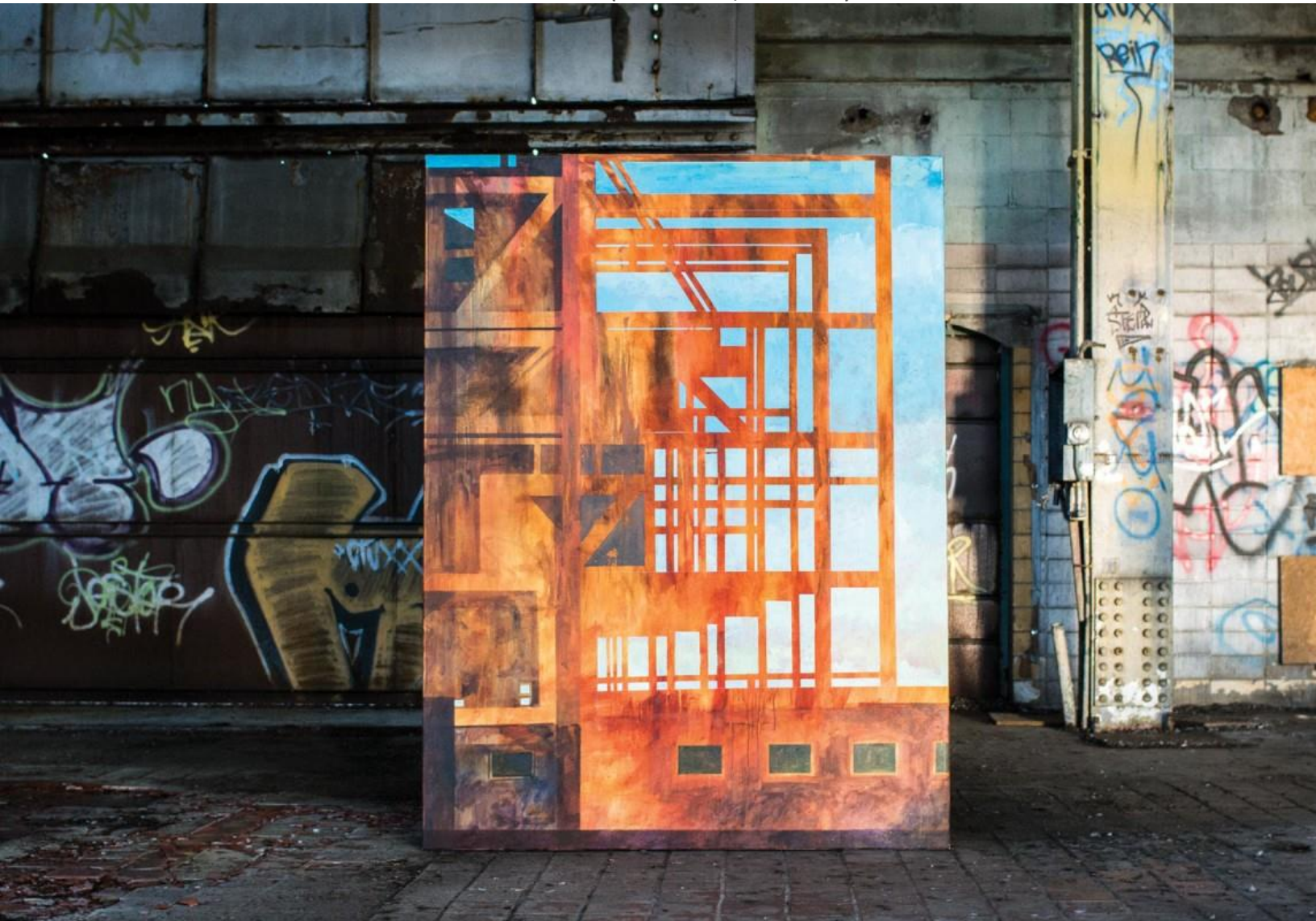


FIGURE 1 PAINTING OF THE MORAN PLANT BY KATHARINE MONTSTREAM (MONTSTREAM, 2009-2012)



FINDING THE 'BEAUTY OF DECAY' IN THE INDUSTRIAL RUIN

A STUDY OF THE ARCHITECTURAL REPURPOSING OF INDUSTRIAL SPACES AND A DESIGN PROPOSAL FOR THE MORAN PLANT

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ABSTRACT

Many cities have an industrial past that is no longer viable in today's economy. What remains is the industrial ruin. Ruins can teach us about history. They can evoke the imagination and for centuries have inspired artists. The industrial ruin is quite different from the classical ruin. Industrial ruins are often derelict spaces that hold negative connotations of decay, disorder and failure. Can the idea of the 'beauty of decay' be found in the industrial wasteland?

This study looks at the dilemma facing industrial ruins and analyzes how they can

be brought back to life in today's urban context by approaching them as a poetic ruin. It will focus on strategies that preserve the history of these structures and create welcoming spaces of intrigue, exploration and beautiful decay. The theory is put into practice in a design proposal for the Moran Plant. The abandoned electric plant, located on the shore of Burlington, Vermont, was once part of a thriving industrial area that was the economic driver for the city. It has sat empty for three decades since being decommissioned and is now one of the last remnants of Burlington's very important industrial past.

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INTRODUCTION

Throughout the ages, architectural ruins have been a subject of fascination. Ruins of the past had very poetic images. In ancient and medieval times, ruins had a mystical image, often evoking fear of ghosts or wonderment of fantastical creatures. The earliest depiction of Stonehenge shows it being constructed by the wizard Merlin and giants. In the Renaissance period, classical ruins were important symbols of the lost knowledge of past civilizations. Roman ruins especially, sparked creativity in the minds of Renaissance artists and many began using them to create fictitious scenes, such as Piranesi who created etchings of imaginary landscapes based on Italian ruins. In the 19th century, as industry began taking over the landscape, paintings of classical ruins became a reminder of a more bucolic past.

Today, we are faced with a unique kind of ruin: the industrial building. Industrial ruins are usually abandoned, dilapidated spaces. Beauty is hard to find because industrial spaces were designed for function and not for aesthetics and were most often built with cold, harsh materials. As areas without surveillance, they can attract illegal activities and thus evoke a general sense of fear and disorder. They might signify failure or loss of hope if a closure of a factory causes a recession for example. They can be contentious because of poor worker

conditions or because the industry had a negative impact on the environment and quality of life of the people in the city. These problems make it challenging for people to see the potential for reuse in these spaces.

By taking a poetic approach to the industrial ruin—with the wonder and intrigue of ancient and classical ruins—meaningful adaptations can be achieved that retain the heritage and mystique of the ruin. Positive emotions can be brought in to balance negative ones, creating a harmonious combination of new versus old.

This paper will first set the stage for this kind of adaptive reuse by exploring the ruin, the theory behind the ‘beauty of decay’, and defining the industrial ruin and its challenges and assets. Then it will look at strategies to adapt an industrial space as a poetic ruin by analyzing case studies. This paper examines theory from articles and books as well as analyzes architectural examples. The design project for the Moran Plant is a proposal based off these strategies and a practical investigation of industrial adaptations.

1. The Poetics of the Ruin

1.1 Exploring the 'Beauty of Decay'

"ruin"

noun

/'ru:ɪn/

The process or state of being spoiled or destroyed

There is much more to the ruin than the standard definition suggests. On closer inspection, the ruin holds many meanings:

...Death, rebirth, decay, growth, failure, opportunity, fear, peace, ugly, beautiful, history, innovation, reflection...

There are many contradictory emotions that the ruin evokes. These complex emotions are what makes a ruin poetic and has continued to cause intrigue and curiosity for centuries.

The 'beauty of decay' is the fascination with something that has age value. It encompasses all these contradictory meanings. The attraction to decay is not merely referring to aesthetics but also emotions. Ruins touch us emotionally because they tell stories; they may conjure memories or evoke awe for an era long ago. A ruin can have a melancholy effect that causes us to reflect on the impermanence of this world.

In *The Seven Lamps of Architecture*, artist and philosopher John Ruskin illustrates a poetic view on age value and architecture:

...it is in that golden stain of time, that we are to look for the real light, and colour, and preciousness of architecture; and it is not until a building has assumed this character, till it has been entrusted with the fame, and hallowed by the deeds of men, till its walls have been witnesses of suffering... (1849, p. 172)

The architecture of a ruin can spark creativity because it is incomplete. Our minds are no longer confined to the strict directives of a finished structure. The former use of the ruin no longer applies, and the unfinished space opens possibilities for new uses. As Tim Edensor (2005) explains:

...ruins still contain this promise of the unexpected. Since the original uses of ruined buildings has passed, there are limitless possibilities for encounters with the weird, with inscrutable legends inscribed on notice boards and signs, and with peculiar things and curious spaces which allow wide scope for imaginative interpretation, unencumbered by the assumptions which weigh heavily on highly encoded, regulated space. (p. 4)

Then there is the physical aspect of the 'beauty of decay'. This notion of aesthetic attraction to an aged structure is what Ruskin defines as the concept of

'picturesque'. He explains this phenomenon in *The Seven Lamps of Architecture*. Ruskin states that the idea of something that is 'picturesque' is different from something that is merely beautiful, and it occurs when there is 'Parasitical Sublimity'. This means it is caused by accidental or external factors, like the spontaneous decay brought on by time. It is appealing when an object becomes more rugged with decay because it reminds us of the pure sublimity found in nature, like the complexity of colors in tree bark or the cragged peaks of a mountain. This kind of beauty cannot be replicated on purpose. In Ruskin's opinion, a new building can be beautiful, but a 'picturesque' building can only exist with age (Ruskin, 1849).



FIGURE 2 *VIEW IN GHENT* SAMUEL PROUT 1833. SAMUEL PROUT WAS AN INSPIRATION TO RUSKIN IN HIS PAINTINGS OF 'PICTURESQUE' ARCHITECTURE (HOLME, 1915)

In the book *Modern Painters*, Ruskin provides another poetic view of age value. He describes the beneficial 'softening' effect that age can have on art and sculpture:

Again, upon all forms of sculptural ornament, the effect of time is such, that if the design be poor, it will enrich it; if overcharged, simplify it; if harsh and violent, soften it; if smooth and obscure, exhibit it; whatever faults it may have are rapidly disguised, whatever virtue it has still shines and steals out in the mellow light, and this to such an extent, that the artist is always liable to be tempted to the drawing of details in old buildings as of extreme beauty, which look cold and hard in their architectural lines... (1878, p. 105)

He is saying that the effects of time and nature generally improve the original design. This effect of age can be particularly advantageous for industrial ruins. In a harsh and cold industrial space, the elements can soften its appearance with time. The cold steel beams that once created a bleak environment, are now 'picturesque' as they are taken over by rust.

Adapting a ruin in a poetic way means to take all of these aspects of the ruin into consideration.

1.2 Adapting the Ruin: Scarpa and Fehn

Carlo Scarpa and Sverre Fehn are famous for some exemplary ruin adaptations. The ruins in these cases are older than the industrial ruin, but they provide an understanding of what it means to adapt a ruin in a poetic way. The following are two adaptations that exemplify these strategies.

Museo di Castelvecchio, Carlo Scarpa
Verona, Italy
1956-1975

Scarpa is best known for his symbolic use of materials and detailing and his appreciation for the craft. He was hired to renovate the Museo di Castelvecchio, where he had the challenge of dealing with multiple layers of history. At the base was a medieval castle with 19th century additions. He uses new interventions to define and connect the different layers while showing a high respect for the existing.

An integral part of the design is the circulation path. The route creates a narrative for the user to follow and offers unique views of the space (Figure 4). The different viewpoints allow the visitor to better understand the space while creating a sense of exploration. In some areas, he uses materials to define the path, such as in the ground floor sculpture gallery. A steel beam runs through the center, connecting the galleries and guiding the visitor through

the space. A different type of stone on the walls of the vaulted passes also delineate the path, while the concrete flooring guides one around the sculptures (Figure 5).

Scarpa uses materiality and joints to delineate the new from the existing. He leaves small gaps between connections to give an appearance of separation between old and new (**Error! Reference source not found.****Error! Reference source not found.**). It can be viewed as a reverence to the existing architecture by not intervening in an invasive way. The gaps accentuate the layers by creating a more noticeable contrast. Throughout the building, Scarpa has created a complimentary dialogue between old and new.



FIGURE 3 JOINT DETAILING BETWEEN OLD AND NEW MATERIALS ©LUCA ONNIBONI (ONNIBONI, N.D.)



FIGURE 4 INTERESTING VIEWS ARE CREATED BY SCARPA'S TRAJECTORY ©LUCA ONNIBONI (ONNIBONI, N.D.)



FIGURE 5 A CIRCULATION PATH IS DEFINED BY MATERIALS IN THE GROUND FLOOR SCULPTURE GALLERY. THE SEPARATION OF OLD AND NEW MATERIALS CAN ALSO BE SEEN IN THE FLOOR DETAILING ©LUCA ONNIBONI (ONNIBONI, N.D.)

Hedmark Museum, Sverre Fehn
Hamar, Norway
 1967-2005

My most important journey was perhaps into the past, in the confrontation with the Middle Age, when I built a museum among the ruins of the Bishops' Fortress at Hamar. I realized, when working out this project, that only by manifestation of the present, you can make the past speak. If you try to run after it, you will never reach it. (Fehn, 1997)

This statement by Fehn, that you cannot "run after" the past, resonates strongly in his design for the Hedmark Museum. Throughout the museum, he uses the concept of old and new co-existing harmoniously. Fehn was commissioned to design a museum to shelter and display medieval castle ruins and exhibit Norwegian farm culture. Many similarities can be seen in the concepts used in the Museo di Castelvecchio. Like Scarpa, Fehn was challenged with a site that had multiple layers of history. At the base, were ruins from a 12th century castle and atop them sat an 18th century barn. Fehn's design for the museum continues the concept of the layers. The ruins are the foundation, a new concrete circulation path navigates through the ruins, and a new wooden structure resembling the original vernacular barn sits

on top (Figure 6). The connections of these layers are a significant part of the design. Like Scarpa, the new elements are added in such a way to differentiate the layers. New elements lightly and respectfully connect to the ruins. The concrete circulation path appears to 'float' above the ruins on pillars (Figure 7). Windows consist of minimal glass sheets that attach to the ruin walls with steel pins. Wood columns that support the new roof also lightly connect to the base on pin joints (Figure 8). The circulation path is an important part of the design. The visitor experiences the museum along a concrete ramp that takes them on a 'journey into the past'. The route allows visitors different perspectives of the ruins and of the museum displays. The path takes them above the ruins, and then inside them. It is a constant dialogue between old and new.

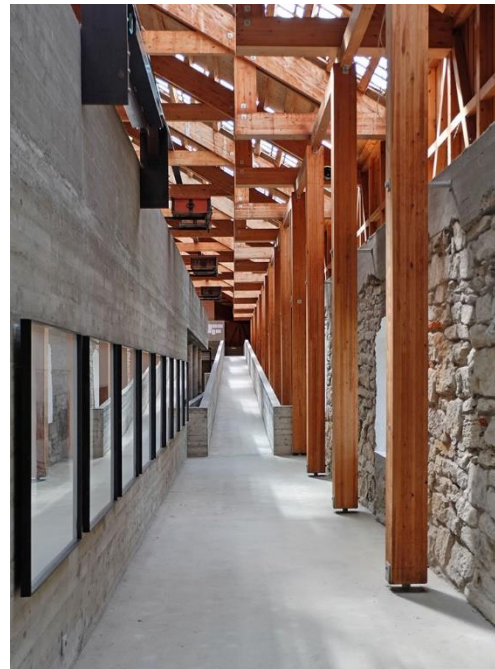
In both Scarpa and Fehn's projects, the trajectory through the building and clarity of layers are strong. They use circulation and views to enhance the idea of exploration and discovery that already exists within the ruin. By creating an 'architectural storyline' throughout the building, they are helping the visitor to gain a better understanding of the space and thus, understand its past. The interventions carried out in both projects highlight the 'beauty of decay' in the ruin by creating a clear separation between old and new. They use materials that create a subtle, yet apparent contrast. The juxtaposition highlights rather than overshadows.



FIGURE 6 FEHN USED MATERIALITY TO DISPLAY THE DIFFERENT LAYERS (SVERRE FEHN - HEDMARK MUSEUM HAMAR, N.D.)

FIGURE 7 THE NEW WOODEN STRUCTURE IS LIGHTLY CONNECTED BY PIN JOINTS (SVERRE FEHN - HEDMARK MUSEUM HAMAR, N.D.)

FIGURE 8 THE NEW CONCRETE RAMP CONNECTS LIGHTLY TO THE EXISTING BASE ON SMALL CONCRETE COLUMNS (SVERRE FEHN - HEDMARK MUSEUM HAMAR, N.D.)



2. Industrial Spaces: The Modern Ruin

2.1 The Dawn of the Industrial Ruin

The Industrial Revolution began in the mid-18th century with the discovery of fossil fuels—coal, oil and natural gas. James Watt invented the first version of the steam engine powered by coal. Soon after came the invention of the steam locomotive and steamboat, revolutionizing transportation. With the invention of machines, goods could now be mass produced and production began to move out of the homes and into factory settings. Thus, began the age of industrial architecture.

A study done in 23 of the world's most advanced economies, found that employment in the manufacturing industry fell from about 28 percent in 1970 to about 18 percent in 1994 (Rowthorn, 1997). Deindustrialization began earliest in the United States in 1965. While initially, we might think that the closure of large factories and plants is attributed to failure, most cases of deindustrialization can be attributed to advancements in technology and economic success.

Take, for example, the Croton Aqueduct system in New York City (Figure 9). The aqueduct provided the city's first reliable supply of clean water in 1842. At the time of

its inauguration, the aqueduct was considered a phenomenon that historian David Nye describes as “The American Technological Sublime”, which means that it “awed the public” and “attracted maximum national attention” (1994). The Croton Aqueduct not only made conditions safer for residents but allowed the city to develop into the financial and economic powerhouse that it is today. A century later, the demands for clean water were too great for the capacity of the aqueduct. A new aqueduct system was built that could deliver three times the amount of water, leaving the original aqueduct to become a ruin.

The decommissioning of the Old Croton Aqueduct was not a symbol of failure but rather a sign of a prospering city. Many industrial ruins inhabiting our landscape today were simply part of an era of development that eventually led to something bigger and better. The case for my design project, the Moran Plant, is a prime example of this. The population of the city of Burlington was growing, and energy demands were increasing beyond the plant's capacity. The building was not built to support higher production rates, so it was shut down, and a new facility was built at a different site.

This is not always the case, and indeed a factory or plant closure can be due to a failing economy. It is important to recognize that the industrial ruin can arise from either scenario.



FIGURE 9 THE HIGH BRIDGE THAT ONCE WAS PART OF THE CROTON AQUEDUCT SYSTEM, IS NOW A PEDESTRIAN BRIDGE. PHOTO BY KARSTEN MORAN FOR THE NEW YORK TIMES (WILLIAMS, 2017)

2.2 Industrial Ruins versus Ruins of the Past

A ruin of the past is one you might envision in a bucolic painting. It is the medieval castle, or the old stone manor or the Roman forum. They are architectural typologies that arouse a sense of Romanticism. They are constructed of stone or marble and are sometimes adorned with paintings.

The industrial ruin is characterized quite differently. These spaces are usually constructed with cold steel beams and austere brick walls. The industrial building was built for function. It was not designed to be comfortable or aesthetically pleasing because its primary inhabitants were machines. It was built for efficiency and production. Because these structures held factories or power plants, there are often hazardous materials that must be dealt with when repurposing these spaces. They are usually forgotten buildings—perhaps unrecognized by preservationists and the public—that are at a high risk of being demolished. These are tangible challenges that the industrial ruin has compared to ruins of the past.

The industrial ruin, being a more recent ruin has the advantage of being well-documented. The function of the building is known, and architectural drawings are often available. Pictures usually exist from when it

was in use and people who worked in these spaces might still be alive to recount tales from when it was in operation.

The Moran Plant, for example, was only recently decommissioned in 1986. Tom Carr was superintendent of the Moran Plant from 1968-1984. In a video directed by Sierra Urich, he revisits the plant after twenty-five years. Once inside, Tom remarks on the sobering state of the building: "There's not much left except, what you see—the shell, the building. It was a 24-hour, 365 days a year operation". Prior to working at the plant, Tom was a farmer and struggled to make ends meet. "I was so broke; I didn't think I'd ever see daylight" he says in the film (Urich, 2014). The Moran Plant opened within a mile of where he lived so he thought he would try to get a second job there for some extra money. He ended up finding that he really enjoyed working there. He describes some aspects of life inside the Moran Plant. Timed races were held amongst the workers, starting at the top of the stairs and down through the bunkers. Tom's best time was thirty-eight seconds. "My memories of the Moran station are good memories. It was such a maturing experience for me...it's, part of me". He chuckles as he reminisces, "Yeah we used to have a lot of fun here...really did" (Urich, 2014).



FIGURE 10 PHOTOGRAPH FROM TOM CARR'S COLLECTION TAKEN DURING THE MORAN PLANT'S ACTIVE YEARS 1954-1986 (MORAN PLANT 1954-1986, N.D.)

The Moran Plant was innovative in its technology and design. But behind that façade was a story of the people who made it happen. At other industrial sites, the worker's story might not always be a positive one. Perhaps conditions were poor, or laborers were underpaid. In the case of the Moran Plant, there was some contention over the smoke that drifted to those that lived down-wind of the plant. Because these are more recent ruins, any controversy about the building is still fresh. In a ruin of the past, it is easier to view it in a more romanticized, positive light because people aren't around to remember anything bad that may have taken place there and the original function may not even be known or documented.

Therefore, the recency of the industrial ruin can be both an advantage and disadvantage over a ruin of the past. These spaces are well-documented and remembered, which allows heritage to play a stronger role. Living memories may still exist for these buildings, which can be beneficial for its preservation (in the case of Tom Carr) but possibly detrimental. In repurposing an industrial space, the recent history allows the opportunity to incorporate a rich heritage into the new space. If there is contention over the prior use, there is the opportunity to turn it into a respectful monument to the people that it affected.

2.3 The Allure of the Industrial Ruin

The industrial ruin has a unique appeal with its corroding beams and its graffiti-covered walls. The architecture has a rawness that attracts explorers and creative minds alike.

An Artist's Muse

Many Burlington artists have been inspired by the abandoned Moran Plant. The landmark building sits quietly decaying on the Burlington waterfront. It has been abandoned for decades and has become a “no-man’s land”. Most of the general public only know it as an eyesore in an otherwise picturesque lake setting. Behind the crumbling facade, however, is a rich history.

Several artists have tried to bring attention to the space. In 2013, Sarah O Donnell was one of the first artists to work with the Moran Plant. She created a light installation called “A Visible Night” (Figure 11). At the very top of the building, above the still-intact hoppers that coal and wood chips were once filtered through, she installed a rainbow panel of silk inside the top row of windows. At night, a beacon of light would rotate back and forth, illuminating the colors in the windows for passersby down below to see.

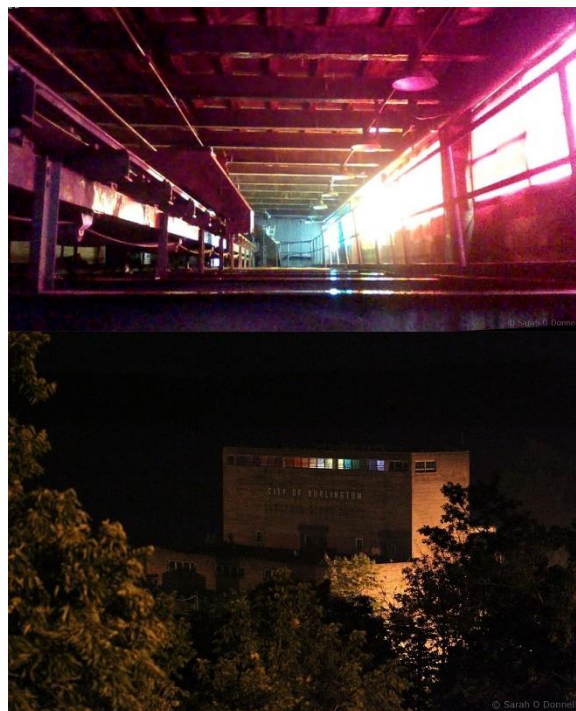


FIGURE 11 A VISIBLE NIGHT BY SARAH O'DONNELL (O'DONNELL, 2013)

Mary Lacy is another artist that has highlighted the building with her art. She brought life back into the building by painting small murals of animals and nature throughout the structure (Figure 12). She describes her vision of the derelict structure, which exemplifies the potential that artists often see in these spaces:

One could see a forsaken old building scarred with graffiti, chipped tiles and broken glass. I see a variety of textures and a palette of beautiful colors – teals and rusty reds. I see moving beams of light reaching in through the windows and elements of nature sprouting from within. (Lacy, 2014)

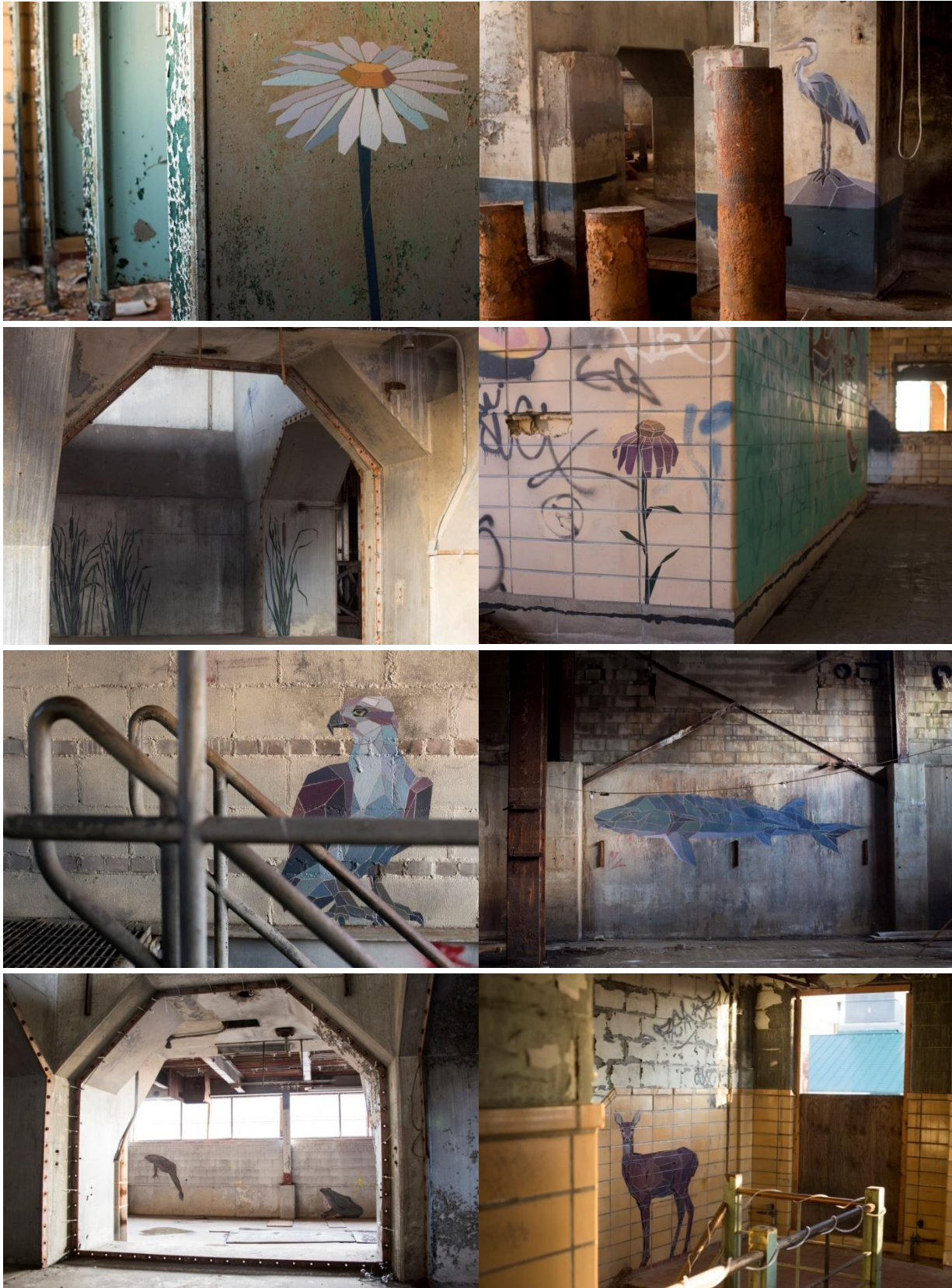


FIGURE 12 DEPICTIONS OF NATURE BY MARY LACY IN THE MORAN PLANT ©BRENDAN MCINERNEY (LACY, 2014)

Like the intriguing contrast that Lacy creates with her juxtaposition of colorful images of life against crumbling decay, Australian street artist Rone, also uses the element of contrast to evoke the senses in his series of murals titled 'Empty' (Figure 13).

Rone painted portraits of beautiful women in abandoned, decrepit spaces. Like Lacy, he is trying to put a human element back in an otherwise alien landscape. While these installations are temporary, they effectively they effectively bring life back into a dilapidated space.

In the 1950's, husband and wife team, Bernd and Hilla Becher were inspired by the industrial ruin in their photography compositions. They created grids of like-industrial structures that took the subjects out of their context and focused on their form (Figure 14). It was an objective study of the industrial landscape, unlike the more poetic qualities of Lacy and Rone's installations. They had a profound effect on viewing the industrial ruin in a new light. By presenting the industrial structure in this new context, it becomes more like a sculpture and the viewer can appreciate the beauty of the actual form.

Another artist that worked with the idea of looking at the modern ruin in new ways was Gordon Matta-Clark. He was an architect-turned-artist that made a series of 'building

cuts' (Figure 15 and Figure 16). He would find abandoned structures and cut out sections to create new spaces and views. In his project titled *Day's End* (Figure 16), he made a series of cuts in the walls and floor of an abandoned industrial hanger to create a spiritual-lighting effect. His installations challenge new ways of seeing the layers of a building. For a building that has a function and layout that is no longer applicable, the ability to view the space in new ways is important. Matta-Clark's art gives life to forgotten spaces by showing them in new ways.

In their abandoned, decrepit state it is hard for many to see the beauty in industrial spaces. Recognizing the 'beauty of decay' gives them hope and it helps to protect the authenticity of the space. Artists are displaying ways to work with this concept in a raw form and are having profound effects on bringing attention to an otherwise forgotten space. Art may not be a permanent remedy for the ruin, but it can help others see its potential. By viewing the space as the artist does, the architect can turn a dilapidated industrial space into an aesthetically pleasing, functional and meaningful building in the current urban fabric.



FIGURE 13 *THE SOUND OF SILENCE* BY AUSTRALIAN STREET ARTIST RONE ©RONE (RONE, 2016)



FIGURE 14 *PITHEADS*, BERND BECHER & HILLA BECHER, 1974 ©ESTATE OF BERND BECHER & HILLA BECHER ©TATE, LONDON 2020 (STIMSON, 2004)



FIGURE 15 *CIRCUS*, GORDON MATTA-CLARK, 1978 ©ESTATE OF GORDON MATTA-CLARK (RICHARD, 2019)



FIGURE 16 *DAY'S END*, GORDON MATTA-CLARK, 1975 ©ESTATE OF GORDON MATTA-CLARK (RICHARD, 2019)

Alternative Practices and Urban Exploration

The industrial ruin can attract activities that are considered inappropriate and disrespectful in more ordered urban spaces. They offer an unmonitored space to experiment with 'alternative' practices. These activities contrast with the original function of the building—a highly ordered industrial space. The building was once a symbol of economic progression. Can some 'alternative' activities also be progressive?

An example is the alternative housing community dubbed 'Pure Genius', formed by a group of people protesting the profit-driven housing industry. In 1996, they started a housing community on an abandoned piece of land where a Guinness distillery once stood on the outskirts of London. People constructed their own dwellings out of scrap materials and planted gardens. They wanted to prove that derelict sites could be used for low-cost, cooperatively run, sustainable housing developments. While the community was mildly successful, it lasted only five months because of lack of infrastructure to deal with crime within the community. Nevertheless, it was an example of how alternative activities taking place in a ruin can be progressive (Edensor, 2005). It is interesting to acknowledge the motives that this type of 'progressive' activity arises from. As Tim Edensor notes, they are "forged through affective and enthusiastic desires rather

than through the compulsions of urban and industrial order" (2005).

The lack of order in ruins provide the thrill of the unknown. Industrial ruins especially, can evoke a sense of fear—we often see this architectural typology used in films as a place for crime or in an apocalyptic setting. Industrial ruins attract those adventure-seekers that partake in urban exploration. This is the pastime of exploring abandoned and forgotten spaces in the built environment. Urban exploration usually involves trespassing into spaces where the public is not meant to go. However, urban explorers emphasize that the purpose is for exploring and documenting, not vandalizing. The urban explorers of Hong Kong, called HK Urbex, are on a special mission to preserve the heritage of the city. Hong Kong is quick to demolish heritage buildings because of its shortage of land and growing property market. Recently, HK Urbex aided in saving an old theater from demolition. The pictures they took of the interior aided a local heritage group in successfully campaigning for its survival.

Like artists, urban explorers appreciate the picturesque qualities of the ruin. Ken Fager (Figure 17 and Figure 18) is a self-proclaimed urban explorer. He describes what draws him to the urban ruin: "Urban exploration is physically challenging, intellectually stimulating and pushes my creativity" (Imam, 2014).

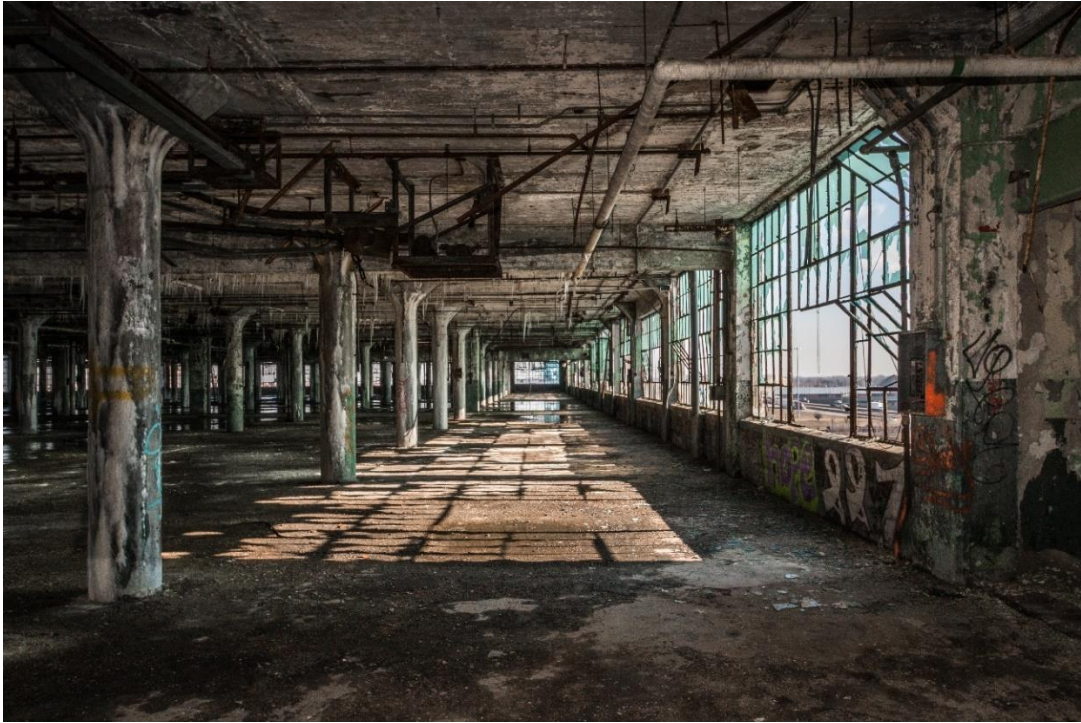


FIGURE 17 *FISCHER BODY PLANT* BY KEN FAGER (FAGER, 2016)

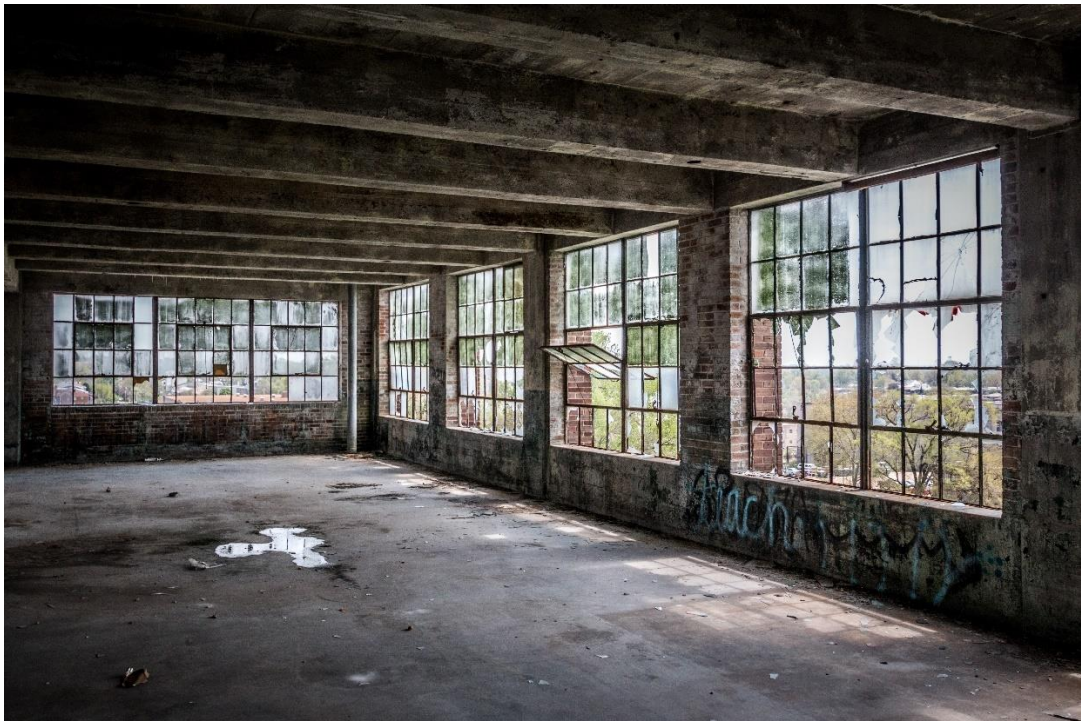


FIGURE 18 *ABANDONED ST. LOUIS* BY KEN FAGER (FAGER, 2015)

A Sanctuary

When you step into a ruin, it is like stepping into another world. It is like time has suddenly slowed. Days are now measured by the rising and setting of the sun. Time runs at the pace of the steel beams corroding as rain trickles through the building. The regulation of the outside world no longer dictates the space. It is now run by nature: Plants creep through cracked concrete and animals make their way in through broken windows. The stillness of the ruin can provide a place to reflect. It can be a place to escape the hustle of modern life. When nature takes over the abandoned space, it enhances the feeling of the sanctuary.

The industrial ruin can become a haven for those cast out of ordered society. They offer a place of shelter for the homeless and for stray animals, a refuge for wildlife displaced by new construction, and a place where weeds can flourish. On the negative side, the secluded nature of the abandoned industrial space can attract criminal activity. However, it is also why 'alternative' practices feel welcomed and encouraged here and why artists find allure in these spaces.

3. Exploring Adaptations of the Industrial Ruin

An analysis of cases studies

As creative minds and explorers have shown us, industrial ruins are anything but voids within the urban fabric. Artists and explorers document the industrial ruin in a poetic way, but it remains in a state that is not usable or safe. It is the role of the architect to turn them into functioning spaces. How can the poetics of the space be maintained? The following cases are some examples of architectural adaptations in industrial settings that explore these strategies.

3.1 Mass MoCA *Bruner/Cott & Associates* *North Adams, MA USA* *1999-2017*

As we've seen, art can have a profound effect on an industrial space. Likewise, an industrial space can have a profound effect on art. An industrial ruin can be a provocative display for art, or it can become art itself. In the case of the renovation of Mass MoCA, the industrial ruin becomes both.

History

Located in rural North Adams, Massachusetts, this former industrial site was converted into a contemporary art museum. It consists of twenty-six buildings

that were originally constructed in 1860 to house the Arnold Printing Works, one of the leading printing textile companies in the world at the time. Financial difficulties caused the company to shut its doors in 1942. It was then purchased by the Sprague Electric Company and renovated to house the state-of-the-art electronic producer until it closed in 1985. The loss of jobs was a great detriment to the town.

The Transformation

A community of art enthusiasts who worked at the Williams College Museum of Art were looking for a way to save this historical complex. Like many artists, this group saw potential in the decaying industrial space. Architects Bruner/Cott & Associates designed a master plan for the adaptation of the factory into a museum that was completed in three phases and first opened in 1999.



FIGURE 19 FROM THE EXTERIOR, NEW INTERVENTIONS ARE MINIMAL (ARCHDAILY, 2017)

Concept

The entire complex was designed for expressing creative energy. It houses

temporary art galleries, indoor and outdoor performing art venues, and studios for art classes. The architects intervened in a non-aggressive way and kept much of the existing structure. They worked with the concept of inserting and weaving new elements into the existing framework. New partition walls were inserted to create galleries (Figure 20). Other new features were woven throughout the building to create new functions for space (Figure 21).

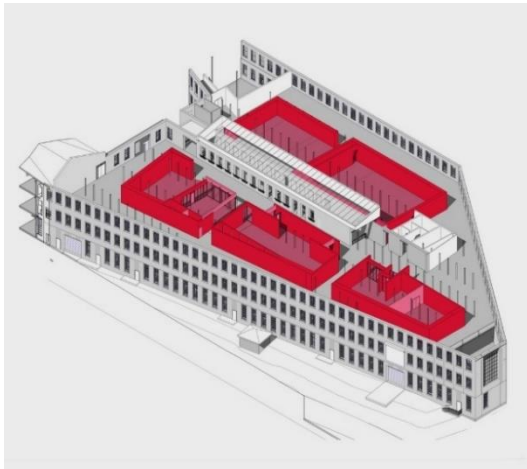


FIGURE 20 NEW PARTITION WALLS WERE INSERTED TO CREATE GALLERY SPACE (ARCHDAILY, 2017)

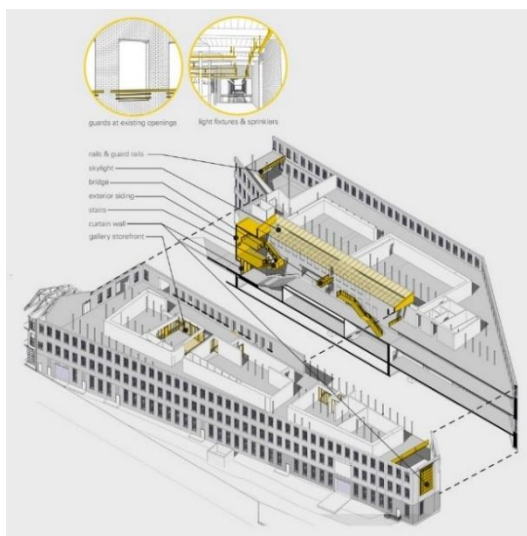


FIGURE 21 ELEMENTS WERE ADDED TO CREATE NEW FUNCTIONS FOR SPACES (ARCHDAILY, 2017)

From the outside, the building is mostly unchanged, except for the new materials providing connections between spaces (Figure 19). While keeping a lot of the existing framework and materials was cost-efficient for the project, leaving the 'rawness' of the industrial space creates a heightened sensory experience for the visitors. The simplicity of the new, white partition walls and the bold colors of the artwork contrast with the existing surfaces (Figure 23). The contrast highlights both in an advantageous way, bringing a greater attention and appreciation to each. The existing elements become a piece of art in themselves, displaying the idea that the aging effect can be 'picturesque' and beautiful (Figure 22). Spaces were rethought to allow users to experience the building in new ways. For example, an exterior gap between two buildings was covered by a glass roof to create a new central core in the phase III building of the project (Figure 24). In some areas, floors were opened to create two-story exhibition spaces.

The building is preserved by displaying it as a complimentary piece of art to the exhibitions that it houses. Mass MoCA is a prime example of how decrepit industrial buildings can become elements of beauty. The architects highlight the 'beauty of decay' very well with contrast. It is also an example of industrial spaces harboring creativity both as an inspiration and as a display.



FIGURE 22 THE 'PICTURESQUE' WALL OF THE FACTORY BECOMES A PIECE OF ART WITH ITS VARIED COLORS AND TEXTURES (ARCHDAILY, MASS MoCA BUILDING 6 / BRUNER/COTT & ASSOCIATES, 2017)

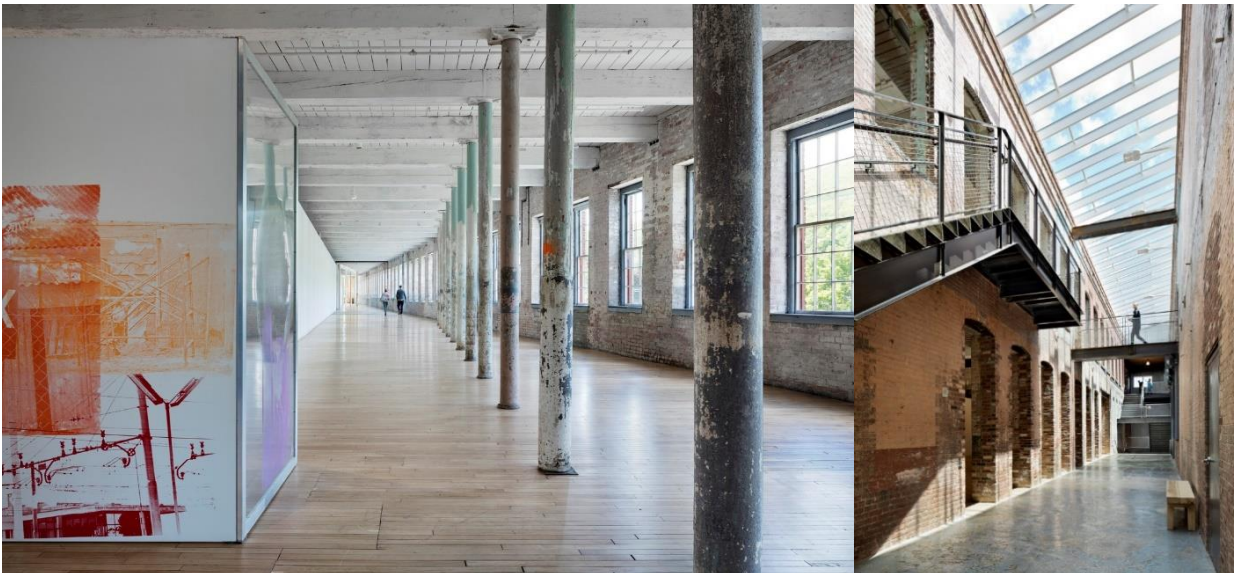


FIGURE 23 (LEFT) CONTRAST OF NEW MATERIALS AND COLORFUL ART HIGHLIGHTS THE EXISTING DECAY (ARCHDAILY, 2017)
FIGURE 24 (RIGHT) A NEW CENTRAL CORE WAS CREATED BY ENCLOSING A GAP BETWEEN TWO BUILDING (ARCHDAILY, 2017)

3.2 La Fábrica

Ricardo Bofill

Sant Just Desvern, Spain

1973-1975

Nature can enhance the sanctuary effect of a ruin. In an industrial space it helps to soften the harsh materials used in the original construction. Bofill uses nature in his project to achieve both, while also presenting the ruin as a sculpture.

History

In 1973, Ricardo Bofill came across a dying cement factory on the outskirts of Barcelona. Shortly after his visit, the factory shut down. It was a massive complex of 30 silos, underground tunnels and machine rooms. He was enticed by the amount of space and wanted to give the factory a second chance at life. So, he began the process of repurposing the space into his personal home and the office for his firm, Taller de Arquitectura.

The Transformation

He simplified the complex by demolishing much of the old structure, leaving only eight silos that were remodeled into office and living space. The simplification allowed him to display some of the intriguing components that originally sparked his interest in the structure: Surreal stairs that led to nowhere, abstract volumes like broken walls standing alone, and spaces of unusual proportions.

Concept

“The human eye can capture objects and forms also beyond the centre of gaze”—is the metaphor Bofill used for recognizing the potential he saw in repurposing the factory. Bofill appreciated the factory as a relic. He saw an opportunity to bridge the gap between the Catalan Industrial period of the 1920’s and the present. Bofill was inspired by contradictions in the space. ‘La Catedral’, a factory hall converted to conference and exhibition space, is a 10-meter-high room with tall windows that mimic a Gothic structure. One gets a sense of spirituality within the crude concrete materiality of the space. On the exterior, nature helps to soften the severe concrete and gives the sense that it is still a ruin (Figure 25). During the construction process, much of the greenery was uprooted but Bofill re-incorporated it by allowing the original ruins to dictate where it grew.

Inside and outside, parts of the original factory become art. Abstract elements are left untouched and become sculptures to be taken over by nature (Figure 26). The conical-shaped silos hang over the office space as sculptures and as reminders of what the building once was (Figure 27). “By rejecting the original functionalist approach of the structure as a cement factory, La Fábrica was now unravelling its allure” (Bofill, n.d.).



FIGURE 25 THE EXTERIOR APPEARS AS A RUIN AS NATURE TAKES OVER IN A CONTROLLED WAY (BOFILL, N.D.)



FIGURE 26 ABSTRACT FORMS ENHANCE THE APPEARANCE OF A RUIN (BOFILL, N.D.)



FIGURE 27 THE BOTTOMS OF THE SILOS HANG AS SCULPTURES INSIDE THE STUDIO (BOFILL, N.D.)



FIGURE 28 VIEW OF LANDSCHAFTSPARK (2020)

3.3 Landschaftspark Duisburg-Nord
Latz + Partner
Duisburg, Germany
1990-2002

Peter Latz approaches the contradiction of factory to place for public enjoyment with the elements of exploration and nature.

History

The recreational park meanders through the ruins of the colossal Thyssen-Meiderich blast furnace. This was once a steel producing plant that operated from 1903 until 1985. Several iron and steel companies were founded in the Ruhr region of Germany in the late 19th century.

Transformation

Residents of the region wanted to preserve the plant for the significant role it played in the industrialization of the Ruhr district. Landschaftspark was one of 100 projects in the district that was meant to improve environmental, economic and social conditions of the old industrialized areas.

Concept

The park is a series of individually functioning parts interspersed throughout the ruins of the plant. Connections are made at various points, sometimes in physical form or sometimes merely visual. The design encourages one to explore. It appeals to the thrill of ruin exploration but allows the visitor to explore the ruins in a safe and ordered way. The park is a good example of

how exploration can augment curiosity about a ruin. Part of the park has been designed to lead you through a section of the ruins on a new cement path (Figure 31 and Figure 32). Along the way, a video installation exhibits the plant in working mode (Figure 29). The passages through the ruins that offer different views and leads one through the video exhibit creates an immersive learning experience.

Nature has been allowed to flourish in this ruin adaptation. It is estimated that around 300 plant and 60 bird species have resettled into the area. Many are exotic plant species that were transported from other countries through iron imports (Industriedenkmal.de, n.d.). Nature can enhance the effect of the ruin and the excitement of discovery by

creating 'hidden gardens' or paths that seem less-traveled (**Error! Reference source not found.**Figure 34).

Like other industrial ruins, Landschaftspark also provides an alluring backdrop for artists' work (Figure 30).



FIGURE 29 A VIDEO EXHIBIT CAST ON THE WALL OF THE RUINS (2020)

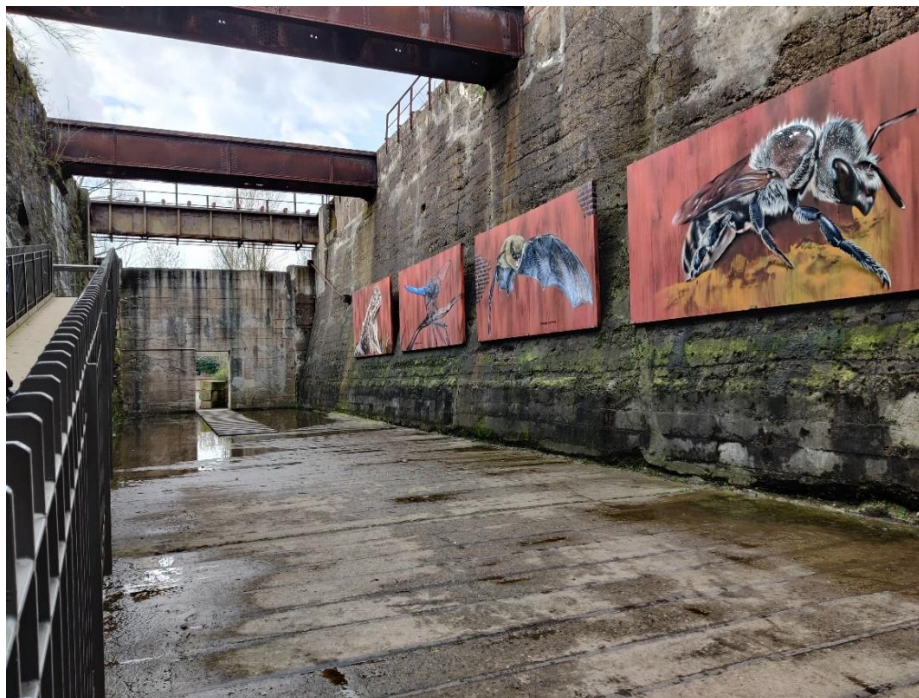


FIGURE 30 ART DISPLAYED ON THE CORRODING WALLS OF THE RUIN (2020)



FIGURE 31 GUIDED PATH THROUGH THE RUINS (2020)



FIGURE 32 GUIDED PATH THROUGH THE RUINS (2020)



FIGURE 33 A SECLUDED PATHWAY (2020)

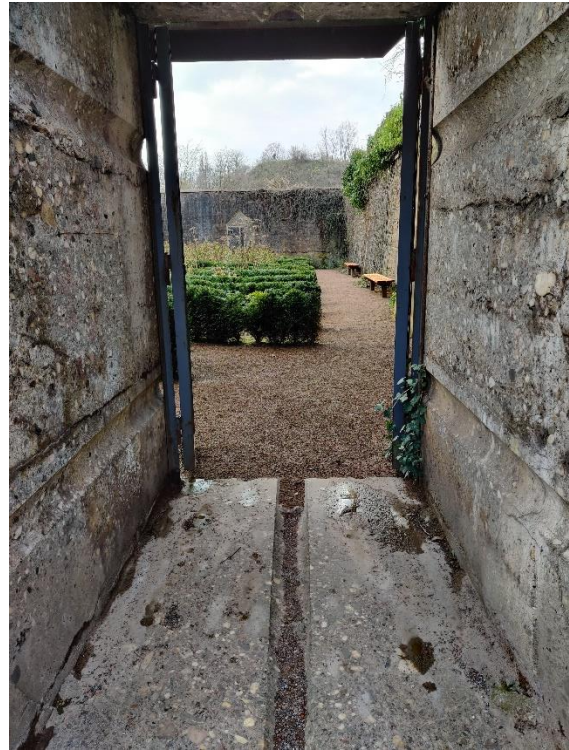


FIGURE 34 ENTRANCE TO A SMALL WALLED-IN GARDEN (2020)

3.4 C-Mine
51N4E, NU architectuuratelier
Genk, Belgium
 2010

The coal industry shaped the city of Genk. This formed a city without a traditional city center. The revitalization of C-Mine helped to fill this void with a vibrant cultural center.

History

In 1901 coal was discovered in Genk and the Winterslag mine (today known as C-Mine) was one of three mining sites built in the area. All three sites closed in the second half of the 20th century with the Winterslag site ceasing operations in 1986.

Transformation

The idea to turn the Winterslag site into a center for creativity started in 2000, and in 2005 C-mine was officially born. The creative hub began by attracting a cinema and then the MAD Faculty (Media, Arts & Design Faculty of the Royal Hogeschool Limburg). The main part of the complex, the energy building, was completed in 2010 by Brussels architecture office 51N4E. In 2012, C-Mine Expedition, an interactive exhibition on the history of the site, was added by NU architectuuratelier.

Concept

51N4E continued with the idea of the cultural center for creativity by including a design center, exhibition space and theaters. They revised the existing T-shape of the

building into a rectangle by adding new volumes that became auditoriums for cultural events. They strengthened the new rectangular shape by adding a terracotta-colored concrete wall around the perimeter (Figure 39). The formality of the industrial floorplan was retained; the formal machine hall remains a central core from which different cultural facilities are accessed. The lower level is strictly programmed while the upper level remains open. The entrance is designated by a new black volume on the façade and leads one into the central core. The entrance foyer on the ground level is dark and machinery remnants are slowly revealed as one explores this space (Figure 37). There are various points of connection to the upper level that is flooded with daylight. On the upper level the original machinery is on full display (Figure 35).

The use of materials is important in this project. The architects connected old and new spaces by extending the existing tiled floor (Figure 38). They faced the challenge of matching the original hand-laid tile. This spoke to the craft work that went into the original space, which was characteristic of this period of industrial history. The architects chose to preserve this heritage by keeping elements like the tiles. The aluminum of the new volumes is simple but respectfully contrasts with the original materials, creating a clarity of layers.

The C-Mine Expedition was added in 2012 and takes you on an underground

experience of the site. Exhibits educate visitors about the history of the coal mine through sight and sound (Figure 36). Art installations in the tunnel also create an intriguing environment. The tunnel starts at the main energy building and ends at the shaft tower in the courtyard, providing a staircase leading up to the top and a stunning view.

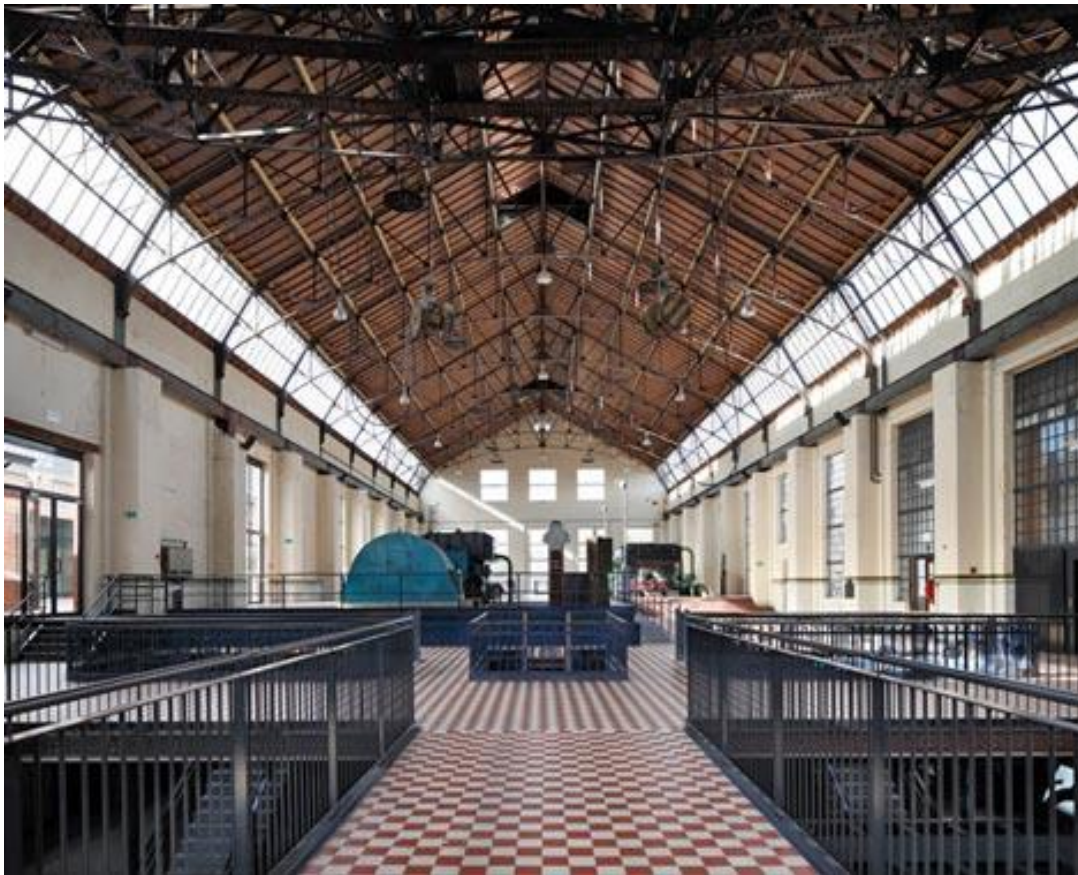


FIGURE 35 UPPER FLOOR OF THE CENTRAL HALL (ETHERINGTON, 2011)



FIGURE 39 THE TERRACOTTA-COLORED WALL UNITING THE OLD AND NEW ELEMENTS OF THE COMPLEX (ETHERINGTON, 2011)



FIGURE 38 TILES ARE USED TO CONNECT OLD AND NEW SPACES (ETHERINGTON, 2011)



FIGURE 37 ENTRANCE FOYER (ETHERINGTON, 2011)



FIGURE 36 C-MINE EXPEDITION (ARCHDAILY, 2013)

FIGURE 40 THE MORAN PLANT IN ITS CURRENT STATE

RETRIEVED FROM: [HTTPS://COMMONS.WIKIMEDIA.ORG/WIKI/FILE:MORAN_PLANT_BURLINGTON_VT.JPG](https://commons.wikimedia.org/wiki/File:MORAN_PLANT_BURLINGTON_VT.JPG)



4. Master Project: Design Proposal for the Moran Plant

Project site: The Moran Plant
Burlington, Vermont, USA

4.1 Significance

The Moran Plant is one of the last relics from the Burlington waterfront's industrial past. In the 1800's, Burlington was the third largest lumber port in the country.

Throughout the 20th century, it evolved into a major transportation hub for petroleum. At the height of this prosperous economic time, the Moran Plant was constructed to power the growing city. Today, it is a landmark eyesore—with the potential to provide an important link to the past.

The Moran Plant was very innovative for its time. It utilized advanced technology and was architecturally forward-thinking in the plant design. It became the first biomass plant in the country when it did an experimental switch to using woodchips as fuel in the 1980's. When it was finally decommissioned, it was a sign that the city was prospering—the capacity of the plant could no longer meet the energy demands of the population.

It has been placed on the National Register of Historic Places in the area of industry for “its association with local and regional electric power generation” and in the area of architecture as a “model, mid-20th century coal-fired energy facility” (Reimann, 2010).



FIGURE 41 AN ADVERTISEMENT FOR PLANT DESIGN FROM J.F. PRITCHARD & Co. (J.F. PRITCHARD & Co, 1947)

The design, by J.F. Pritchard & Co. (Figure 41) is considered distinct in this era of plant design in how the exterior of the building was shaped by the interior function.



FIGURE 42 PHOTOS OF THE MORAN PLANT IN OPERATION. PHOTOS COURTESY OF BURLINGTON ELECTRIC DEPARTMENT (BURLINGTON ELECTRIC DEPARTMENT ARCHIVE, 1952-1976)

4.2 Historical Timeline

History of the Burlington Waterfront and the Moran Plant

Mid 1800's

Burlington is the third largest lumber port in the country.

It is the economic driver for the city where thousands of train and barge shipments are processed. The originally sandy shoreline is repeatedly filled and expanded until the 1950's to make room for industrial infrastructure.

Eventually, over 60 acres are added by the "Public Trust Doctrine" (Figure 43).

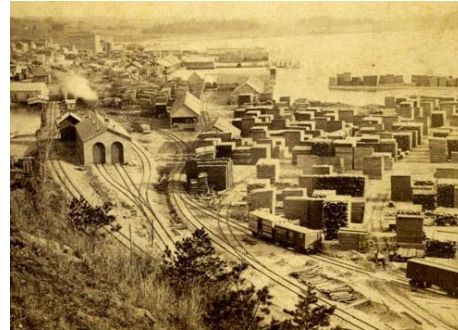


FIGURE 43 THE LUMBER YARDS OF THE 1800'S (STEREOGRAPH B21.33, THE DOCKS)

Early 1900's

The lumber industry begins to decline. Rail travel and transportation is trending, and more rail infrastructure is built at the waterfront. The waterfront evolves with the times into a bulk petroleum facility. Millions of gallons of fuel are shipped by water annually in large barges along the Hudson River-Lake Champlain transportation route. Petroleum transport remains the main industry for the waterfront until the early 1990's. At its peak, 83 storage tanks lined the shoreline (Figure 44).

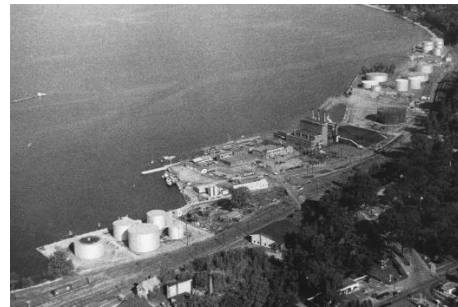


FIGURE 44 LARGE PETROLEUM TANKS LINED THE SHORE (BURLINGTON ELECTRIC DEPARTMENT ARCHIVE, 1952-1976)

1954

The Moran Plant is built.

Electricity demands increase after the end of WWII, so the Burlington Electric Department and the City of Burlington buy waterfront property from the Central Vermont Railway and construct the 30-megawatt power Moran Municipal Generating Station (Figure 45). In 1957, the plant begins supplying coal-powered electricity for the city of Burlington. It is innovative in its architectural design and technological advancements.



FIGURE 45 THE BOILER STRUCTURES UNDER CONSTRUCTION (BURLINGTON ELECTRIC DEPARTMENT ARCHIVE, 1952-1976)

1977

The Moran Plant becomes the first biomass power plant in the country.

The international energy crisis causes fuel shortages and increased prices of petroleum. The employees of the Burlington Electric Company decide to do an experimental conversion from burning coal to using woodchips as fuel. By the summer of 1979, two-thirds of the plant is operating on woodchips (Figure 46).



FIGURE 46 THE MORAN PLANT DURING THE WOODCHIP CONVERSION (MORAN PLANT 1954-1986, N.D.)

1984

As local energy demands increase and federal regulations on emission control become stricter, the Moran Plant is no longer meeting these standards. A new facility, the Joseph C. McNeil Wood-Powered Electric Generating Facility, is constructed at another location in the city (Figure 47).

1986

The Moran Plant is decommissioned (Figure 48).

Late 1980's

Petroleum transport at the Burlington Waterfront ceases as land transportation becomes more economical. The waterfront falls into decay. The yards are filled with scrap metal, abandoned rail cars and rubble, soil is contaminated by petroleum and huge above ground storage tanks are left behind (Figure 49).

The City of Burlington takes action to reclaim the waterfront land. In a Supreme Court ruling, this "Public Trust" land is deemed to be reserved for public enjoyment going forward. Cleanup begins and the area is divided into different stages of re-development.

1988 – Present

Several spaces for public enjoyment are constructed as part of the waterfront redevelopment process:

- 1988 – The Burlington Boat house is completed
- 1991 – Waterfront Park and Promenade built (Figure 50)
- 2003 – The ECHO Lake Aquarium and Science Center. This is a new LEED certified building dedicated to teaching the community about Lake Champlain.
- 2015 – The Andy A_Dog Williams skatepark opens with the iconic Moran Plant as its backdrop. This world-class skate park is an upgrade to the skate park that existed on the site for the last 14 years.
- 2018 – A new Burlington Sailing Center is constructed near the Moran Plant.
- 2019 – The Waterworks Park is completed next to the Moran Plant

2010

The Moran Plant is placed on the National Register of Historic Places. It is described as a "property associated with events that have made a significant contribution to the broad patterns of our history." (Reimann, 2010)



FIGURE 47 THE McNEIL WOOD-POWERED ELECTRIC GENERATING FACILITY (BURLINGTON ELECTRIC DEPARTMENT, N.D.)

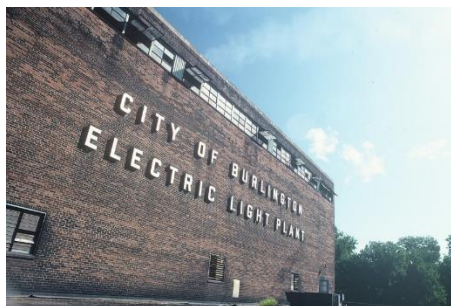


FIGURE 48 THE LANDMARK SIGN ON THE MORAN PLANT WAS PARTIALLY TAKEN DOWN AFTER BEING DECOMMISSIONED (MORAN PLANT 1954-1986, N.D.)



FIGURE 49 TRASH PILE AT THE WATERFRONT (1979-1981) PHOTO BY TOM HUDSPETH, COURTESY OF SPECIAL COLLECTIONS IN BAILEY HOWE LIBRARY, UNIVERSITY OF VERMONT (CUSHING ET AL, N.D.)



FIGURE 50 CONSTRUCTION OF THE WATERFRONT PARK AND PROMENADE IN 1991. PHOTO COURTESY OF SPECIAL COLLECTIONS, BAILEY/HOWE LIBRARY, UNIVERSITY OF VERMONT (BURBANK, 2015)

4.3 City and Site

The city: Burlington

Burlington is Vermont's most populated city and is a popular cultural center and tourist destination. The city is located on the shore of Lake Champlain facing the majestic Adirondack mountains and provides access to outstanding recreation and scenery. It is a vibrant college town that attracts world-renowned art and performances and has an innovative and local food scene.



FIGURE 51 CHURCH STREET MARKETPLACE (2008)



FIGURE 52 VIEW FROM BATTERY PARK OVERLOOKING THE WATERFRONT AND THE MORAN PLANT (LEPORE, 2012)

The site: Burlington waterfront

The once industrial waterfront has completely transformed into a place of leisure and recreation for both locals and tourists. The city reclaimed ownership of the waterfront property in the late 1980's and it was deemed as land to be used for public enjoyment going forward. Massive efforts were undergone to clean up the area.

Since then, the area has been evolving into one of the most popular attractions in the state. Today, it has a boat house and restaurant, a science museum dedicated to Lake Champlain, a bike path that runs for miles along the shoreline, and a pedestrian boardwalk and promenade. It hosts many concerts and festivals throughout the year on the vast expanse of green lawn. Recently added was a new skate park and sailing center adjacent to the Moran Plant. The area around the Moran Plant has only recently started to develop because it was designated as an "Interim Development Area" when re-development of the waterfront first began in the 1980's. The forty acres north of the Moran Plant was designated for "future generations" to decide its development and thus, has grown into a lush natural area that has been largely untouched.

Most of the above ground fuel storage tanks were located around the Moran Plant and to the north of the plant. They were all removed by the 1990's but the low areas

around the former tanks have filled with water and are “naturalizing” as wetlands.

The Burlington waterfront was originally a sandy shoreline that was repeatedly filled to make room for industrial infrastructure. The man-made shore is separated from the rest of the city by a terrain difference of 30 meters. Access to the waterfront is from two major streets, College and Main. Main Street is a main artery that runs the length of the city and College Street connects to Church Street, a popular pedestrian-only area, and the University of Vermont. Thus, the core of the waterfront is where these streets culminate in front of the Boat House (**Error! Reference source not found.**).

Parking is located primarily around this area. The Moran Plant sits at the northern end of the Burlington waterfront. A pedestrian-only road provides a secondary

access point to this end of the waterfront; however, this is not a publicized path and is not usually known to tourists. The northern end is less frequently trafficked due to the main access points being further down and a lack of public infrastructure (until recently). There are also utility buildings that are still in use belonging to Burlington Electric and the Water Department that act as physical barriers between the northern end and the rest of the waterfront. However, with the additions of the new skate park, the sailing center, Waterworks Park and an extensive parking lot in the last few years, the northern end is becoming a more established scene. The Moran Plant sits in the middle of this new growth and thus, has great potential to create a coherency within the area



FIGURE 53 VIEW OF THE SITE. PHOTO BY MATTHEW FIOTI (FIOTI, 2018)

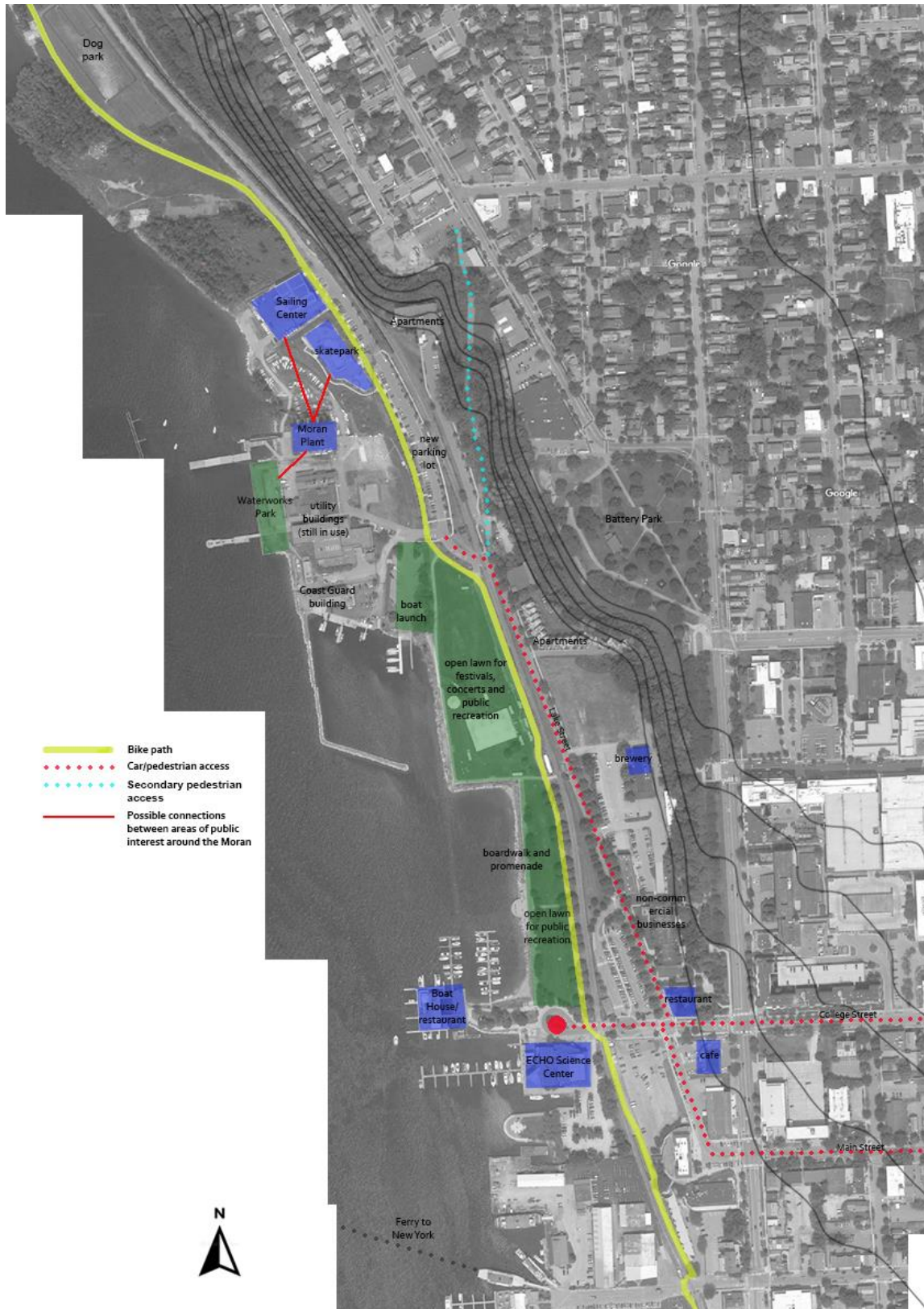


FIGURE 54 MAP OF THE BURLINGTON WATERFRONT WITH HIGHLIGHTED ACCESS POINTS AND AREAS OF INTEREST. THE RED DOT INDICATES THE CORE OF THE WATERFRONT AREA

4.4 Existing

The Moran Plant has sat vacant ever since being decommissioned. It has been partly dismantled—the boilers, turbines, exterior coal conveyor belt, and smokestacks have been removed. The interior steel structure still stands intact with exterior brick walls and deteriorating interior surfaces. Multiple proposals have been made to repurpose the building. Yet the run-down plant still sits empty waiting for the city to decide its fate.

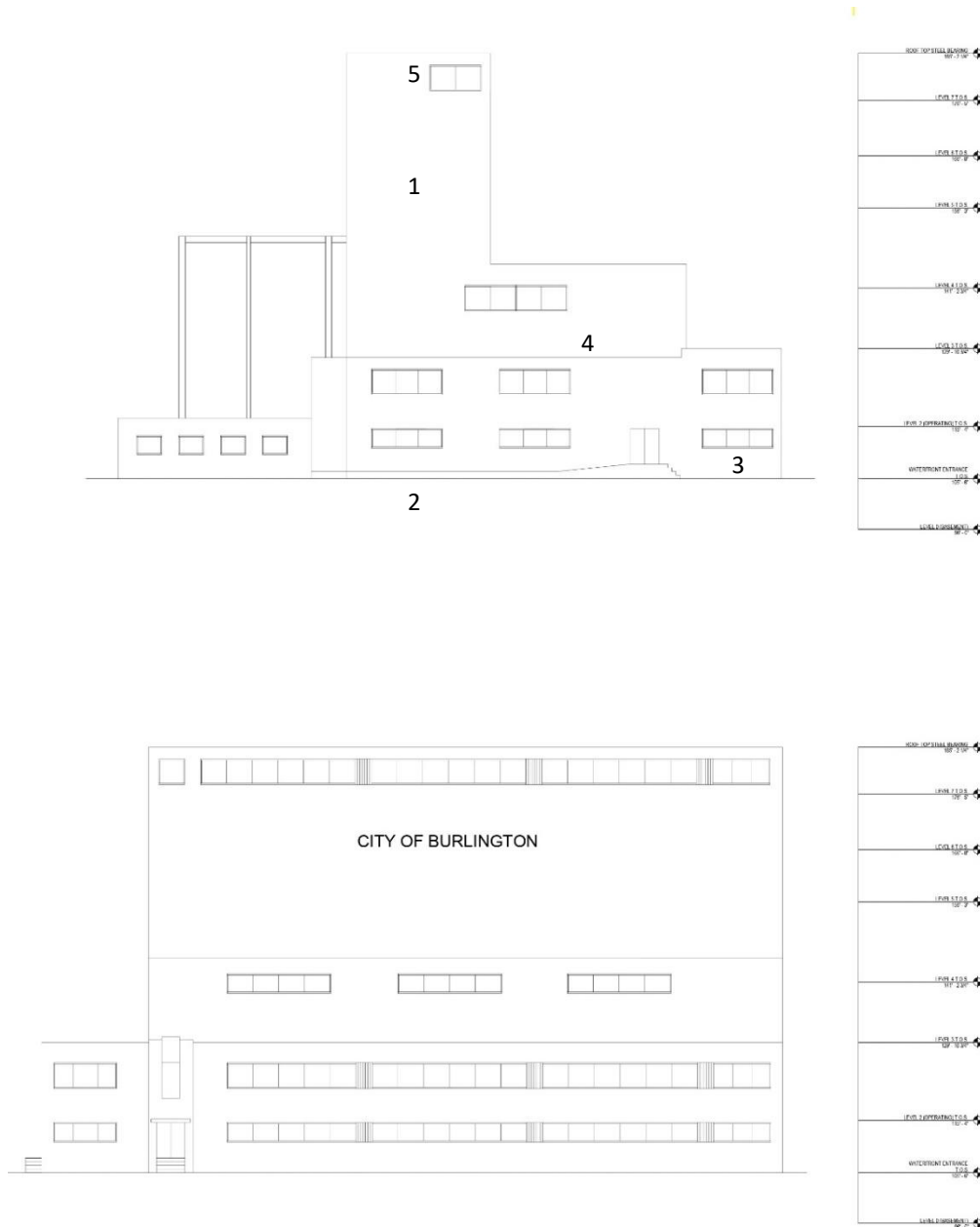


FIGURE 55 EXISTING ELEVATIONS. WEST ELEVATION (TOP), SOUTH ELEVATION (BOTTOM). NUMBERS CORRESPOND TO PICTURES IN FIGURE 56

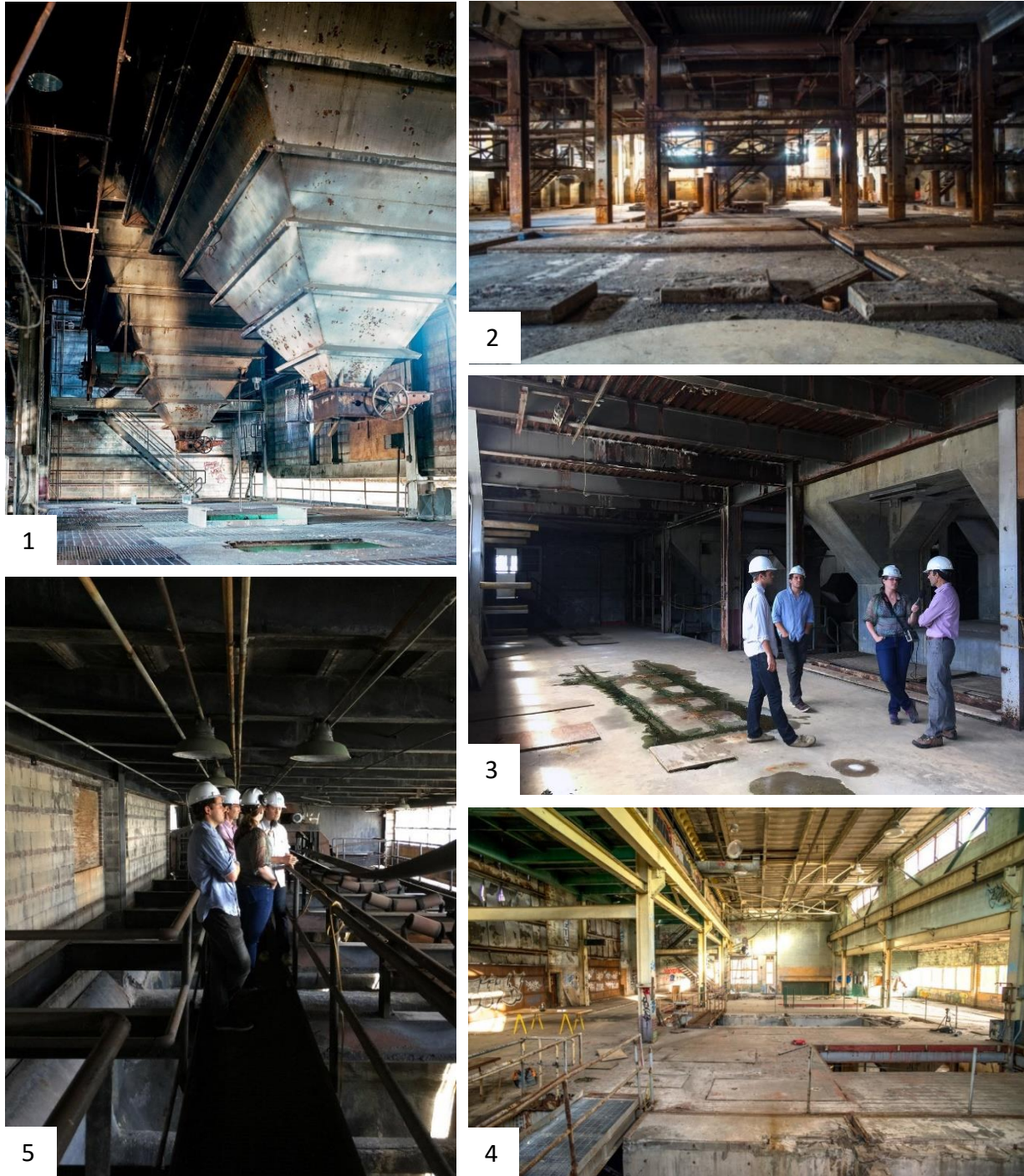


FIGURE 56 EXISTING INTERIOR. COAL HOPPERS (1), BASEMENT (2), SOUTH ELEVATION BLOCK FIRST FLOOR (3), MIDDLE TIER (4), TOP FLOOR CATWALK (5). PHOTOS COURTESY OF NEW MORAN (LINDHOLM, 2015)

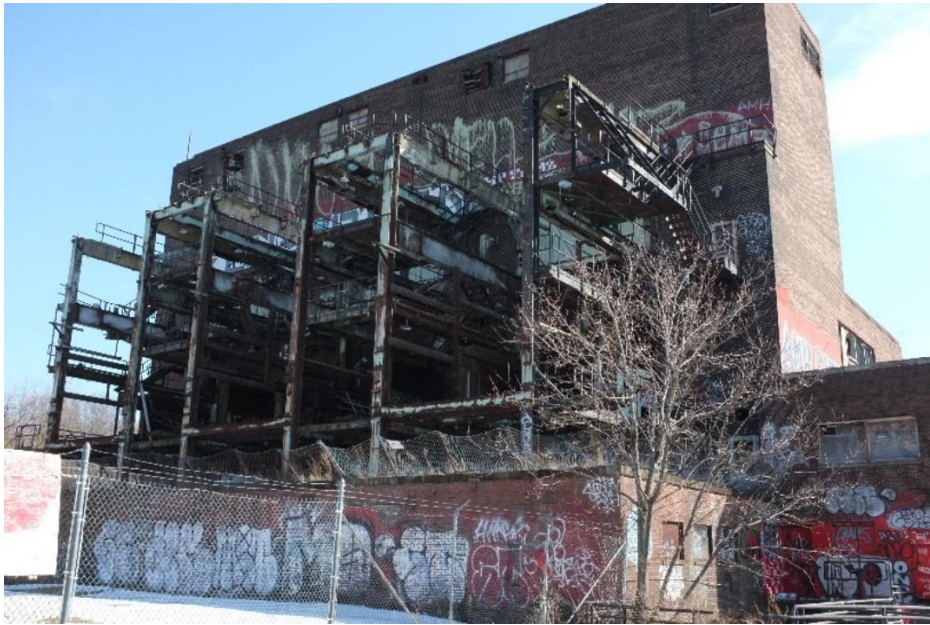


FIGURE 57 NORTH SIDE OF THE MORAN PLANT (2020)



FIGURE 58 VIEW OF THE PLANT FROM THE LAKE. PHOTO BY GLENN RUSSELL FOR VTDIGGER (ASCH, 2020)

5. The Design

5.1 Process

At the start of the project, I was inspired by two key elements. First was the rich history of the Burlington Waterfront and the Moran Plant, which I personally wasn't aware of until researching this site. It was striking to me that having grown up near Burlington, I did not know about this historical period until now. Walking along the manicured boardwalk today, one would never imagine that piles of lumber once sat there a century ago (Figure 59). The Moran Plant is indeed a landmark, but mainly for its size and its obscurity. Questions I knew I had wondered in the past were—what did that massive building used to be? Is it being used? Why aren't they knocking it down? Thus, I decided that it was crucial in my design to bring awareness to the public of this lost industrial heritage and significance of the plant.

Second, the potential that artists saw in the plant, like Mary Lacy, had a profound and positive impact on my view of the building (Figure 60). I was in awe after looking at the photos of her murals. The contrast of her art against the decay of the building evoked beauty, sadness and intrigue. I felt this aspect was essential to preserve in the adaptation of the building.

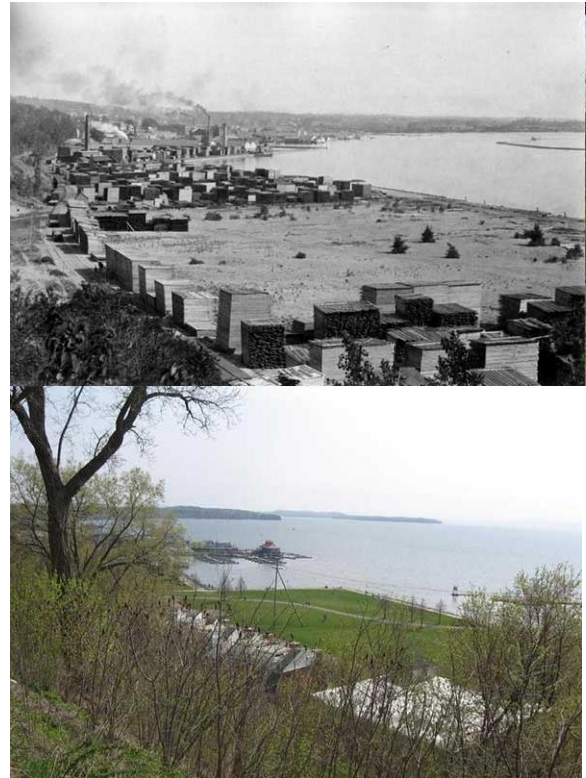


FIGURE 59 (TOP) BURLINGTON LUMBER YARDS 1860-1880 (BOTTOM) CONTEMPORARY PHOTO OF THE SAME LOCATION (FOCAL PLACES IN BURLINGTON, N.D.)



FIGURE 60 (LACY, 2014)

With these driving factors, I began to investigate what an architectural interpretation would be for these goals. The adaptations of Museo di Castelvecchio and Hedmark Museum were inspirational adaptations of ruins. The concept of a trajectory and balance between old and new were influential in my design. A site visit to the Landschaftspark in Germany also sparked my interest in the element of exploration in ruins.

Through photos, I looked for features in the Moran Plant that had a 'picturesque' quality and areas that could harbor the idea of exploration. The starting point for my design began in the basement with the boiler ruins (Figure 61). These are massive concrete structures that once held the boilers. There are three of them that span the length of the building. The scale and openings in these structures inspired my vision to create a path through them. The preliminary sketch shows this path and the exterior spaces I intended to create (Figure 62).

I used the modular steel frame to determine the divisions of open and closed spaces (Figure 63). I chose to open certain spaces to create a transparency in the building and keep other spaces closed for functions like the museum and cafe. The central path and boiler ruins became the core that the spaces are designed around. This initial process led me to the four points of my concept.



FIGURE 61 BOILER RUINS (REIMANN, 2010)

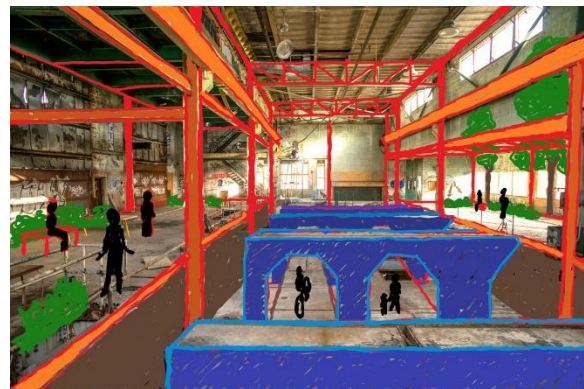


FIGURE 62 PRELIMINARY SKETCH OF DESIGN



FIGURE 63 3D FRAME MODEL PROVIDED BY FREEMAN FRENCH FREEMAN

5.2 Concept

1. Retaining the heritage

The Moran plant was a significant part of Burlington's history and one of the last remnants of the waterfront's industrial history. I want to incorporate a museum dedicated to this era of history to create an awareness of the waterfront's past and the influential role of the Moran plant.

2. Displaying the 'beauty of decay'

The 'beauty of decay' has made the abandoned Moran plant a muse for many artists over the years. I want to preserve this ambiance by leaving elements intact that highlight the 'rawness' of the abandoned plant. I also want to provide spaces for artists to continue to be inspired and display their art.

3. Integration into the site

The steel frame allows the flexibility to create and remove levels and to open and close spaces. This enhances the experience of the ruin by allowing nature in and creating both interior and exterior spaces from which to explore the ruin. Stripping back the façade to the steel frame at various points takes away the monolithic and imposing nature of the building and helps to integrate it into the site. It becomes more inviting to the passerby while keeping it as a landmark monument.

4. Exploration with trajectories and views

Creating positive and negative spaces within the steel frame opens possibilities for more interesting ways to explore the building, highlighting the intrigue of the ruin. These routes will allow people to experience the space at different levels, with different views, and indoors and outdoors.

5.3 New Program

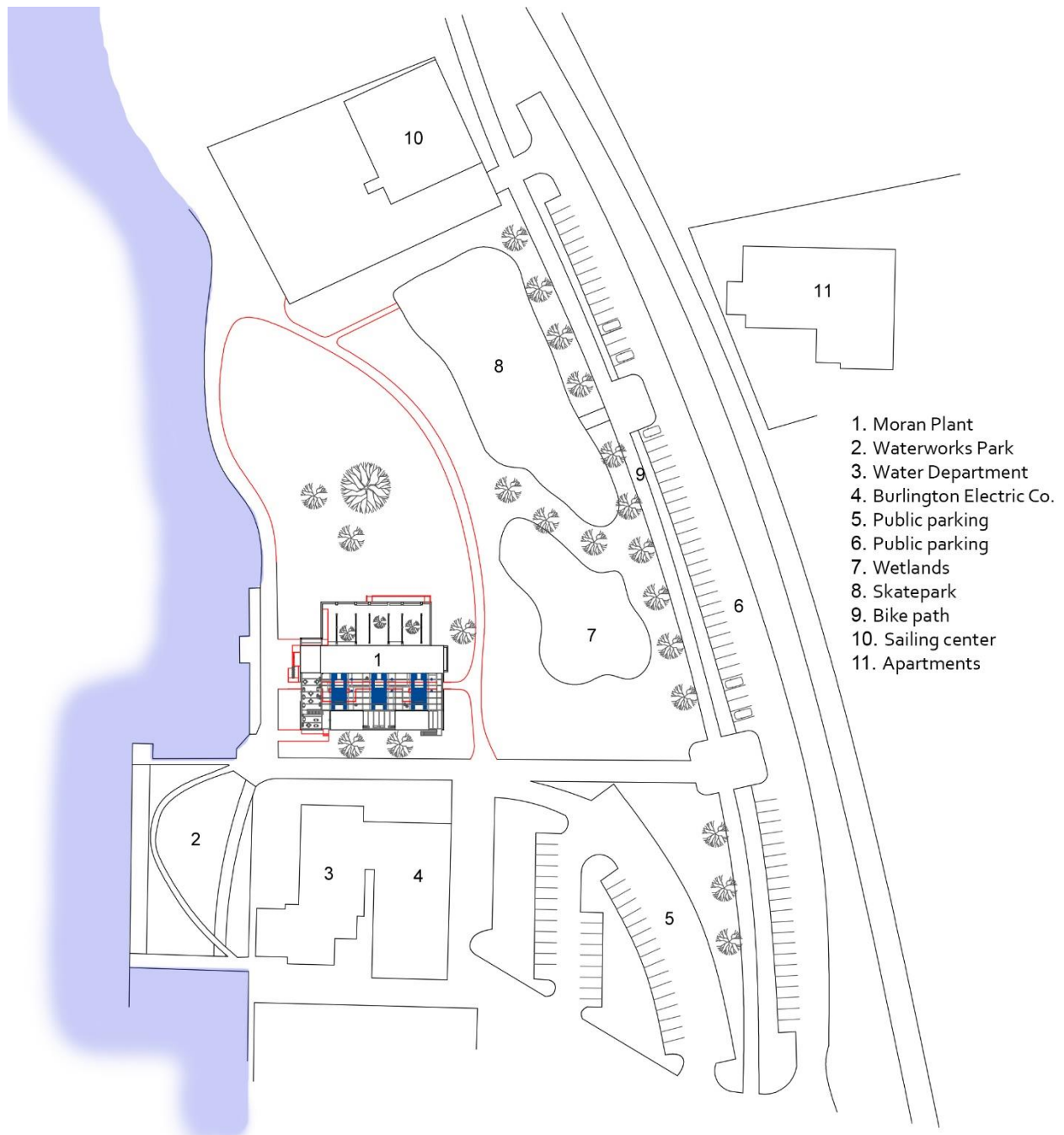


FIGURE 64 CREATING A COHERENCY. THE MORAN PLANT IS CENTRALLY LOCATED IN THE NEWLY DEVELOPED NORTH END OF THE WATERFRONT. IN MY PROPOSAL, THE TRANSPARENCY OF THE BUILDING WILL CONNECT THE SITE VISUALLY AND NEW PATHS SHOWN IN RED WILL CONNECT THE SITE PHYSICALLY.



FIGURE 65 SECTION LOOKING EAST WITH PROGRAM AND CONNECTING VIEWS IN THE BUILDING (SHOWN IN DASHED LINE)

The purpose of the museum is to educate the community about the Moran Plant's significance and about the industrial era of the Burlington waterfront. It encompasses the entire 'tower' area of the building, which is the tallest part of the three-tiered structure. Visitors can learn about the Moran Plant and industrial era from exhibits and by experiencing the heritage architecture.

1. Entrance Hall (not shown in section): The museum entrance is on the west elevation facing the waterfront. It connects to a pedestrian path that goes along the water and links Waterworks Park and the Sailing Center. The original brick remains on the entrance facade with a new front entryway to attract attention to the museum. The inside of the entrance hall is a double height space with exposed steel structure on the interior. There is a visual connection to the main gallery level which begins on the second floor. Visitors have the option to take the stairwell or the elevator to this level. The elevator follows the path of the original production of coal from the conveyor level to the boiler. From the entrance hall,

there is also a visual connection to the area under the 'tower' which remains unfinished and holds temporary art installations.

2. **Main Gallery:** The main gallery of the museum sits on the second level of the 'tower' and overlooks the entrance hall. It is a total of 7.5 meters high, which is the original height of the space that used to be where the coal fed down from the hoppers into the boilers. Being such a tall space, I've decided to divide it with a mezzanine level that sits 4.5 meters high on existing beams that run through the space. This adds more gallery space and another interesting perspective from which to view the space. The southern facade of this space is enclosed with windows spanning across the columns and beams. The window façade provides a visual connection down into the boiler structure 'ruins'.
3. **Hopper levels:** The coal hoppers are part of the museum and span two levels above the main gallery. Visitors can travel up through the hopper levels by the stairwell at the far end of the gallery or by elevator. There is a visual connection to the hoppers along the trajectory to the upper catwalk level. The facades of these levels remain closed to focus the attention inward. The original 'City of Burlington' logo remains on the southern facade to keep the building as a landmark. An artistic representation of the shape of the hoppers is implemented on the southern facade.
4. **Catwalk level:** Now part of the museum, the top of the tower was originally a narrow catwalk that spanned the entire length of the building. This allowed access to the conveyor belt that fed coal into the hoppers. The catwalk and conveyor belt remain intact, but the catwalk is re-constructed (wider and safer) for visitors to access. From the catwalk visitors can experience the vastness of the hoppers and understand the amount of coal that was processed in this facility. The facades are opened with larger windows to enjoy the view from this height of 24 meters and to provide a greater transparency to the monolithic nature of the structure.
5. **Basement level (Boiler Ruins/Art Installations):** The boiler ruins are concrete structures that once supported the boilers that were removed when the building was decommissioned. They sit in the basement of the second tier of the building. The boiler ruins become part of a walking/biking path that runs through the building, connecting the east and the west sides of the site. This entire second tier is opened to the frame to make it an outdoor experience and to increase the transparency of the building. The path through the boiler ruins has a couple of outlets that allow the visitor to go deeper into the ruins and through the art installations. The boiler ruins are open to the space under the main gallery hall where the temporary art installations will be.

6. Cafe

The new cafe sits in the previous administration part of the building. Visitors enter where the main entrance to the plant originally was. They arrive onto an outdoor patio, which is opened to the frame and looks out at the lake. A stairwell from this level of the patio takes one to the upper patio level which looks over the boiler ruins on one side and provides a stunning lake view on the other. The visitor enters the cafe and descends a half meter down a ramp, which heightens the experience of exploring the depths of the 'ruins'. The entrance level and cafe floor are the original levels. The inner facade of the cafe is completely opened to the boiler ruins with windows. Sitting areas are incorporated into parts of the concrete ruin structure. The outer facade remains the same (with new inserts in the original window frame). The windows on this facade are high which helps to direct the focus inward on the ruins and away from the adjacent facade of the electric facility. The rough concrete block wall and steel columns remain as the inner finish.

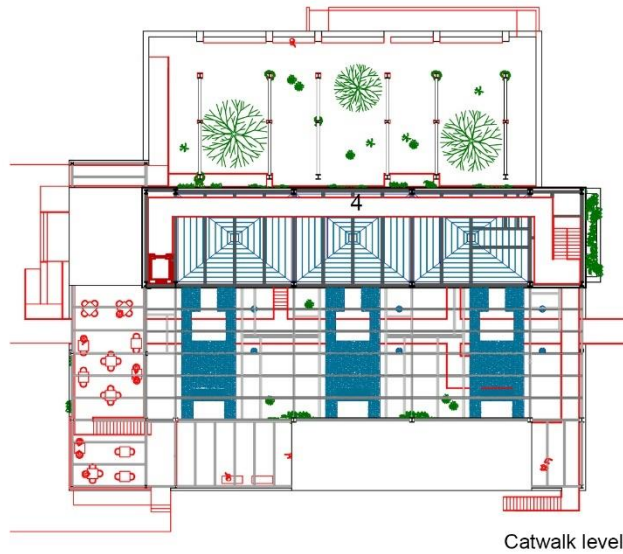
7. Rooftop Garden

The rooftop garden provides another outdoor experience for the public. It spans the entire top of the cafe and overlooks the boiler ruins. The original southern façade and the roof are 'deconstructed' as the building approaches the water. The first section retains the roof and outer facade (with the window openings but no glass). The second section retains the roof but only a lower portion of the outer facade. The last section is open to the sky with a lower portion of the outer facade. It is a gradual reveal to the waterfront while focusing one's attention on the inner ruins along the way. The remnants of façade and roof provide areas of shelter though the façade generally becomes less functional and more sculptural, enhancing the ruin-like feel. A walkway at the eastern end connects the rooftop garden to the museum.

8. Sculpture Garden

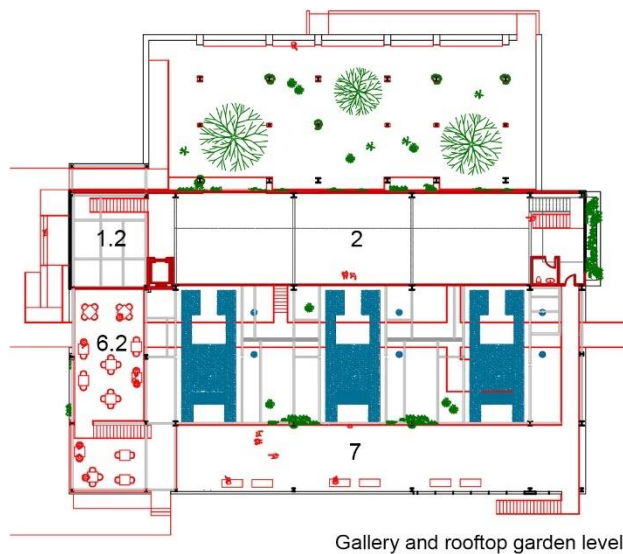
On the northern façade, there is currently a complex system of beams and columns that once led the coal up to the top-level conveyor belt. In the proposal, most of the structure is removed to leave a simplified frame. This becomes an outdoor ruin that will eventually be taken over by nature. Additional space for art installations is available in this space and it is visually connected to the art installation space under the museum gallery. New grate flooring covers the corroded foundation floor to provide a safe yet transparent walking area.

FIGURE 66 PLANS OF DESIGN PROPOSAL

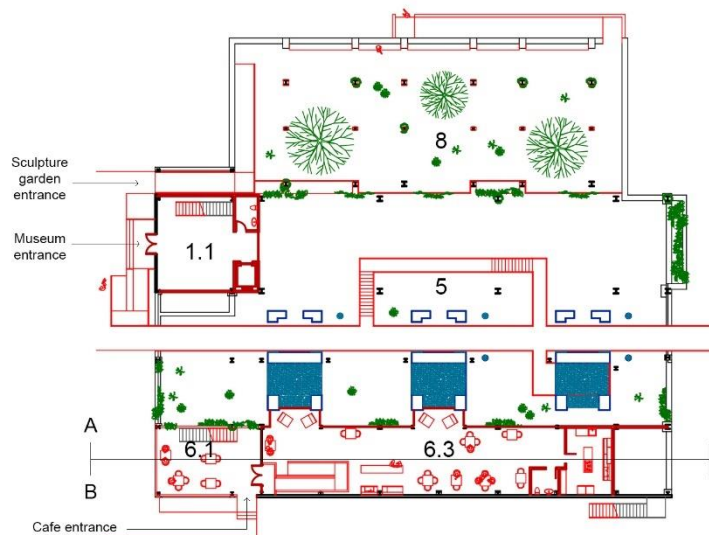


Catwalk level

- 1.1 Museum entrance level
- 1.2 Second level entrance hall (open to below)
- 2. Museum gallery
- 3. Coal hopper levels (not shown)
- 4. Catwalk level
- 5. Boiler ruin path/art installations
- 6.1 Cafe outdoor terrace
- 6.2 Cafe rooftop terrace
- 6.3. Cafe interior
- 7. Rooftop garden
- 8. Sculpture garden



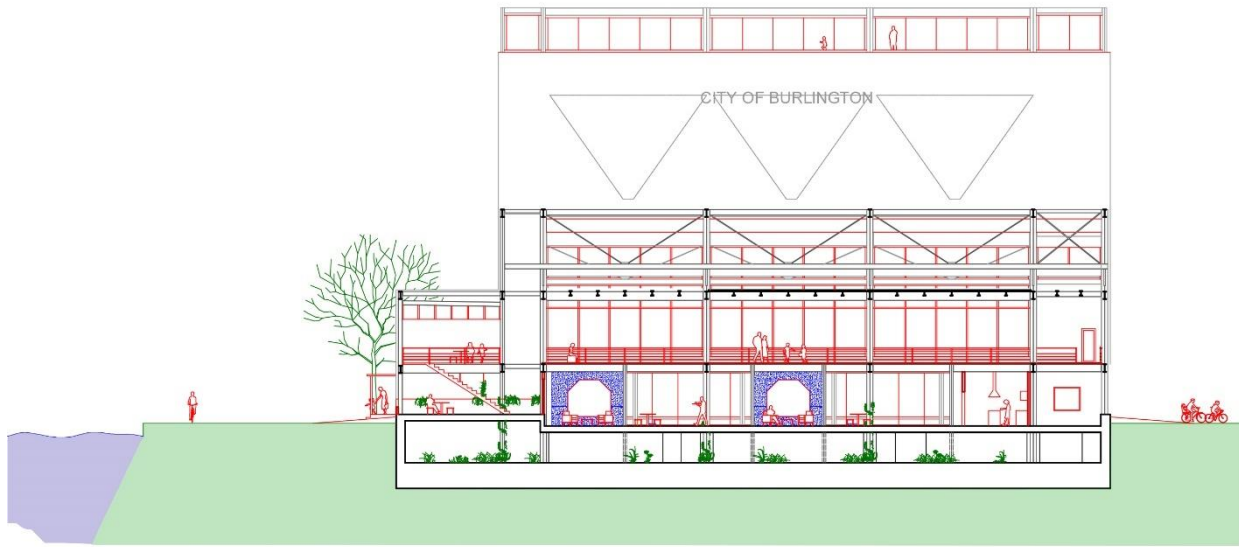
Gallery and rooftop garden level



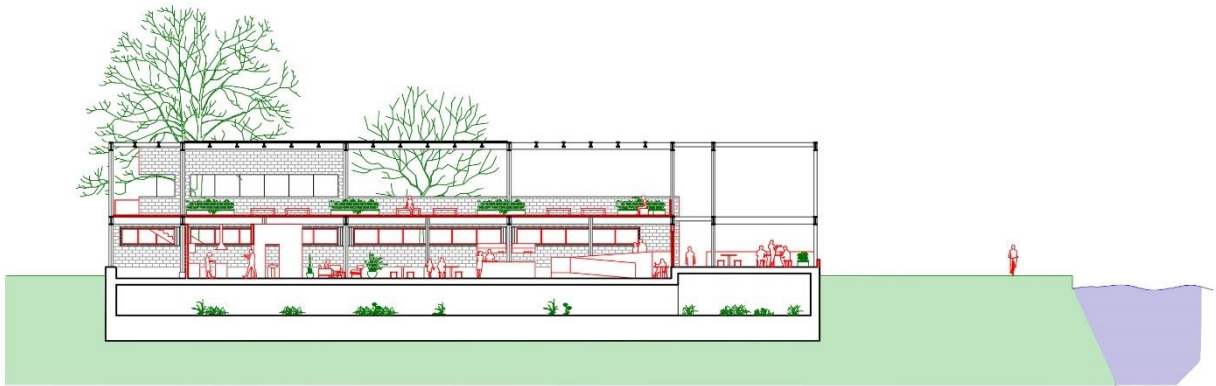
Entrance level plan



FIGURE 67 SECTIONS A AND B (THROUGH THE CAFE)



Section A looking North



Section B looking South

Conclusion

The research and design process of the master project has been an enlightenment into the meanings of a ruin, which are critical in adapting an industrial space. I've come to realize that the poetics of the ruin lay in the contradictions. In an adaptation of an industrial space, the contradictions are powerful:

Machine	→	Human
Fear	→	Discovery
Ugly	→	Beautiful

The best way to adapt a ruin into a fully functioning space is to present the contradictions harmoniously. I do not believe it means erasing all the negative connotations of a ruin but balancing them with positive ones. For example, the decay of the ruin should remain but should be presented in a safe and accessible way. Any negative feelings the ruin evokes, like fear or sadness, is critical for reflection, in understanding the past, and in adding to the intrigue of the ruin.

A few key strategies in architectural adaptations can work to balance these contradictions:

- Through Art
- Through Nature
- Through Exploration

Elements of art can highlight the physical appeal of decay in an industrial ruin (the 'picturesque') through contrast. Art can also bring in a human element. Industrial spaces promote art and art promotes industrial spaces.

Nature can soften the harshness of an industrial space. It helps to generate the picturesque quality of decay and it brings life into a lifeless space.

Elements of exploration can turn the fear of an abandoned space into discovery. Creating a trajectory can be a powerful way to experience a ruin. The natural intrigue that a ruin possesses can be enhanced by adding architectural elements that encourage exploration, learning and discovery.

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