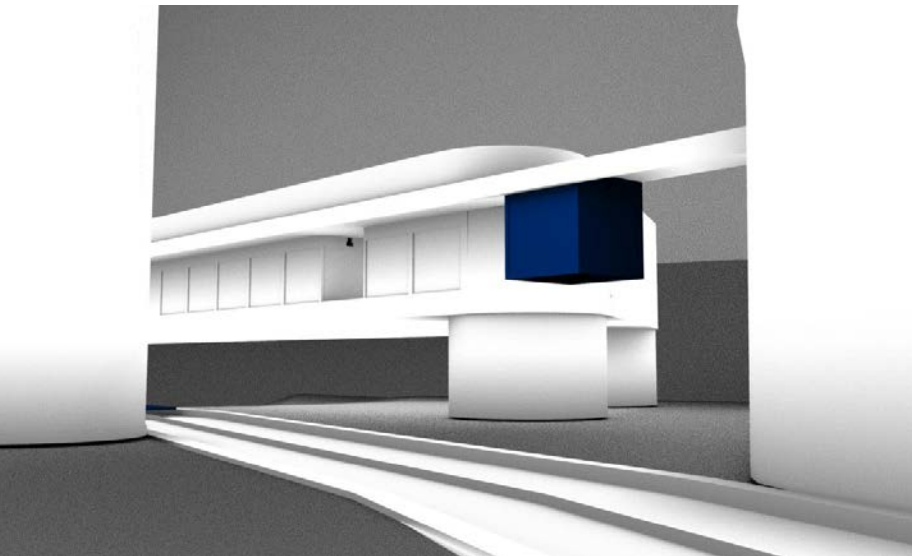
# BUILDING PLAN



AERIAL PERSPECTIVE



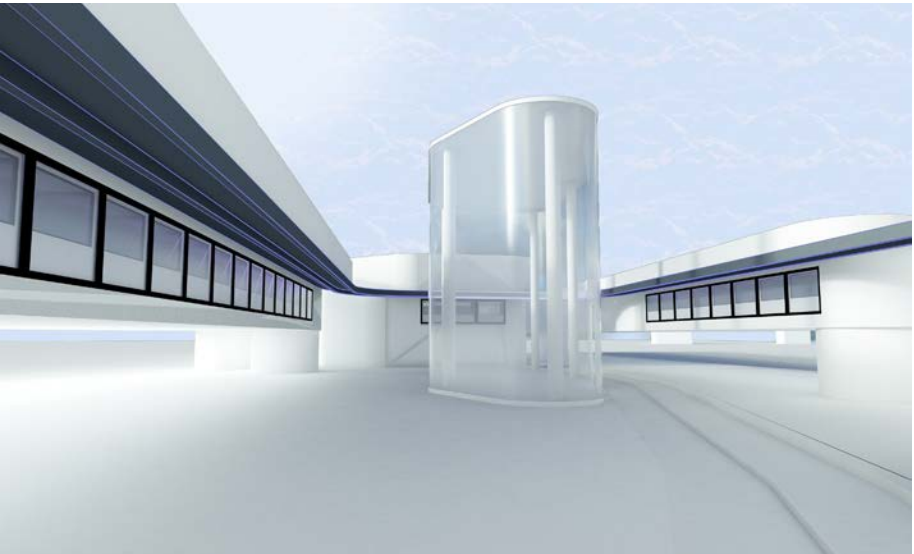
INTERIOR PERSPECTIVE



INTERIOR PERSPECTIVE



COURTYARD PERSPECTIVE



# A STUDY IN DISPLACEMENT

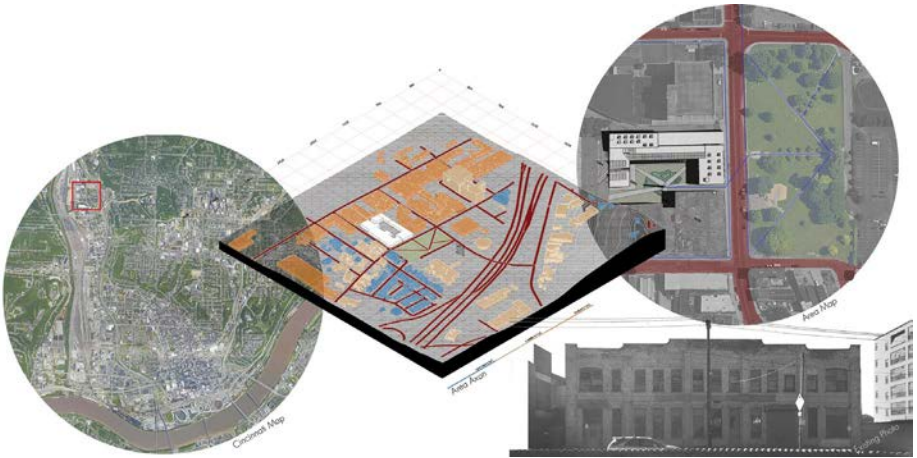
# VALVE

JONAH PRUITT

The future of work lies in rehabilitating and reinvigorating our displaced neighborhoods, people, and architecture. Valve is a workspace in Camp Washington made to grow and change with the neighborhood while operating in the old Powell's Valves No. 2 building on Colerain Avenue. Large, open spaces and courtyards are designed to encourage new interactions and blend the lines between work, community space, workshop, coffee shop, bodega, and park. Over time, as the nature of work changes in ways we can scarcely predict, Valve seeks to remain a backdrop and space for labor to become something more permanent than a job: a community.

This project attempts to address the blight of abandoned buildings that are present in Cincinnati and many cities across the Midwest. In total there are around 2500 abandoned buildings in the Cincinnati area, and Camp Washington has a fairly high concentration of industrial brownfields and vacant factories. The people who live in Camp Washington have seen their neighborhood splinter and fragment over the years since its time as the industrial center of Cincinnati. The addition of a small scale offices can help redensify the neighborhood and make Camp Washington another center in a polycentric city. The public park cloister that Valve creates can extend the livability and public space of Camp Washington. As needs of work change or work becomes obsolete, Valve can transition to being a community center and anchor of neighborhood activity.

**PROPOSED SITE**  
The Camp Washington Site

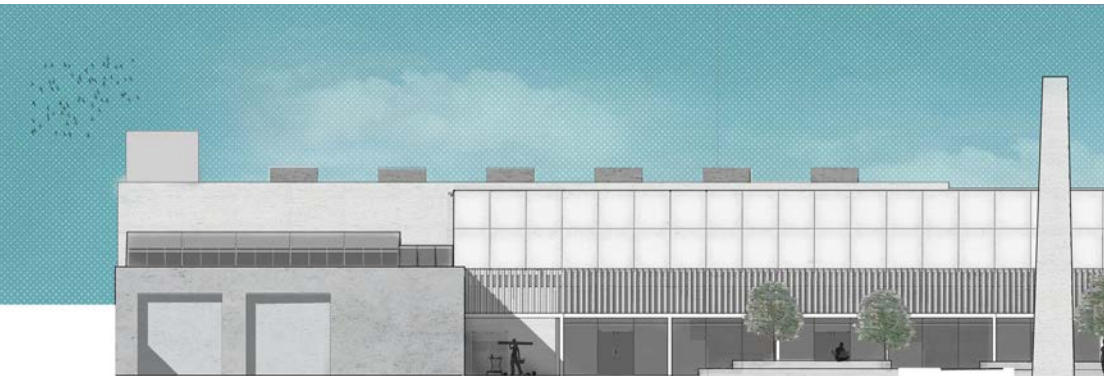
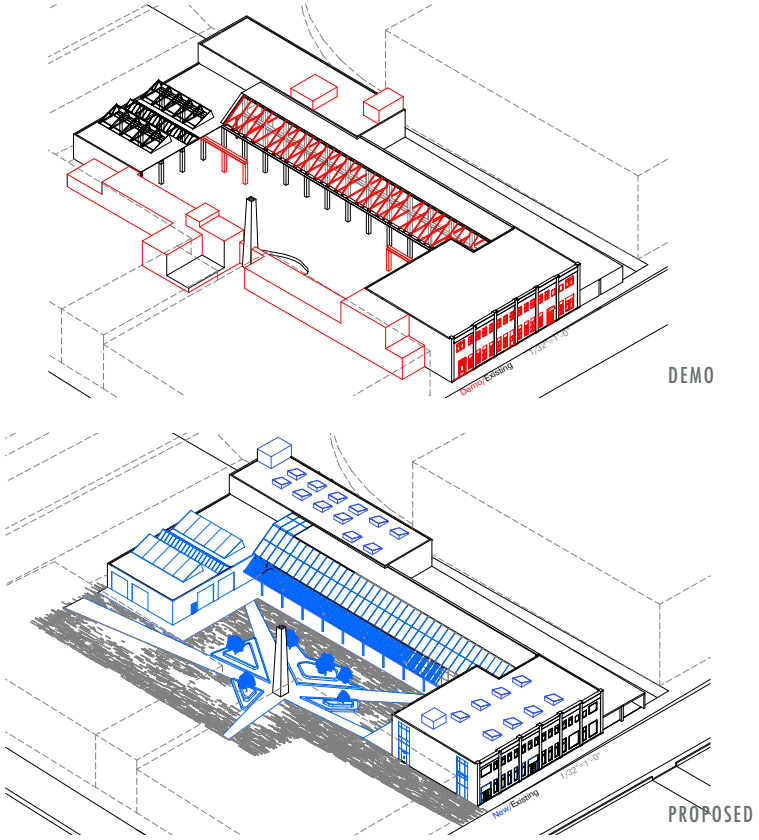


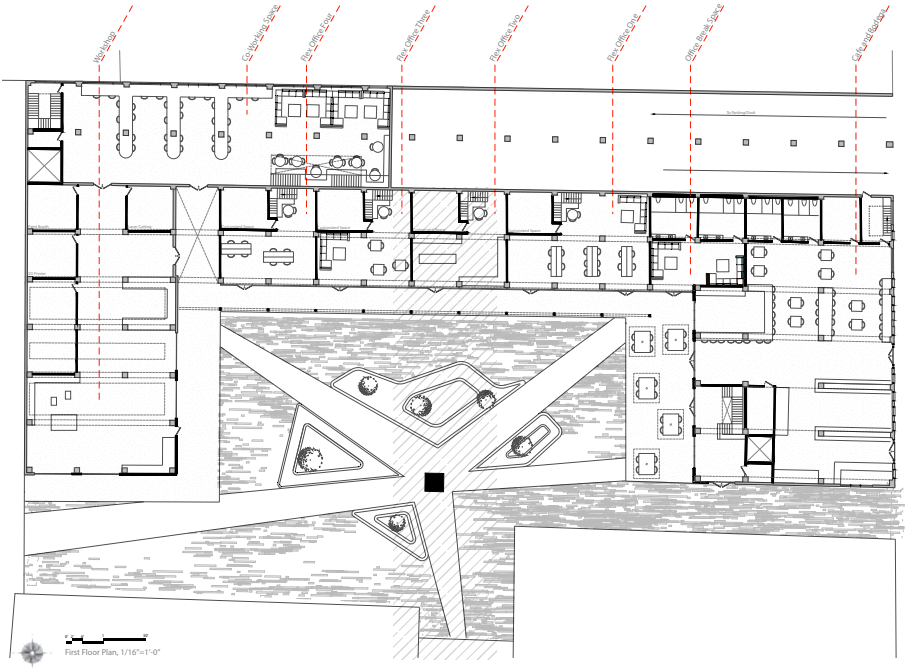
**CAMP WASHINGTON**  
Notice the gaps in the neighborhood fabric



# OLD VERSUS NEW

Subtracting damage and wrapping with new skin

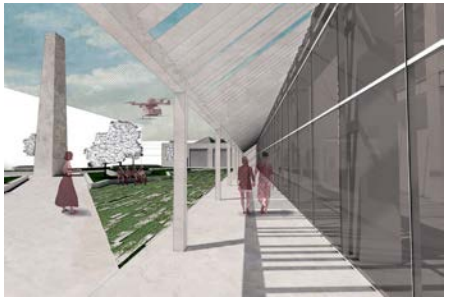


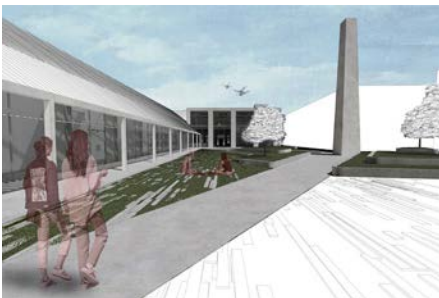


FIRST FLOOR PLAN



ENVIRONMENTAL CONDITIONS  
Perspectival studies





REFUGE IN THE URBAN FABRIC

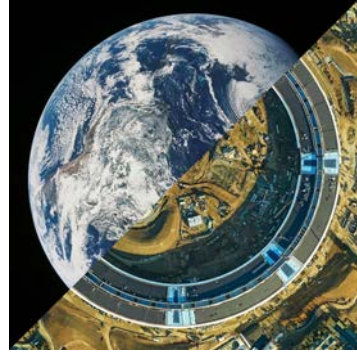
# THE SENSIBILITIES OF HUMAN OCCUPATION

JAY SCHAIRBAUM

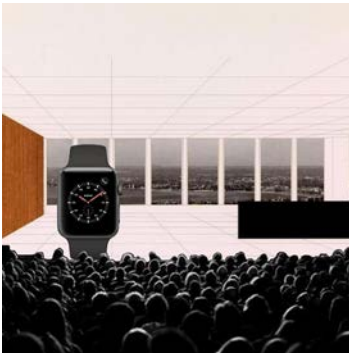
The innate singularity found in human behavior presents the necessity for occupied spaces to reflect the personalities of those who work within. Future outlook envisions a solution that finds refuge in the urban fabric by stitching together converging neighborhoods and city inhabitants. Despite an increase of automated systems in the workplace, the 40+ hour work week in America has remained persistent. This means that spaces designated as working environments must possess qualities expressive of human comfort and be desirable by nature. Future building techniques and a culture that emphasizes customization creates the opportunity to address variable workspaces that best allow individuals to carry out tasks. Architectural responses to this problem must be aware of human and urban scales and fit within the context of built and natural environments.



*paid for in part by the following*



*saving the planet?*



*is it 5 o'clock yet?*



*there's an app for that*

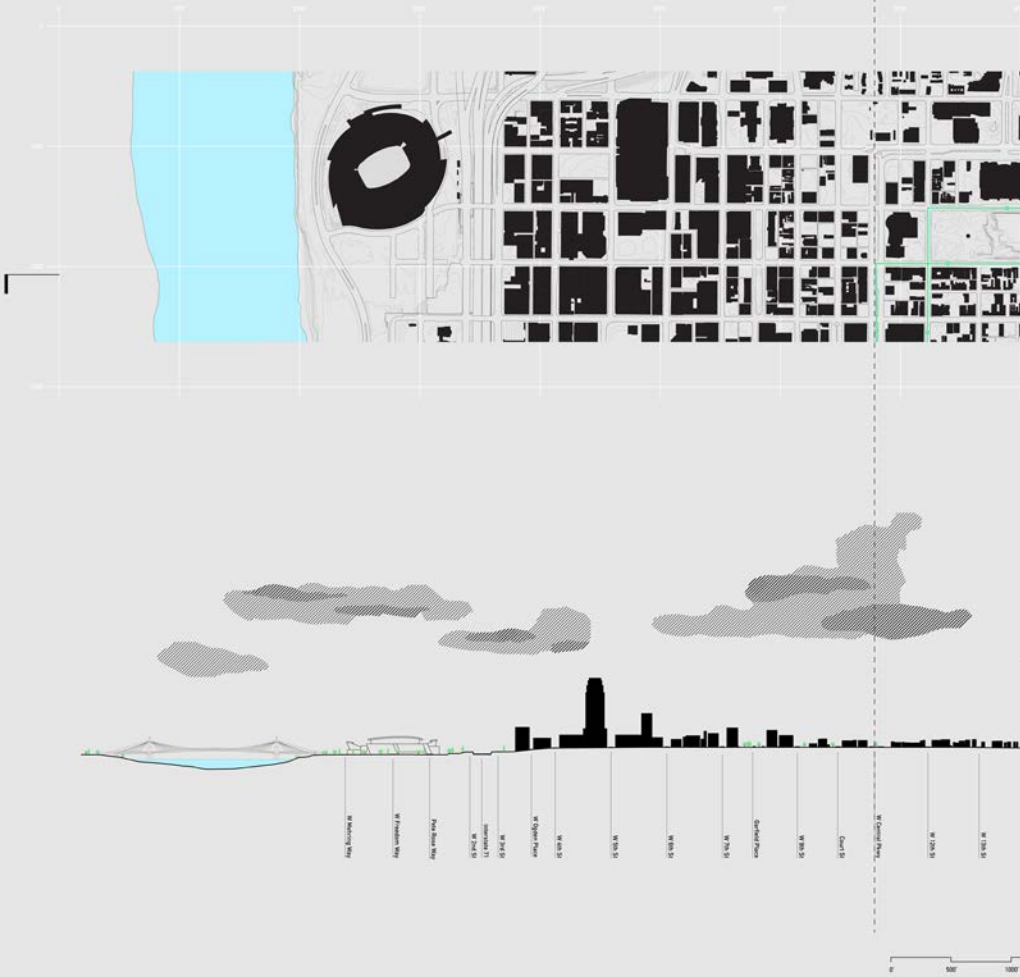


*I heard it's sandwiches for lunch ... again*



*but it's so nice outside*

## Central Business District





## SITE PLAN

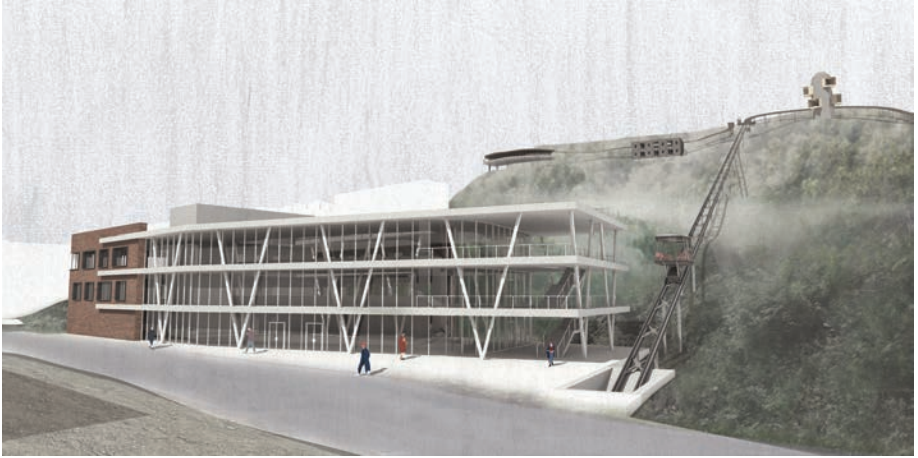
Building negotiate the steep terrain with programmatic intent



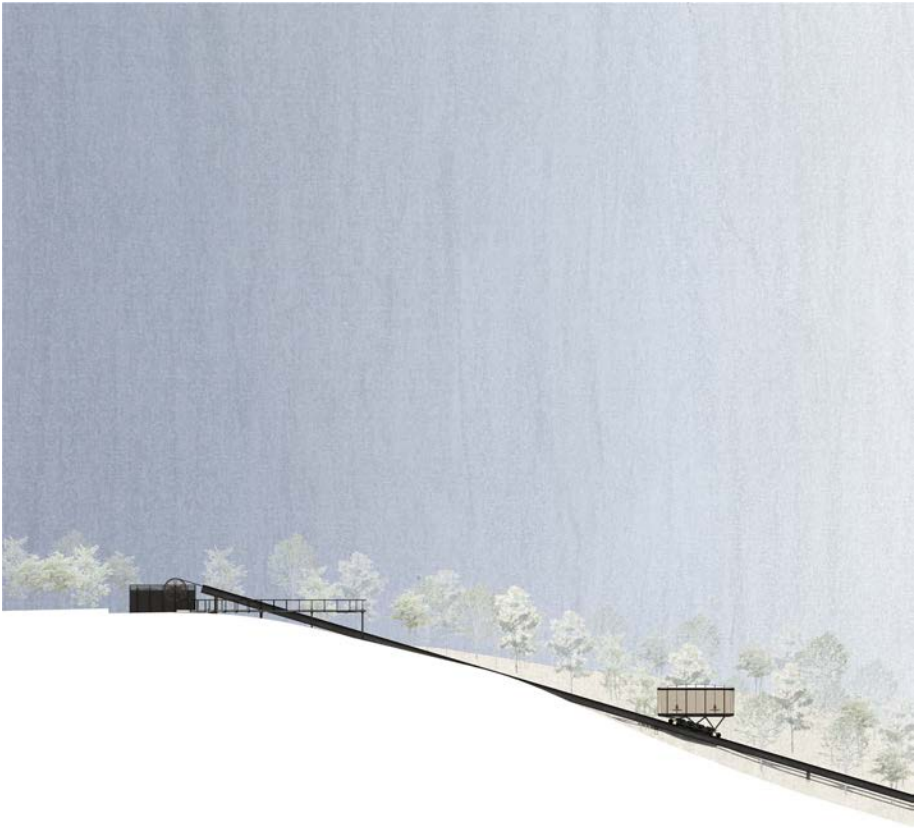
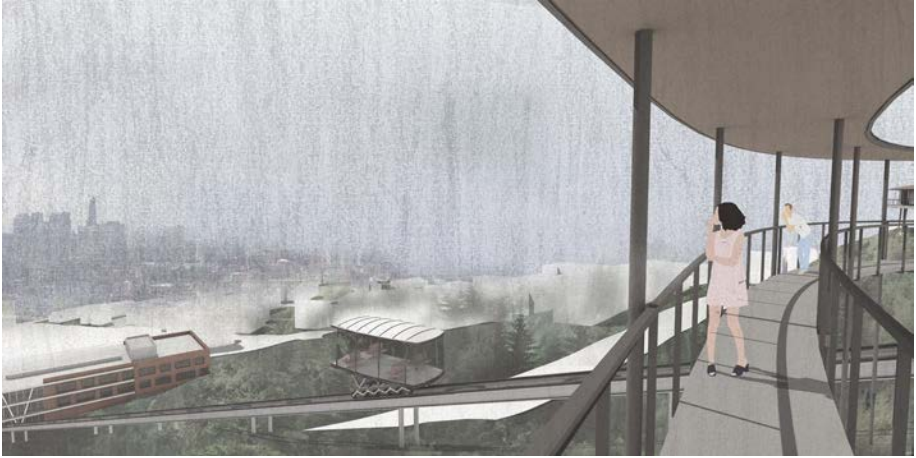
# AERIAL PERSPECTIVE

Funicular acts as an organizing spine





## MAIN HOUSE



## FUNICULAR



## CANOPY



## GARDEN



## TOWER



CAVE

# MODEL STUDIES

Bass wood, laser cutting, cnc milling





# CAMP WASHINGTON SOLAR FARM

## SOLHIO

EVAN SCHLENK

The year is 2030, and renewable energy has completely replaced fossil fuels. In order to provide regionally responsive service to its international customer base, BP, now branded as British Photovoltaic, has splintered into regional solar generating companies. These spoke organizations, based on 1980's Standard Oil subsidiaries, include SOLHIO, with headquarters in Cincinnati. This complex includes a 120 mw generating farm, PV manufacturing center, engineering, and administration.

The programming of the complex is arranged in a linear manner, north to south. The administration portion of the company, including accounting, sales, and marketing, occupy the northernmost block. The center portion of the tower contains the traditional core of the building along with all of the equipment and functions associated with solar energy generation. The southern portion of the tower houses the engineering and research and development divisions of SOLHIO. This block is divided into three mezzanine-arranged pods serving roughly 60 engineers. The base of the southern block houses a full fabrication lab for use by the engineers, with direct connection to the photovoltaic manufacturing facility.

This fully automated manufacturing center produces three hexagonal unit-based products that form the foundation of SOLHIO's business model. These are traditional photovoltaic panels, fiber-optic solar tubes for daylighting, and mirrored panels that, when arrayed as they are on this site, form a massive solar thermal power generation system.

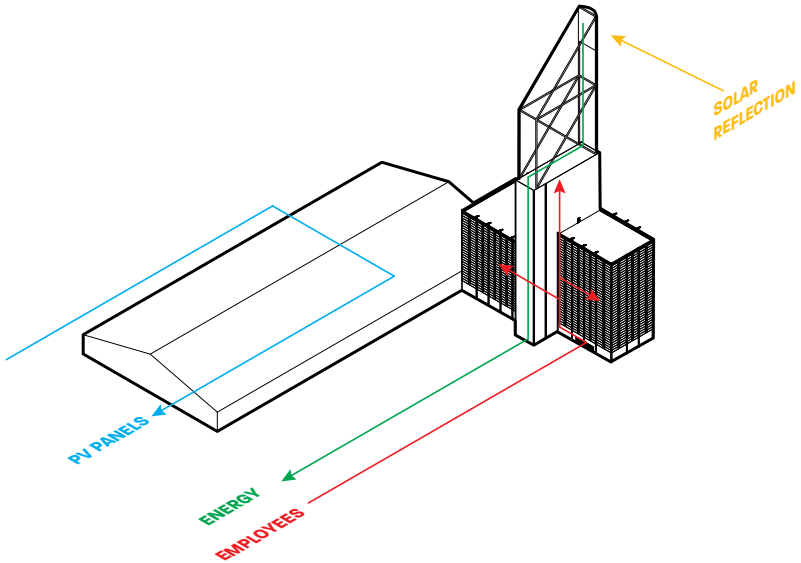
## ENGINEERING DEPARTMENT

An augmented reality table connects engineers with colleagues around the world in 3D.



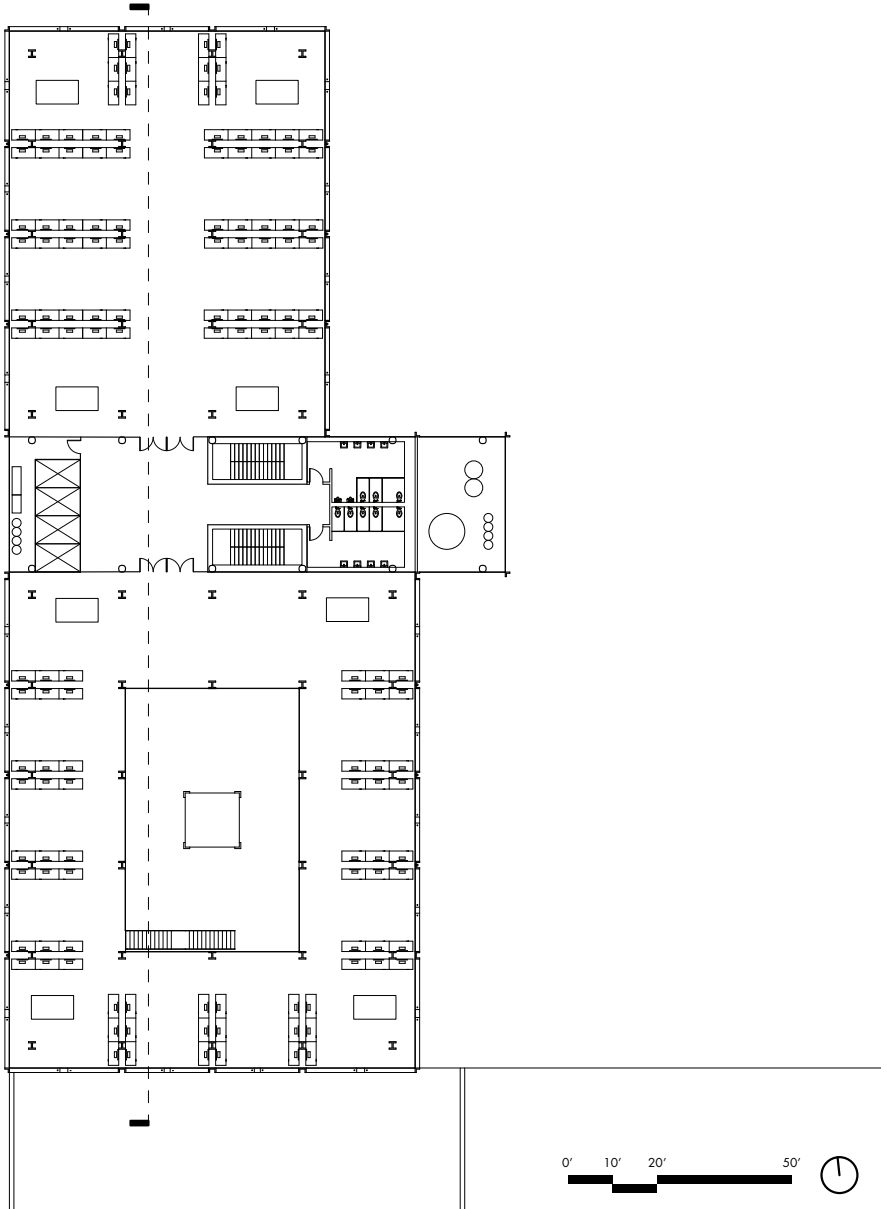
## DISTRIBUTION DIAGRAM

Convergences of manufacturing, energy generation, & employment



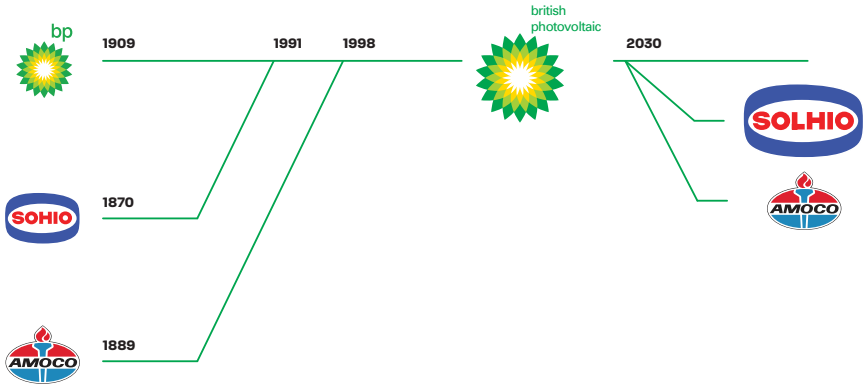
# FLOOR PLAN

Typical of floors two through seven.



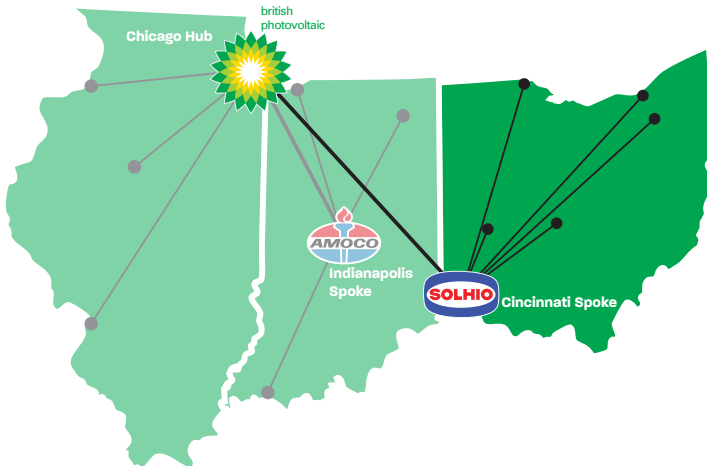
## BP CORPORATE HISTORY (+FUTURE)

Organizational acquisitions with future subsidiaries.



## MIDWESTERN SOLAR OPERATIONS

Geographic distribution of generating sites and major offices.

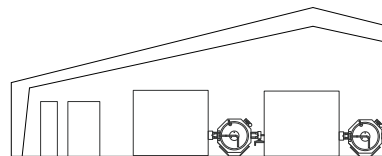


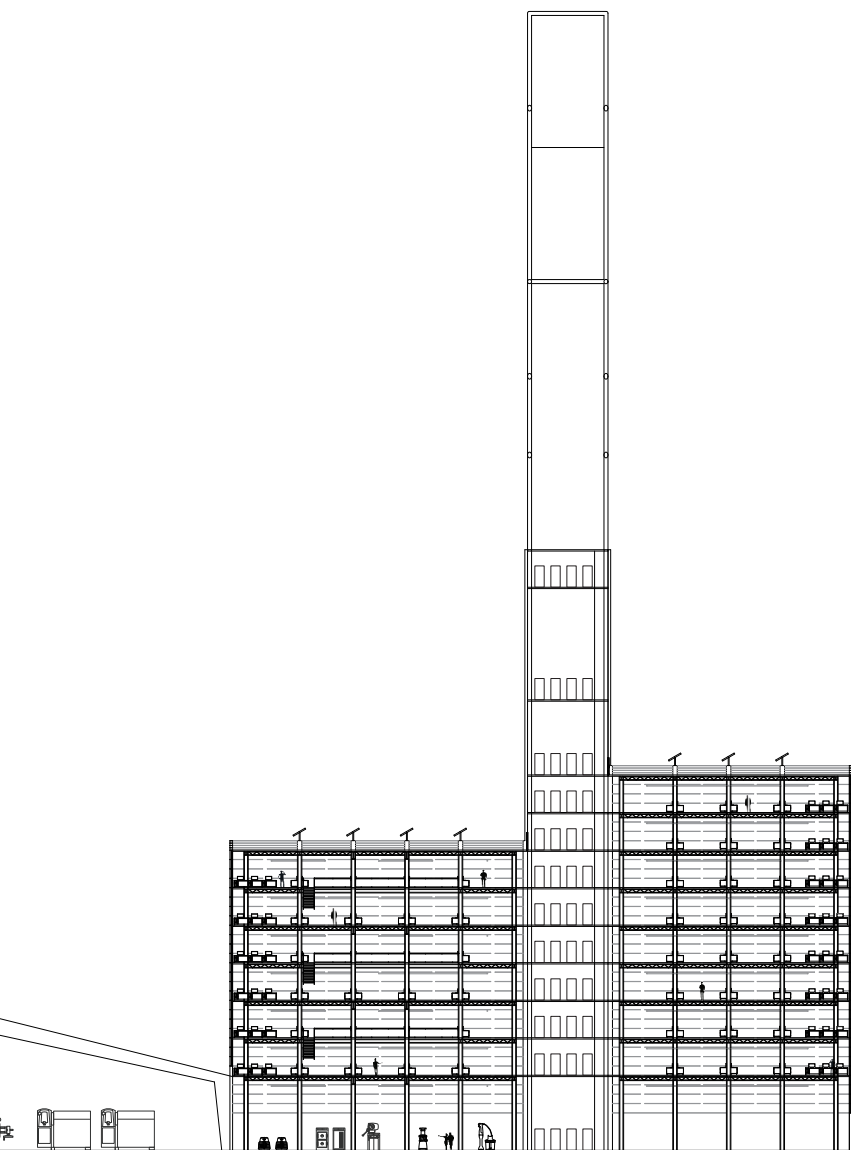
● Generating Site/Sub-Spoke

## LONGITUDINAL SECTION

Running north-south through workspace.

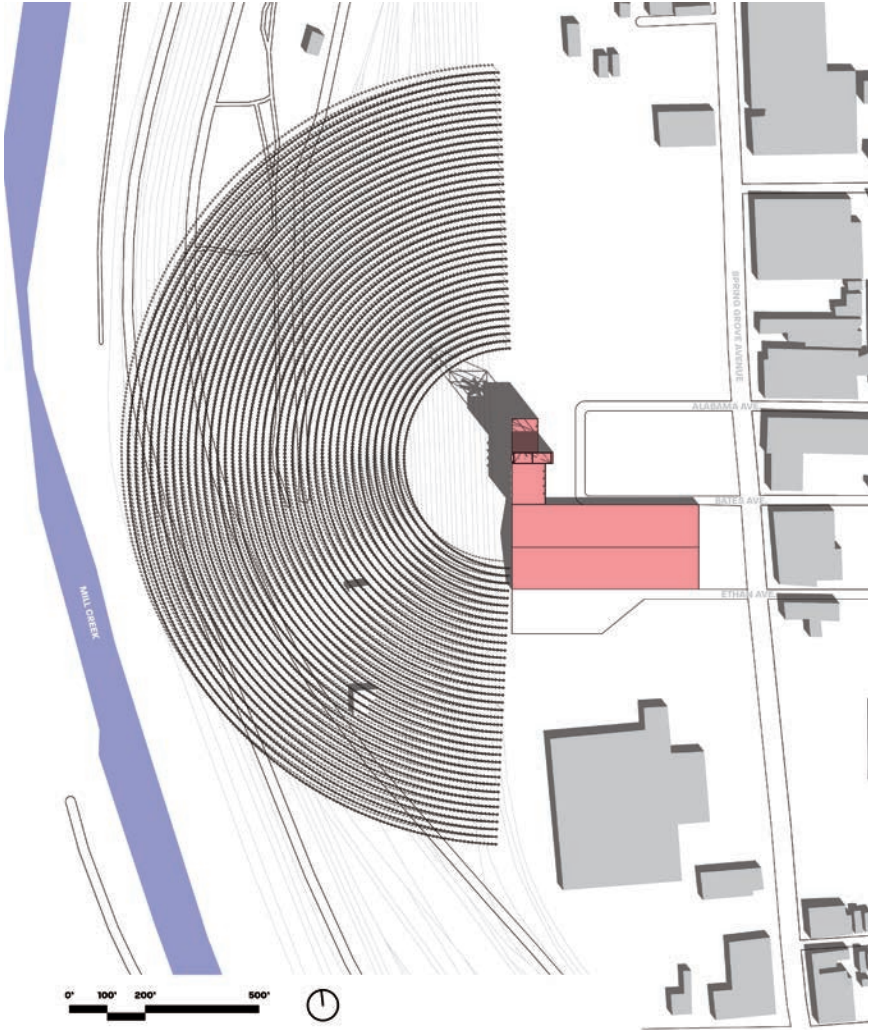
In section, the arrangement of the corporation's workflow becomes more apparent. The aforementioned linear workflow progresses right to left in this section. Photovoltaic orders are placed with the sales department, located in the administration portion of the complex, to the right of the drawing. From there, technical specifications are relayed to the engineering section, identified as the main level — mezzanine groupings to the left of the core. Engineers are then free to work through technical challenges in the fabrication lab, located on the first floor of the research and development block. When ready, orders are processed and manufactured in the fully automated factory.





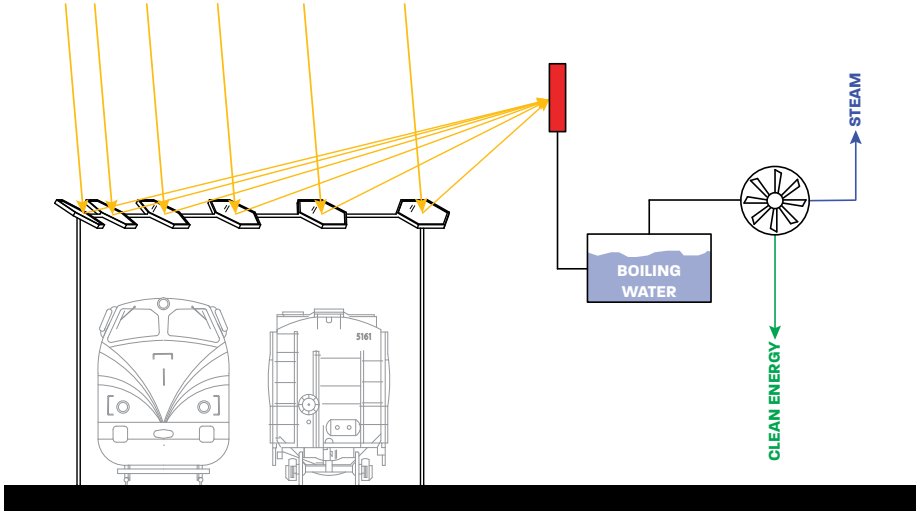
# SITE PLAN

Showing extent of solar mirror array atop the rail yard in Camp Washington, Cincinnati.



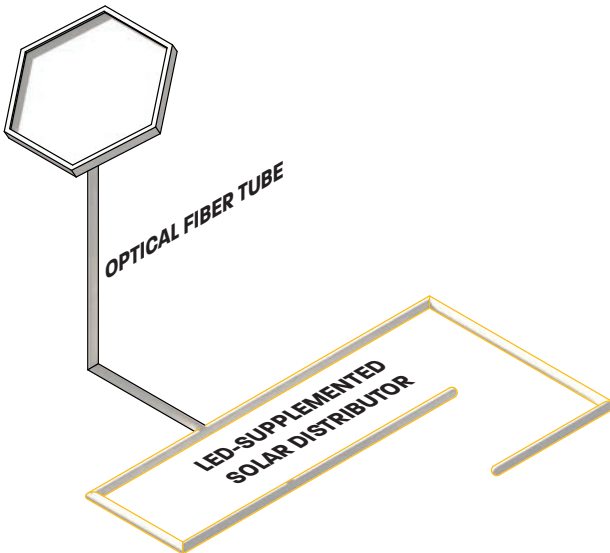
### SOLAR MIRROR ARRAY SYSTEM DIAGRAM

Demonstrating the simplicity of a solar thermal energy generation system and its deployment over an existing rail yard.



### SOLAR TUBE

Based on the same hexagonal unit as the solar mirrors, the optical fiber tube has the ability to bring daylight deep into interior spaces.



# THE RISE OF AN AUTONOMOUS FUTURE

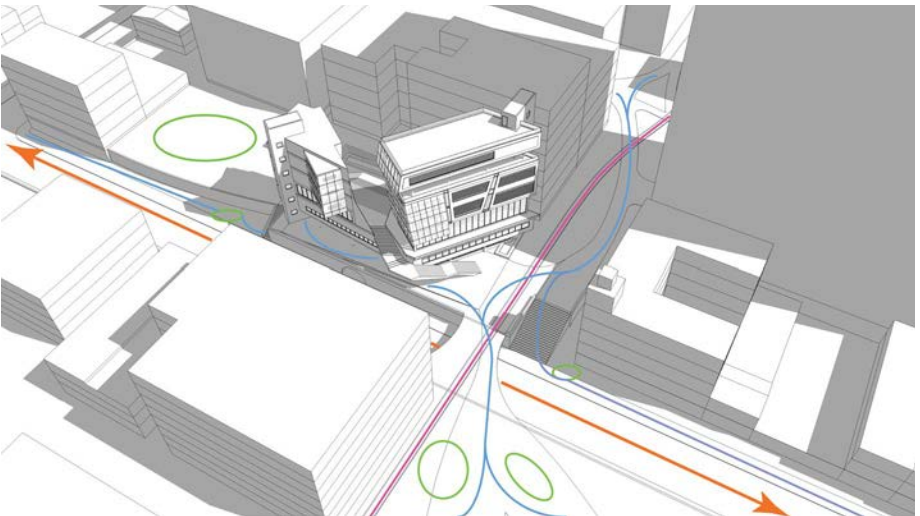
## ARCHI\_PELAGO

JARED SCHROEDER

With the rise in autonomous vehicular technology, a reorientation of the urban street experience will evolve office-to-street connection in a new language. The new formal stratification of circulation clarifies usage, capitalizing the effects of urban “islands” for urban definition and community. This reorientation will coexist with evolving workplace needs with the rise of megacities and the need for small, mobile workspaces.

### URBAN CIRCULATION

New pedestrian paths are opened up as autonomous cars are recessed below ground.



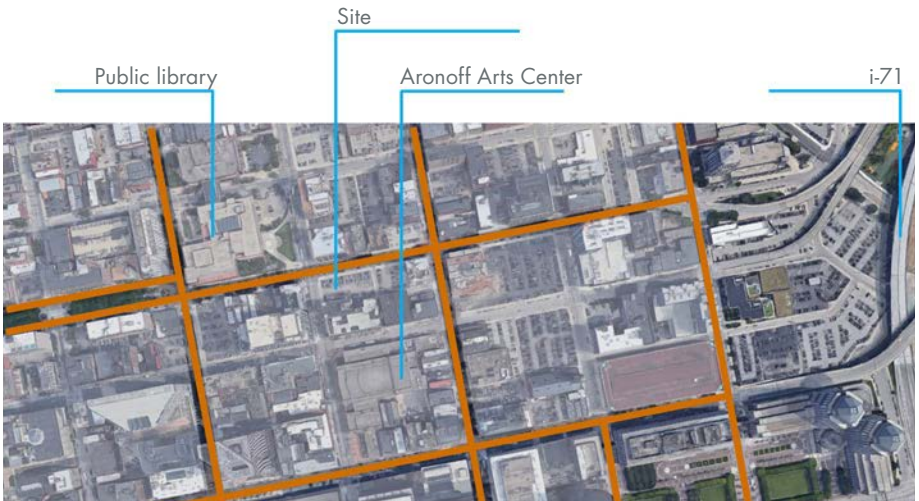
## STREET PERSPECTIVE

Autonomous vehicles interact with the below urban fabric



## SITE

New superblocks defined by autonomous vehicle corridors (Orange).



**EXTERIOR PERSPECTIVE**  
View from library

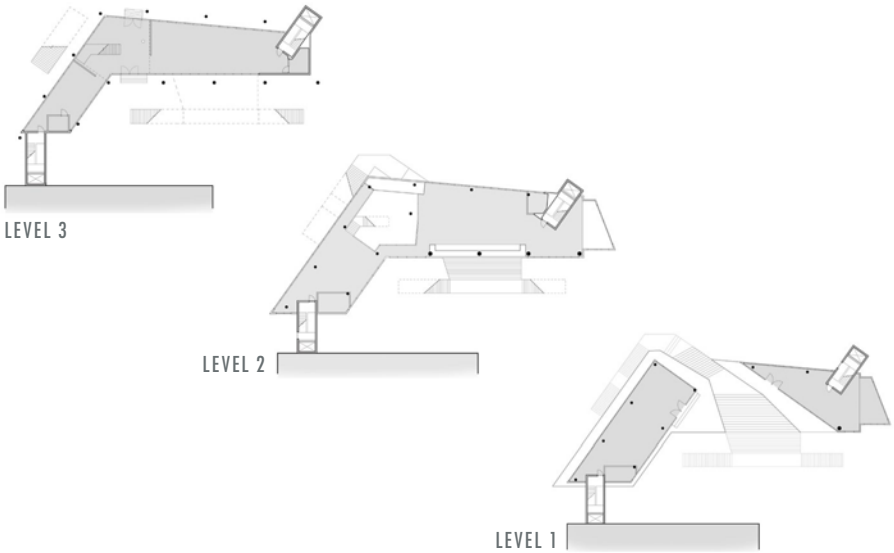


**SITE SECTION**  
Relationship of built form to sunken autonomous traffic

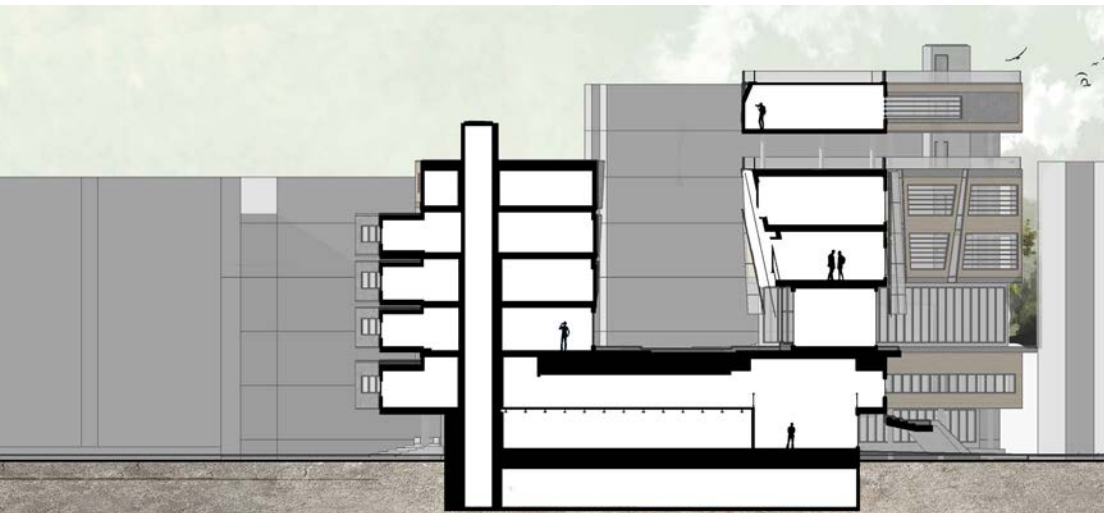


## FLOOR PLANS

Floor connect to urban environment



In this scheme, downtown Cincinnati adopts a superblock island scheme, raising the inner portions of the superblock one story and building land bridges between each of the superblocks separating limited autonomous street traffic from pedestrian and street car traffic.



## CREATING A NETWORK TO FOSTER COMMUNITY AND CREATIVITY

# INTERPLAY

SHOSHANNA SIDELL

A system of replicable workspaces in a quadrant of the developing urban fabric. Interplay is designed to connect with the community and provide a network for emerging creative companies. The term interplay refers to the relationship and effect two or more things have on one another. In this project, the coexistence of multiple facets of an urban space is explored in a future where the city is made up of superblocks; cities are developing into complex megacities; and there is an emergence of creative based companies. Problems arising from these changing urban environments include a lack of community engagement and an exponentially increasing need for built space. The building system that supports this network of startups is a modular program based design that is intended for replication in other cities. Within the superblock grid, a minimum of four locations are set, ideally in four different blocks. Each building represents a program — manual or virtual fabrication, a head meeting location, and retail/exhibition space. Within these umbrellas of building categories is a series of unique and overlapping modules that the investor can choose from based on need. The system of vertical arrangement of program defines how permeable the spaces are to the public. As temporary spaces are needed for guest lectures or larger conferences areas, a bubble can be expanded over an unused space and either kept inflated or dismantled. This system of adaptable program next to rigid is also present in the interstitial circulation. To connect the four or more buildings, is a community engaged garden path utilizing the previously automobile dominated streets. The continuous path pierces the ground floor of every building to encourage transparency and interconnection between the businesses and neighborhood.

# BREWERY DISTRICT

Future development in the OTR district of Cincinnati, Ohio



## PROJECTED GROWTH

Additional buildings are needed as employees are added, making the network of program and path more dominant



2030



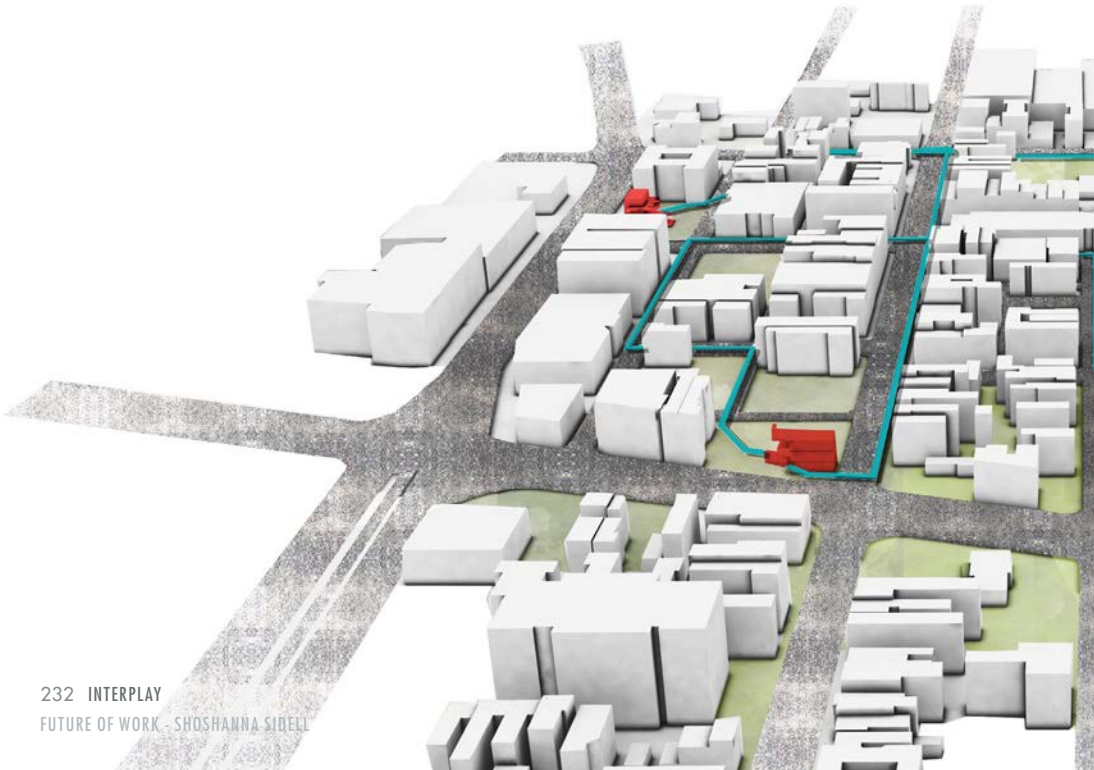
2040



2050



2060



## SITE ANALYSIS

The influence of superblocks and the unused space left



Primary and Secondary  
Circulation



Superblock Borders



Unused Lots

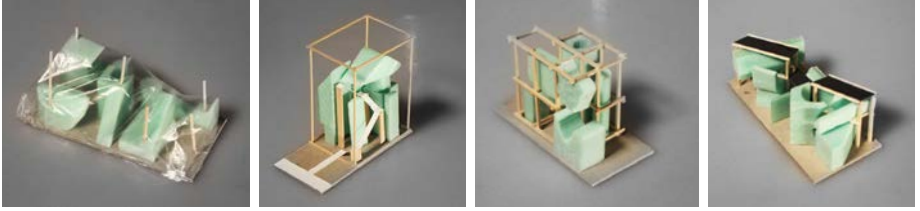
## APPLIED RESEARCH TOPICS

hub and spoke + autonomous superblocks + megacity development

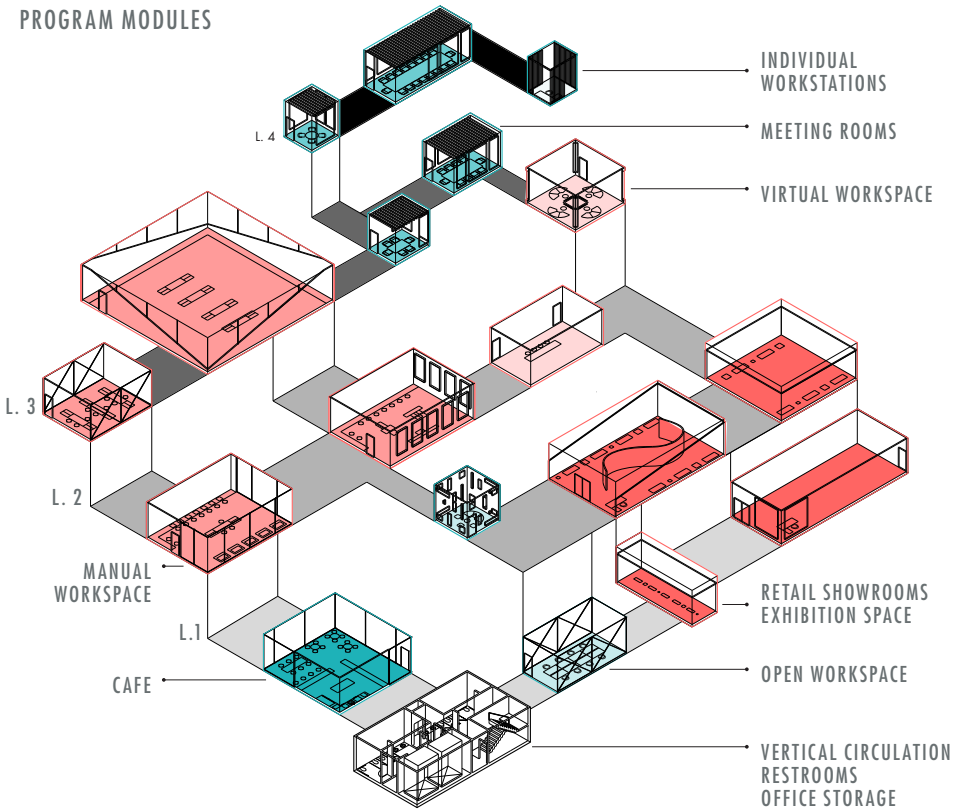


## PROGRAM

Models and axon diagram showing the hierarchy of programmatic breakdown and exploring ways to arrange them

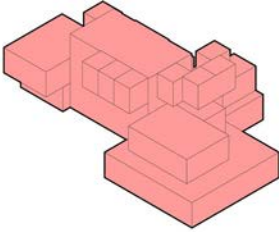


## PROGRAM MODULES

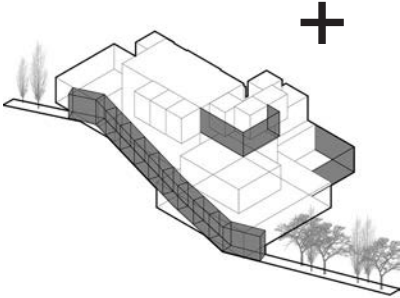


## BUILDING PROCESS

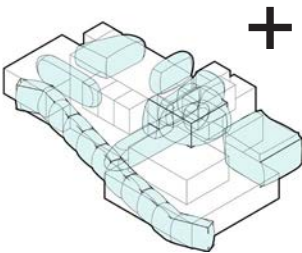
Models and axons showing the process of arranging program, circulation and connector, and inflating interstitial spaces



PLACE PROGRAM



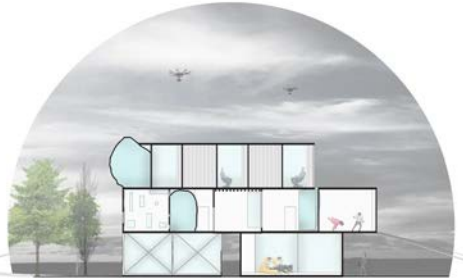
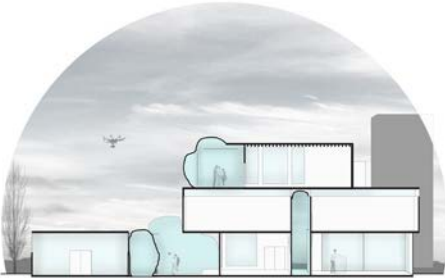
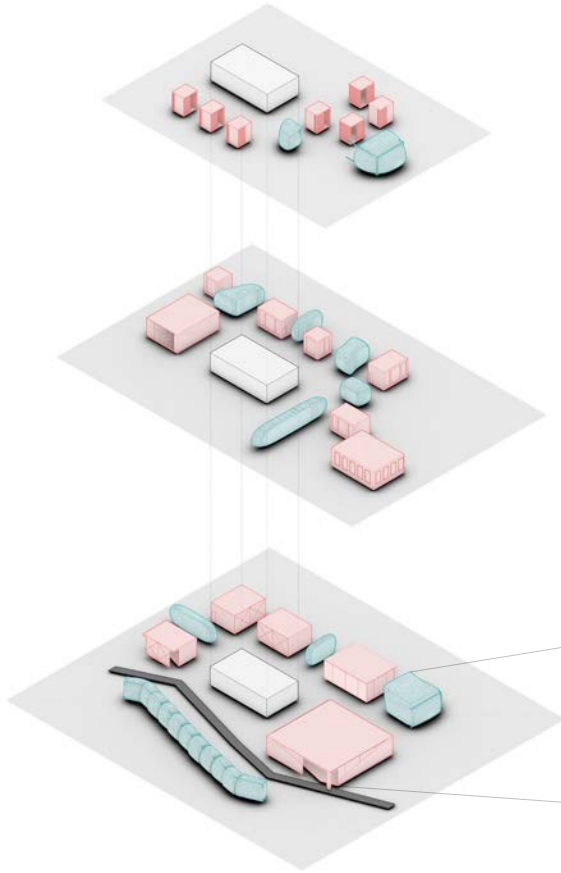
FRAME INTERSTITIAL SPACE



INFLATE SPACES AS NEEDED

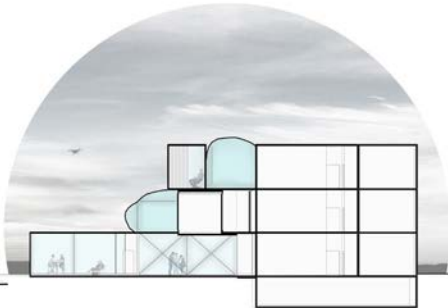
# MANUAL FABRICATION

Exploded axon showing program and inflated spaces

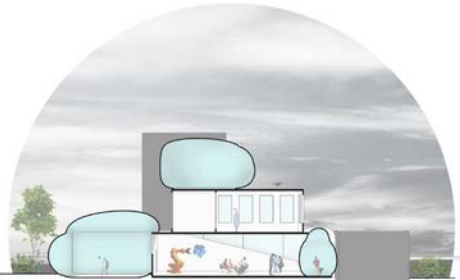


## VISUALIZATION

Interior/exterior of the manual fabrication location and sectional qualities of spaces within all four program locations



MEETING HUB



MANUAL FABRICATION



# INTEGRATED URBAN ECOSYSTEMS FOR THE FUTURE WORKFORCE

## THE URBAN SYNDROME

SRIMOYEE SINHA

The future of work is at the brink of ground breaking changes. With technological innovations and advancements, the impossible is within anyone's reach. The success of any workplace or organization will depend on how efficiently they can adapt and partake in these fast paced changes. This proposal addresses the research topics of: Socioeconomic Climate of Mega cities, Scheduled Amenities, and Influence of Nature in the workplace.

With exponential population increase, every city around the world has a significant chance of migration leading to urban densification. Densification can create a positive impact on society, if the built environment allows for multiple programs to coexist in a space and facilitate a symbiotic relationship with one another. The future of work to be a collaborative, yet individualistic space that encourages multiple activities to take place and create a diverse atmosphere at any part of any city block.



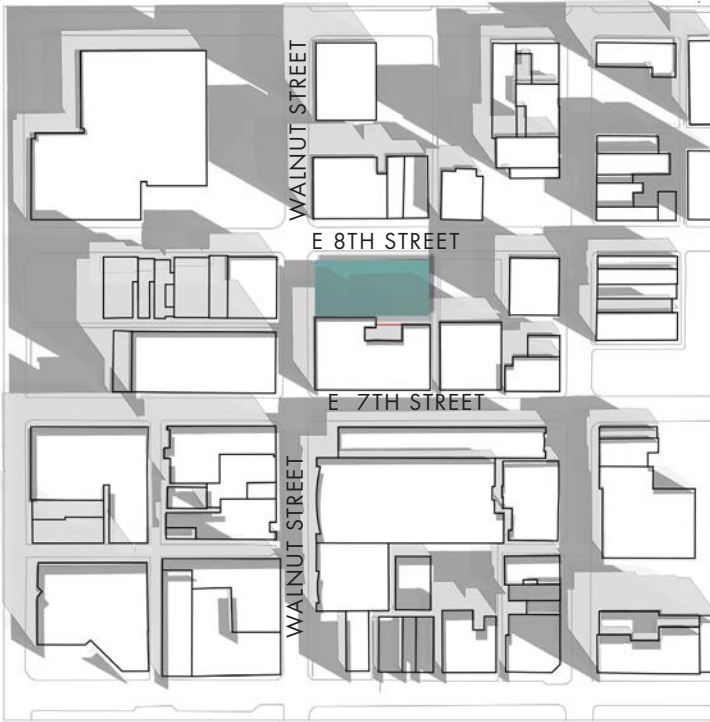
INDIVIDUAL PODS:  
SINGULARITY



DUAL ATTACHMENT:  
FOCUS GROUP COLLABORATION

## SITE PLAN

Shows the location of the site to be under shadow for majority of the time. It is inherent to elevate a part of the program to create an engaging ground plane



SITE PLAN: N.T.S.



**MULTIPLE ATTACHMENT:**  
COLLABORATION FLOOR



**MULTIPLE INDIVIDUAL:**  
SINGULARITY AND COLLABORATION

## INTERIOR PERSPECTIVE

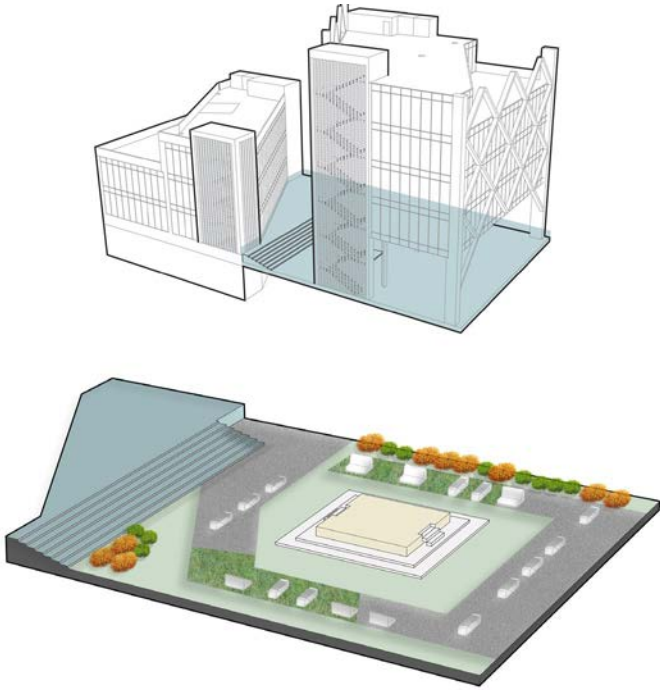
Shows the various interstitial spaces formed due to rotating and movable work pods.



One of the primary design drivers was to create a controlled private work environment for employees of the entertainment and media industry. The solution proposed uses a series of mobile office pods that can be user manipulated and re-arranged. These pods are placed on concealed casters to avoid an overly complex floor system to accommodate the pods movement. Moreover, every pod is sound proof and has the ability to attach to another pod to create a bigger unit than their individual spaces. Therefore, when the need of collaboration arises, one can just move their pod to attach themselves to the person(s) they are trying to collaborate with. Sound proof glass that surrounds these pods allow privacy as well as transparency towards the outside environment. Motion sensors attached to the glass also makes every pod attentive of its surroundings and lets the user know if someone is in close proximity to them. This encourages mobility and creates intentional interstitial spaces between multiple attached or single pods which are intuitively designed to be casual lounge areas.

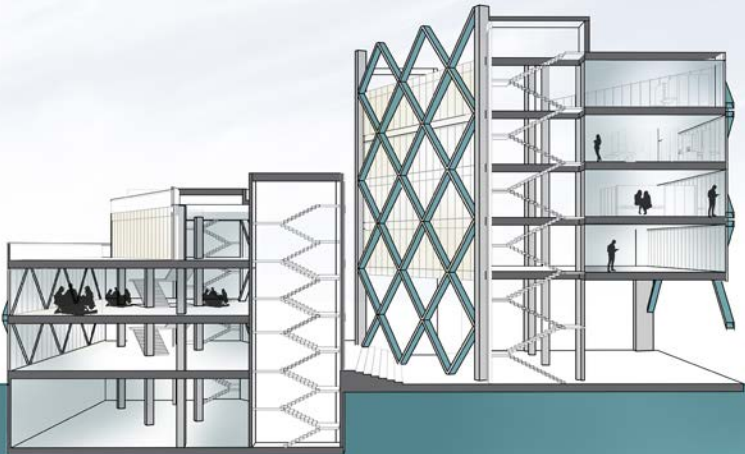
## ACTIVE GROUND PLANE

Elevating the private units above the ground plane creates opportunity for public plaza space.



## SECTION PERSPECTIVE

Elevating the private units above the ground plane creates opportunity for public plaza space and allows greater flexibility and interaction between programs.



## ACTIVE GROUND PLANE

Elevating private units creates opportunity for public plaza space.



PRIVATE SPACE: COLLABORATION  
FLOOR CONFIG. 1

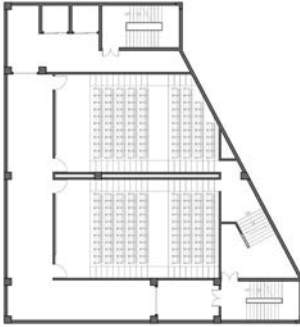


PRIVATE SPACE: COLLABORATION  
FLOOR CONFIG. 2



## FLOOR LAYOUTS

Sample Space Programming showing variant spaces coexisting under one roof.



COMMERCIAL UNIT: AUDITORIUM LAYOUT



COMMERCIAL UNIT: CAFETERIA LAYOUT,  
2ND FLOOR



ADMINISTRATION

COLLABORATION

FABRICATION

# FIGHTING A SEDIMENTARY FUTURE BY DESIGN

## FUTURE FIT

SAMUEL WILLIAMSON

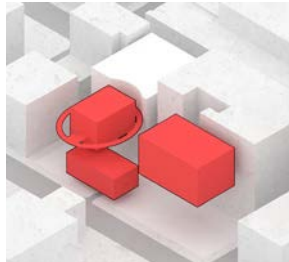
In near the future, autonomous vehicles will offer a door to door commute, eliminating the need for parking or public transportation. As a consequence, people will no longer have to walk more than the distance of the front door to their desk. This exacerbates the issues of a sedentary lifestyle that already affect many white collar employees. To combat this, I have devised an office building typology that seeks to encourage movement throughout the day. Retail, administration, support, sales, and development teams are separated into distinct programatic volumes which require the physical exertion of walking to move between. Oversized tube structures link these programs with loosely defined space to encourage unplanned employee encounters and open break out space for meetings and creative use along the way.

### DEVELOPMENT DIAGRAM

Programatic distribution and site strategy



SITE



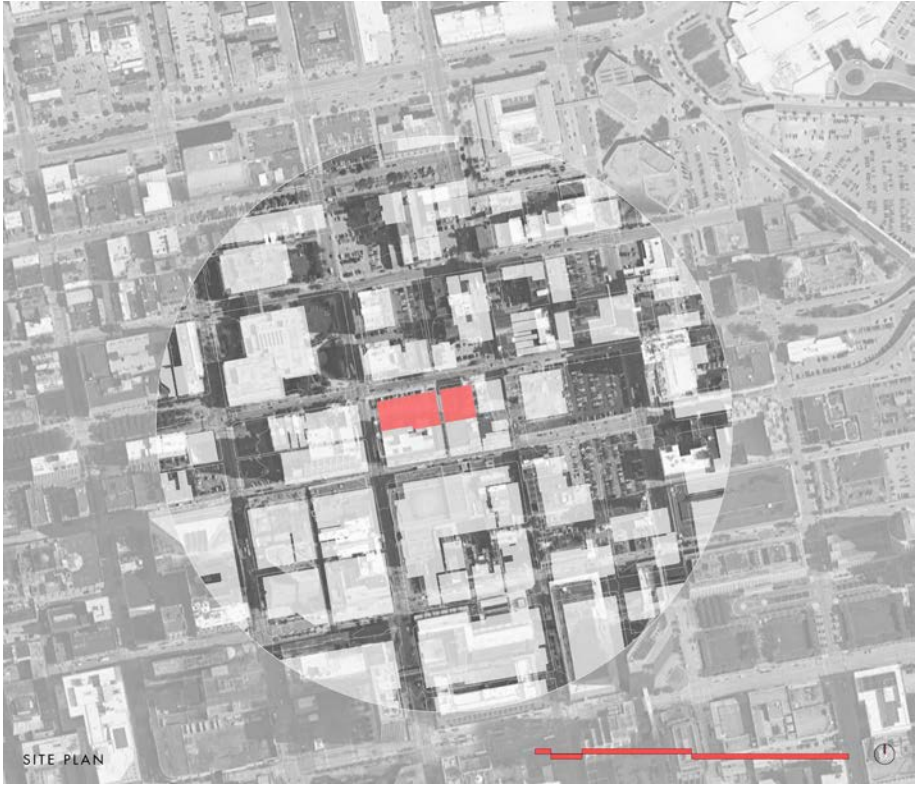
PROGRAM MASSING



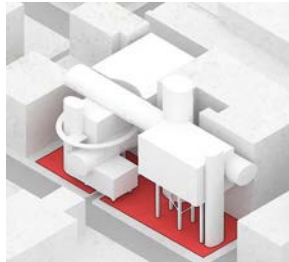
CIRCULATION

## URBAN SITE

Located in the center of Cincinnati's arts district



STRUCTURE



COURTYARD



VIEWS & BALCONIE

## INTERIOR PERSPECTIVE

Tube link between program with loosely defined program



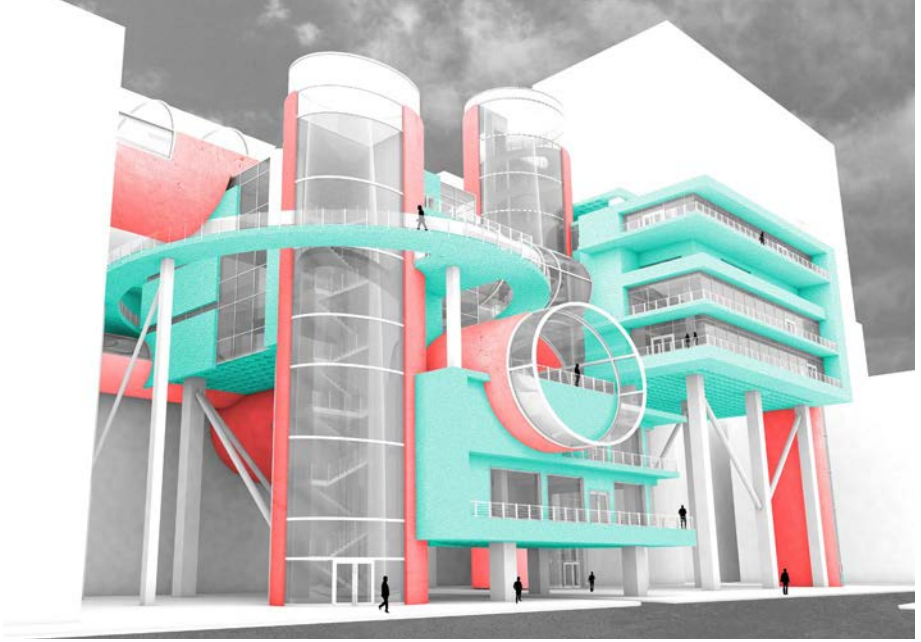
## SECTION PERSPECTIVE

Intersection of program and circulation



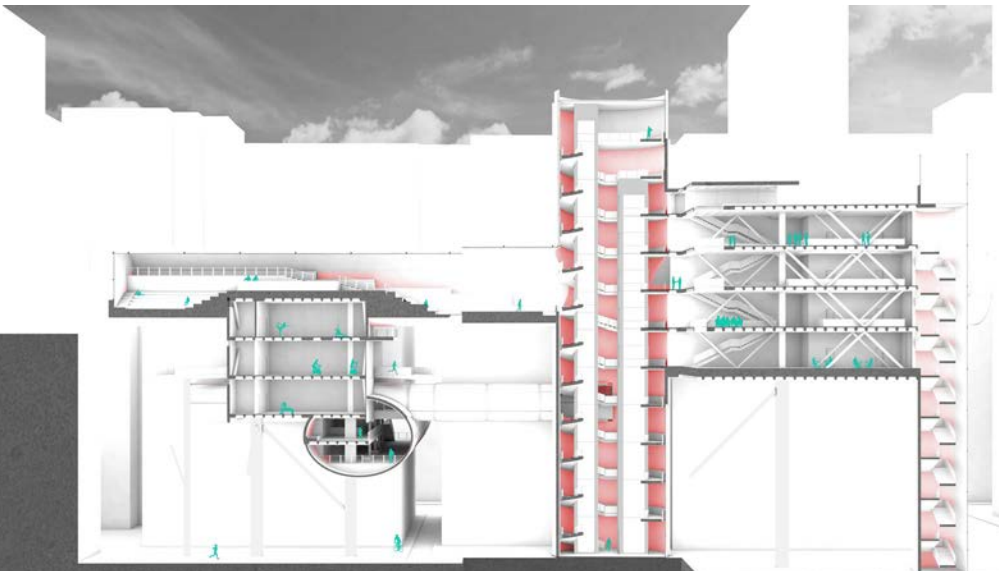
## EXTERIOR PERSPECTIVE

Building elements are lifted off the street encourage vertical movement



## SECTION PERSPECTIVE

Distribution of program along full extent of circulation





THE URBAN SYNDROME

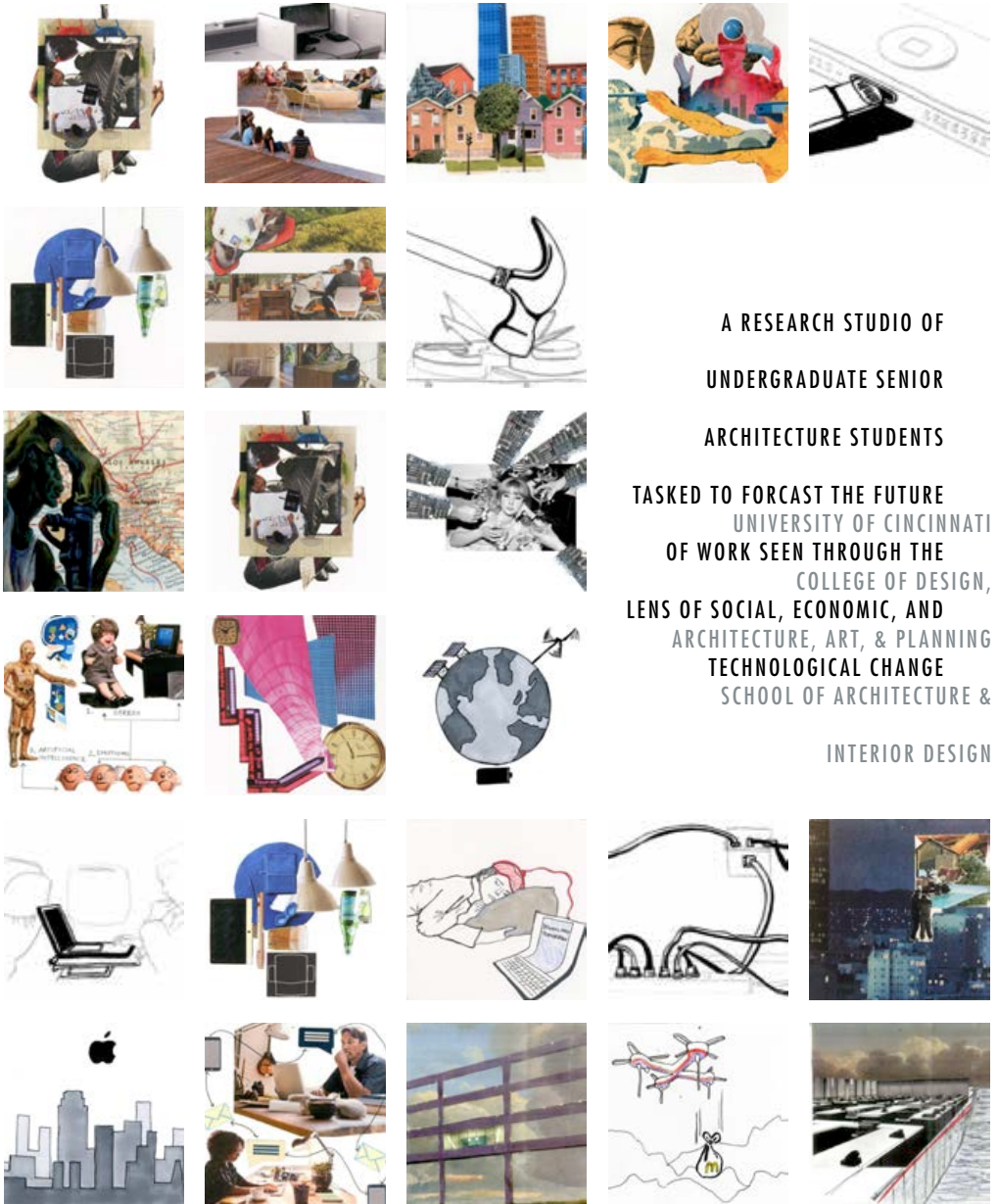
## STUDENTS & CRITICS

Thanks to all the students and their great work



Special thanks to our wonderful critics who dedicated time out of their busy schedules to offer words of wisdom and advice -

Ervin Perviz, Valerie Garrett, Cindia Wren, & Udo Greinacher



A RESEARCH STUDIO OF  
 UNDERGRADUATE SENIOR  
 ARCHITECTURE STUDENTS

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