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# Interdependencies and the Shaping of Place

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## The Hoover-Mason Trestle, Bethlehem, Pennsylvania

When we were asked to contribute an article to Cloud-Cuckoo-Land’s second issue to be published on the relationship of Architecture and Landscape Architecture, we jumped at the opportunity to look back at our project—the *Hoover-Mason Trestle* or *HMT*—now a year post-construction, through a fresh lens, and share our conceptual process and understanding of creating Architecture and Landscape Architecture. Within our practice *Wallace Robert & Todd (WRT)*, we collaborate across disciplines on a daily basis. With origins rooted in the necessity of sustainability and a dedication to improving the quality of the natural and built environments, our principles stem from our ambition to design livable spaces that reflect local heritage, culture and human values. However, as a disclaimer, the opinions presented below on the relationship between Architecture and Landscape Architecture are purely the viewpoints of the authors of this article, a Landscape Architect and an Architectural Designer who worked on the *HMT* project team.

### Architecture or Landscape Architecture?

As a landscape architect and an architectural designer in a multi-disciplinary practice, much of what we do is about collaboration and storytelling. It can be found in the way we design, the way we talk about that design, and ultimately the way we experience design. For us, Architecture and Landscape Architecture are more than just two distinct disciplines. If Architecture is defined by the physicality and design of a built form, and if Landscape Architecture is defined by the design between the built and natural environments, we must question: where does one end and the other begin? These broad terminologies, “Architecture” and “Landscape Architecture,” do little to characterize specific spaces and the way space can be experienced. If we, for a moment, forget the social construct that architecture is built enclosure, and landscape architecture is built nature, and look at the two in terms of how we experience place, we can postulate that the idea linking the two is consequentially

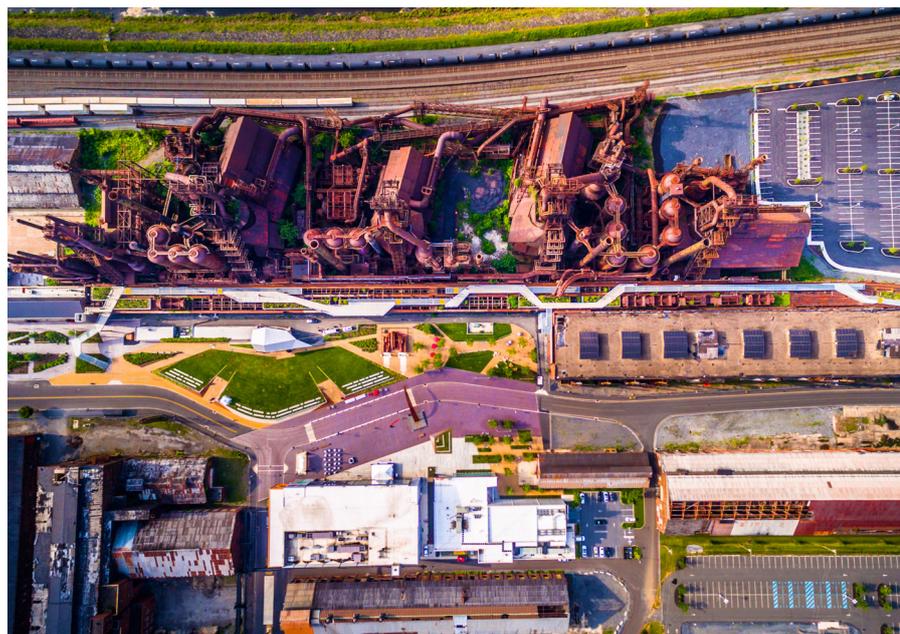
architecture, having or conceived of as having a single unified overall design, form, or structure. But should the overlap between the two, when we remove our socially constructed semantic understanding of these two words, be defined in this way?

Rather than limit ourselves to the broad and distinctive definitions of what is inside versus outside, or architecture versus landscape architecture, we see the seamless design of spaces as a vehicle for the communication and dissemination of information, stories, art and culture. We measure the success of design by the ability of that design to influence one's appreciation or understanding of how a project can take a challenge and offer a solution that tells a story while driving social, economic and environmental change. Our

**Fig.1** 2005 Aerial Photograph, 10 years after the Bethlehem Steel Plant ceased operation: an abandoned site.



**Fig.2** 2015 Aerial Photograph, 20 years after the Bethlehem Steel Plant ceased operation: a changing landscape.



hope is that in removing the label of “Architecture” or “Landscape Architecture,” and redefining the separation, or lack thereof, between these two practices, we can develop a new spatial narrative about the performance and experience of spaces in transition. Whether a project is considered an architectural landscape or a landscape of architecture, the project is ultimately defined by a contextual manipulation of the terrain and spatial conditions. If we begin to describe spatial relations based on the performance and experience one has in the public realm, we begin to design beyond the categories of architecture and landscape architecture, expressing that the two are interdependent, intertwined and part of a larger, contextually designed, relationship.

If we delve into a more critical discourse of the relationship between Architecture and Landscape Architecture that is directly related to the project we will present, we ask ourselves a few more specific questions: Is an abandoned industrial site, devoid of people, and secluded from contact, a piece of architecture, or does its deteriorated state become a part of a wild and resilient landscape? When nature intervenes on an abandoned site, where do we draw the line between what is Architecture and Landscape Architecture? And in turn, how do we design an intervention that traverses a place lacking a distinct threshold between the two? For ten years, the *Bethlehem Steel* site sat abandoned, isolated and inaccessible, as a landmark in the City of Bethlehem, Pennsylvania (fig. 1). Overcome by nature, and obscured from access, but not from view, the site matured as an unwelcoming landscape, a ruin of an industrial giant. Recent revitalization efforts in Pennsylvania’s Lehigh Valley have put a spotlight on this site, which stood out as one of the few remaining abandoned steel plants in the United States. In an effort to transform this abandoned site into a public space and community amenity, we aimed to convert this leftover remnant, and forgotten subscript of the former *Bethlehem Steel* plant, into an accessible site that would reflect the history of the place, the people who worked there, and the industrial narrative of this steel producing machine. This project strives to create spatial experiences where there are no lines between Architecture and Landscape Architecture. Where is the threshold, between a steep slope and an architectural wall, or a building envelope or a screen or fence? Does the physical form of an element, for instance the height of an architectural wall versus a site wall, or a gate versus a door, define whether that form is Architecture or Landscape Architecture?

The success of a seamless design is that it is universally accessible, permeable, and enhanced by the details that define the relationship of the components. The notions hypothesized by this journal, that “the terms ‘Architecture’ and ‘Landscape Architecture’ are not sufficient when it comes to define how spaces can be experienced,” could not be truer than in the way this project has been realized. Rather than question or adhere to the socially constructed semantics of what constitutes “Architecture” and “Landscape Architecture,” the collaborative efforts of a project to create a unified spatial experience should not be defined by a single typology or category, but rather by the outcome of the design, to influence and impact one’s experience in a space; a changing landscape.

The development of the *HMT* was the result of a collaborative design process to create an accessible, programmable and enjoyable public space for a variety of user groups. This placemaking investigation was the result of a decade-long master-planning effort and design process to transform the site of the former *Bethlehem Steel* plant, America's second-largest steel producer and largest shipbuilder in the twentieth century, into a vibrant and active Arts and Cultural Campus that reflects the local heritage and revitalizes the site.

## Historical Background

The *Bethlehem Steel* plant was a powerful symbol of American manufacturing leadership in the Industrial Revolution, a true representation of the confluence of natural resources and technology. As the plant expanded into an industrial giant, additional iron ore handling facilities were necessary to increase production. The over-crowding of buildings around the blast furnaces made it impossible to site such a facility, thus the *HMT* was developed to move carloads of ore from a new handling facility a half-mile from the iconic colossal blast furnaces. Named for the engineering firm that designed it, the *HMT* allowed electrically powered rail cars to deliver 90 tons of iron ore daily to each of the massive blast furnaces for almost a century. Completed in 1907, the *HMT* connected the ore yards, once located directly east of the project, to the blast furnaces at the heart of the steel plant. The configuration of the rail tracks on the Trestle included a third rail to accommodate a different size of rail car for the transportation of coke and lime-stone to the furnaces. The Trestle was originally commissioned in 1905 by Charles Schwab, and from its completion in 1907 until the Bethlehem Plant ceased operation in 1995, and eventually closed its doors in 1997, the dual gauge HMT functioned effectively and consistently, and still stands quietly yet prominently as a reminder of its industrial magnificence.

The site is located in the South Side of Bethlehem, Pennsylvania, along the Lehigh River in Pennsylvania's Lehigh Valley. This strategic location, including an extensive network of railroad lines, made *Bethlehem Steel* readily accessible to ports in both New York City and Philadelphia. The 1,800-acre site sat vacant for over 10 years after the last pour in 1995, and has been one of the largest brownfields in the United States. Now, the site is once again a focal point for the City of Bethlehem and its 75,000 residents, making it the seventh largest city in Pennsylvania.

## A Strategic Masterplan

The development of the *HMT* as a civic and cultural space is a continuation of the Redevelopment Authority of the City of Bethlehem's efforts in revitalizing the former *Bethlehem Steel* site. It is part of the 10-acre SteelStacks Arts and Cultural Campus within Bethlehem Works, a 126-acre parcel established as a 20-year tax incremental finance district (TIF) in the City of Bethlehem. The campus is surrounded by buildings and industrial structures that chronicle the city's—and the nation's—manufacturing power during the nineteenth

and twentieth centuries. The campus accommodates spaces for nonprofit arts, entertainment and cultural organizations. The organizations' campus facilities, such as *ArtsQuest*—a nonprofit organization providing access to art, culture and educational programs for the diverse residents of the Lehigh Valley; the Bethlehem Visitor Center—offering interactive displays highlighting the history, culture, recreation and attractions of Bethlehem and the Lehigh Valley; and PBS39—a community-owned public television station serving eastern Pennsylvania, have enabled these enterprises to expand their offerings with revenues generated by an ever-increasing audience base drawn to this dynamic, inviting and accommodating destination.

The creation of the campus was a key element in a strategy that sought to redevelop all of the abandoned facilities within this 126-acre parcel of land. The Commonwealth of Pennsylvania awarded a gaming license in 2006 to the *Las Vegas Sands Corp.* for the construction of a casino, hotel, retail and conference complex at the east end of the site. Casino operations began in 2009, and provided important tax revenues to underwrite the development of the *SteelStacks Arts and Cultural Campus* at the west end of the site, which officially opened in July 2011. Due to the successful operation of both the *Sands Casino Resort Bethlehem* and the *SteelStacks Arts and Cultural Campus*, private, tax-ratable development is currently underway in many of the abandoned buildings and open spaces around and between these anchor developments. *The SteelStacks Arts and Cultural Campus* development aims to preserve historic structures, create new facilities, and resurrect the site's former economic vitality, bringing the community back to the *SteelStacks*. Visitation and employment at the campus is revitalizing the adjacent South Side neighborhood. Through the design and planning of much of the central core, including the *SteelStacks Plaza*, *Levitt Pavilion* and amphitheater, and the transformation of the *HMT* into a pedestrian-oriented promenade, *WRT's* implementa-



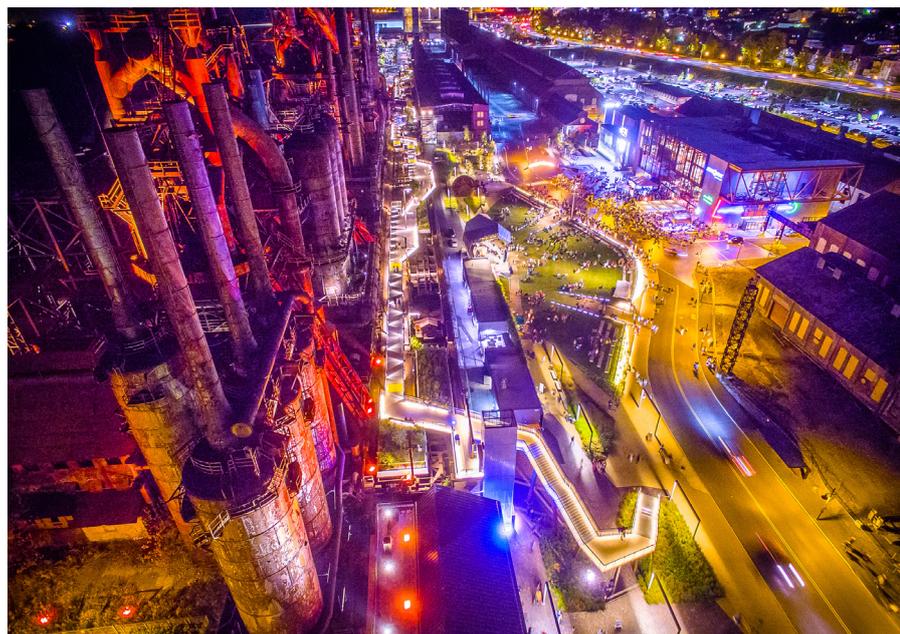
**Fig. 3** Entrance of the *HMT* pedestrian-oriented promenade, elevated 36 feet above the ground.

tion projects have played an integral role in this revitalization (figs. 2, 3). The site planning and open space design of the central-core directly in front of the *SteelStacks* were fundamentally important in the unification of this new campus, framing the abandoned blast furnace structures as fantastic new sculptures and uniting new and old architectural elements. The open space elements of the landscape respond to one's presence in the foreground, allowing individuals to experience a scale of design elements that are familiar to them against the spectacular backdrop and physical scale of the furnaces (fig. 4). Groves of honey-locust trees at the western and eastern ends of the campus frame the open, grassy amphitheater lawn at the center of the campus, creating a unified composition along the northern edge of the site. The main intervention

**Fig. 4** Multiple scales of spaces offer unique glimpses at both the existing structure and new design.



**Fig. 5** Aerial image of the *SteelStacks Arts and Cultural Campus*, including the inflection of East 1st Street which focuses the campus on the *Levitt Pavilion* stage with the *Steel Stacks* and *HMT* as a backdrop.



at the center of the site was the inflection of East 1st Street, from what was once a straight corridor into a bowed variation, which receives the audience at an intersection with *Founder's Way*, creating a focal point that inspires and strengthens the community and the focus on the *Levitt Pavilion* stage (fig. 5). The inflection in the road not only worked as a means to slow traffic, creating a safer pedestrian experience, but allowed for a larger amphitheater for the *Levitt Pavilion*, all of which were designed and implemented by WRT, and evidence that strategic programming can reform infrastructure.

The sequencing strategy of these public spaces supports a pedestrian circulation through an ever-changing and flexible composition of site programs at multiple scales. The repetition of materials, elements and forms in both the Architecture and Landscape Architecture, serve to fuse the campus through a series of large-scale modulations, and small-scale details, that enhance one's understanding and experience of the site. Each plaza and activity area has an individual identity, engendered through subtle changes in grade, materials and textures, using shading during the day and lighting at night to create views and define spaces. The materials and elements found here were layered to uncover the site's rich history and new palette of buildings and spaces. The landscape is hardest against the new built forms, but grows steadily softer as it approaches the SteelStacks, allowing visitors to circulate at the threshold between built and natural forms.

In a similar spirit, the nearly half-mile long *HMT*, elevated 36 feet off of the ground, connects two major developments on the site, the *Sands Casino Resort* and the *SteelStacks Arts and Cultural Campus*. The *HMT* reopened in June of 2015 as a repurposed pedestrian-oriented promenade that encourages circulation, historic interpretation and passive recreation uses. The project was developed to preserve the historicity of the site, its industrial structures and the greenery that has grown throughout the *HMT* since *Bethlehem Steel* closed over 20 years ago (fig. 6). The elevated park affords up-close glimpses of the massive historic industrial structures as well as spectacular views of the overall site and its surrounding community. The *HMT* promenade has been a key component in the placemaking efforts to enhance development throughout the City of Bethlehem. Breathing new life into the campus, the Trestle once again provides an up-close, interpretive, and powerfully personal view of the elaborate and complex steel plant and its iconic blast furnaces. To walk on the *HMT* is to walk through the industrial archeology of American history.

## Understanding the Task

*WRT's* designs are rooted in a detailed understanding of the historical and narrative contexts in which we are working, and defined by storytelling and creating narratives that enhance one's contextual experience on a particular site. For us, that is the essence of placemaking.

Through data collection, historical analysis, and community engagement we were able to gain insight in the complex system of relations and interactions that would inform our design process, as well as the commanding and



**Abb. 6** Industrial structures remain as historical documents of different time periods, amongst a palette of greenery, both new and old.

emotional connection that many have with the site. As examples, below are excerpts from the interpretive signage found throughout the project, depicting the historical significance, technical details and descriptive first-hand accounts from those who worked on the site. The information gathered, by WRT and sub-consultant *Bluecadet* with the assistance of the City of Bethlehem and the *Bethlehem Heritage Coalition*, comes from a variety of sources and individuals, including: *Delaware & Lehigh National Heritage Corridor / National Canal Museum, Historic Bethlehem Partnership, National Museum of Industrial History, South Bethlehem Historical Society, South Side Initiative / Lehigh University, Steelworkers' Archives*:

The story of *Bethlehem Steel* begins in the 1840s when the Lehigh Canal and the coal it carried triggered the American Industrial Revolution in the Lehigh Valley. In the 1850s, newly-constructed railroad lines like the Lehigh Valley Railroad, needed iron rails. Robert Sayre, chief engineer of the Lehigh Valley Railroad, formed the *Bethlehem Iron Company* in the 1860s and hired John Fritz, a self-taught engineer, to construct his innovative rolling mills to make stronger rails. Facing competition from steel producers in England, and later local producers, Fritz and Sayre began making steel and steel rails in the 1870s, then expanded into forging armor plate and guns for the US Navy in the 1880s. In 1901, shareholders Joseph Wharton and Charles Schwab took control and restructured the company with the plan to develop it into a world-class steel producer. In 1904, the name was changed to the *Bethlehem Steel Corporation*. “I intend to make Bethlehem the prize steelworks of its class, not only in the United States, but in the entire world,” stated Charles Schwab, *Bethlehem Steel* Chairman, 1904–1939. The ingredients for iron-making were a small piece of the large machine that was the *Bethlehem Steel* plant. The five blast furnaces that remain today were the heart of the plant for many decades. Ordinarily, up to three would be operating at one time. They ran continuously—night and day, seven days a week—and required a constant feeding of materials. To make one ton of pig iron, the furnaces required 1 ton of coke, 2 tons of iron ore or pellets, a half ton of limestone, and about 4 tons of heated, pressurized air.

The elevated rail line, the *HMT*, was responsible for moving and transporting the raw materials to the blast furnaces. Electric-powered transfer, or trolley, cars delivered iron ore and limestone from a storage area about a half-mile to the east. Recently-produced coke was transported in hopper cars from the Coke Works near Hellertown, Pennsylvania. Each car ran back and forth along the Trestle 24 hours a day, 365 days a year, fueling the constant production of iron in the blast furnaces. Each car could carry about 150 tons of material. Iron ore and limestone were brought to the furnaces in transfer cars, while hopper cars delivered coke. These three ingredients were dumped into storage bins below the Trestle. Under these bins, weighing cars would examine the exact amount of each material, before they were poured into skip cars that hoisted the materials up an inclined track, charging them into the furnace in layers. Hot, pressurized air was shot into the blast furnaces,

reaching over 3000 degrees Fahrenheit. Hot gases rose through the descending ore, coke, and limestone, left the furnace through large pipes, and were cleaned for further use as a fuel. In order to make this hot air, the Gas Blowing Engine House flanked the other side of the Trestle. This is where the giant gas-powered engines pumped the pressurized air into the blast furnaces. From the 1880s to the 1920s, millions of European immigrants arrived in the United States in hope of finding work, and many found jobs in Bethlehem's iron and steel industry. With the migration of workers from Europe, Mexico, Puerto Rico, and many other foreign countries, ethnic organizations and churches sprang up all around South Bethlehem, where workers could speak their own language and socialize. The influence of the immigrant population on the community resulted in people from around the world becoming part of the plant's and the town's social fabric.

Over the decades, a community grew along with *Bethlehem Steel's* growing workforce. Generations of workers lived, shopped, attended school and church, played sports and socialized in the shadow of "the Steel" (the locals' nickname for the plant). This community of workers in the South Side of Bethlehem developed into a vibrant working-class community, enhanced by an identity and pride that would transcend generations and become a legacy of the Steel. Along the *HMT*, workers signed their names in the steel, welding the letters onto the deck. Working here meant you were part of something important, something bigger than yourself, a huge industry that served the needs of a growing nation. Steel ran in the families, as children followed their parents and grandparents into careers at the plant. Being a steelworker was more than a job, for many, it was an identity. Steelworkers often labored six or even seven days a week in long and exhausting shifts. Accidents were common, and over 500 men died on the job between 1905 and 1941. Hundreds, if not thousands, were badly injured by burning metal, toxic gases, and fast-moving machinery, but few could afford to choose a safer or easier job. In the 1900s through the 1940s, labor organizers turned to unite the workers into a single force, or labor union. After a long and sometimes violent struggle with management, the *Steel Works Organizing Committee (SWOC)* succeeded in unionizing Bethlehem in 1942. The Union negotiated with management for improved safety measures, shorter hours, and fair wages. It truly was one of the hardest jobs in the world. Guillermo Lopez, a Millwright in the Coke Works, expressed, "I remember the first day I was on the job and I was like 'Oh my god, this is hell!' Smoke and fire, it was just incredible. I almost ran out of there, it was like a dungeon."

In the early decades of the company, Bethlehem's location near major cities, raw materials, and transportation routes positioned it for success. The Lehigh Canal made it possible to produce large quantities of iron in the United States for the first time with coal delivered from the mines of northeast Pennsylvania, while the Lehigh Valley Railroad made long-distance shipping an economic reality by providing easy access to the ports of Philadelphia and New York. Coal, ore and cheap labor were the ingredients for Bethlehem's

early success in the steel business. The railroad brought in raw materials and carried away the company's products. Wartime meant big business for *Bethlehem Steel*. When the First World War broke out in 1914, Bethlehem enjoyed record profits, producing armaments, first for embattled European countries, then for the US Army and Navy. During World War II, the company saw even greater productivity and profits, with a record high workforce of over 30,000—including several thousand women. With all plants devoted to wartime production, *Bethlehem Steel* was the largest single supplier for the Allied Forces. The company produced one naval ship a day in 1943. Steel from this plant built, bridged and powered America. Across all its facilities, *Bethlehem Steel* produced over 1 billion tons of steel between 1905 and 1999. High quality steel, dependent upon rigorous testing during the manufacturing processes, set Bethlehem's products apart. The military relied on this quality for arms and equipment. In peacetime, the company focused on structural steel. It developed the innovative "Bethlehem Beam" which allowed skyscrapers, bridges, and tunnels to span longer distances than ever before, including: the *Golden Gate Bridge*, the *Chrysler Building*, and the *USS Missouri*. In later years, Bethlehem made top-quality forgings for the nuclear and aerospace industries. [...]

The last pour occurred on November 18, 1995, [...] and by 1999 all operations had ended. Multiple factors contributed to the decline and failure of *Bethlehem Steel*. First, the market was changing; materials like aluminum and plastic were beginning to replace steel. Starting in the 1960s, the corporation faced increasing competition from foreign mills and mini-mills within the United States. In the late 1970s, a number of disasters forced the shut-down and caused costly cleanup efforts of several facilities in Lackawanna, New York; in Johnstown, Pennsylvania; and near Pittsburgh, Pennsylvania. Finally, a recession in the early 1980s and shrinking profits continued to propel the decline. Many believe that Bethlehem's management inadequately responded to these changes; some think that the Union's demands on wages and pensions made the situation even worse. [...] After it shut down, the company took on a major environmental clean-up, leaving the site safe for future use. In the years that followed, citizens, city government, company executives, and developers worked to create a plan to redevelop this location. They faced the challenge of using the site for economic development while preserving its historical significance. The hope is that the combination of historic preservation and economic development here today will strike that balance. The *Bethlehem Steel* buildings that remain can stay standing for a long time; they are relics of over 130 years of industrial history—both its triumphs and its failures. These structures are an ongoing reminder of the people who labored here and what they produced: the steel that built America.

## Design

The *HMT* was the backbone of the *Bethlehem Steel* plant (fig. 7). Transporting the raw materials used to produce steel to the blast furnaces, the Trestle carried the weight of an intricate assembly of parts. Materials carried in

the rail cars were released into large bins below the tracks, where they were weighed, then lifted via skip cars on a steep incline into the blast furnaces, and heated to over 3000 degrees Fahrenheit; an elaborate process of interactions between tectonic parts. At first glance, the blast furnaces and abandoned structures that remain of the former *Bethlehem Steel* plant are both complex and overwhelming, with a scale that is almost unrecognizable from the ground plane. From these observations of transportation processes and scale, we aimed to create a design that would enhance once perception of the place by mitigating the dramatic scale through the introduction of a topographic hierarchy of experiences, and a study in placemaking.

The unique vantage point from the *HMT* provides an entirely new perspective of both the *SteelStacks* and the campus as a whole, allowing visitors to reach a new level and adjacency to the iconic blast furnaces, where much of the steel-making work took place. One of the challenges we faced with this site was designing a project that would not stand out against the iconic and beloved backdrop, but also that would not be completely overwhelmed by the complexities and immense proportions of the site and the existing structures.

As a result, we began to look at the project as an opportunity to invite people up off the ground, and allow them to experience the site from this new vantage point, introducing a topographic manipulation and extension of the ground plane that responds to the built conditions of the existing structures. The main staircase and elevator of the *HMT* seamlessly transition people from the ground plane up 36 feet in the air to a new grade that sits four to six feet above the *HMT* rail tracks, providing unobstructed views of the blast furnaces soaring above, the ore cars and machines at eye-level, and the large bins below the tracks where the rail cars would deposit materials for the furnaces. The manipulation of topography and grade change from the ground level up to the Trestle level is an experience that inserts the individual into the com-

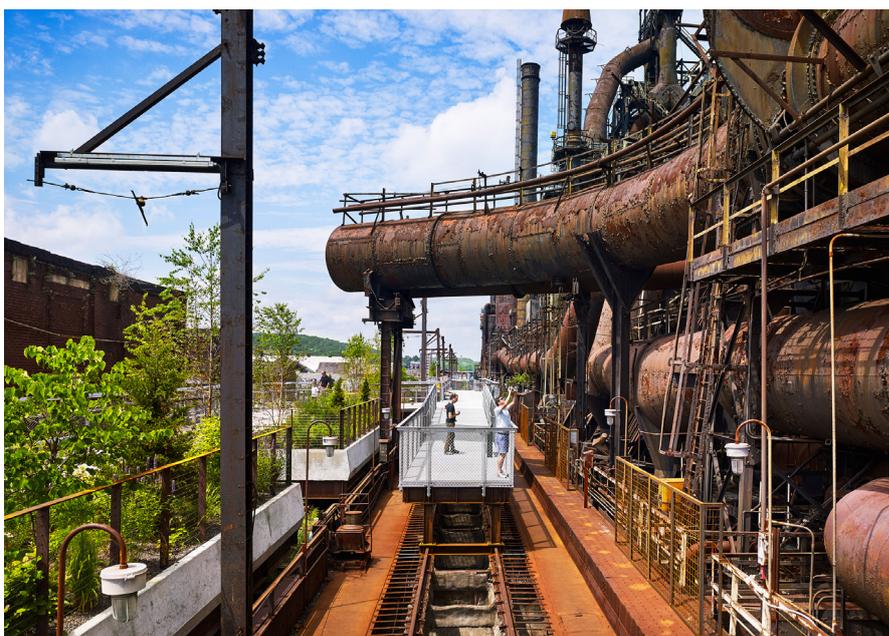


Fig. 7 Re-using the existing rail tracks, the *HMT* once again serves as the backbone of the Bethlehem Steel plant.

plexities of the projects, both old and new. In an effort to preserve the integrity of the original *HMT*, the new structure was designed to “tread lightly” over the existing structure. All new surfaces and design elements are supported by a new steel structure that attaches at the location of the existing rail tracks. The steel structure was designed in weathering steel to match the existing rusted structures, and recede to the background, allowing the new walkway to float above the existing structure as a clearly identifiable and vibrant new entity that visually juxtaposes the old and the new; an industrial archeology.

One of the caveats of working with an existing structure, especially an abandoned industrial structure like the former *Bethlehem Steel* plant, is the lack of readily accessible and organized “as built” drawings. In a combined effort with the Sands Casino archives (acquired when the site was purchased) and the *Bethlehem Heritage Coalition* and *Steelworkers Archives*, we began the site analysis and conceptual design process by examining and sifting through almost 3,000 microfiches of scanned, hand-drawn, Construction Documents for the entirety of the *Bethlehem Steel* plant, which was constructed and expanded for the better part of a century. The drawings (dated throughout the 1900s) were not the best quality, but provided us with the original plan and structural grid of the *HMT*, and many of its adjacencies. This plan laid the foundation for our conceptual and schematic design processes. However, left with many uncertainties about the existing structure, its deteriorating state, and ultimately its capacity to carry a new steel and concrete load, we worked with the structural engineers—*Simpson Gumpertz & Heger*—to conduct our own site surveys, comparing the original drawings with the existing structure and specifying the appropriate and reliable points of contact for the new phase of additions and development. With many of the original conditions deteriorated, the design endured a series of iterations and adjustments throughout the design development process, but the integrity of the design intent was always preserved. The design is manifested in the form of three tectonic typologies that work together to create the overall experience and inform one’s circulation throughout, and understanding of, the site. The three distinct component typologies consist of: grating walkways, concrete platforms, and planting bins (fig. 8). Respecting the linearity of the original rail tracks on top of the *HMT*, metal-grating walkways run parallel immediately above the existing tracks, encouraging people to look down into the large existing bins below. These grating walkways are interrupted by angular concrete decking platforms and gathering spaces that frame and focus views, directing your attention outward to items of historical and contextual importance. While the grating walkways encourage an attention to the detail and existing structure below, the concrete platforms encourage an outward attention to larger scale elements. Finally, these distinct public spaces are buffered and enhanced by concrete planting bins that host a palette of both native and exotic species that direct and shield specific views, and introduce a seasonal color palette and horticultural narrative.

At every point along the *HMT*, one's focus is pulled above, below, and outward across the datum of the rail tracks. In addition to the materiality of the new construction, these new components vary in their vertical height above the tracks, a further manipulation of the site's topography. The concrete gathering spaces which provide for specific outward-facing views sit the highest above the tracks at +6.0 feet above the datum (which exists at +30.0 feet above ground level). The metal-grating walkways that run directly over the tracks sit one step down from the concrete spaces at +5.5 feet, allowing and encouraging your focus to be pulled down below the surface of the path at the large bins below the tracks. Bright yellow ramps span this grade change, providing a universal accessibility across the minor elevation changes. These ramps also introduce a color that references the "safety yellow" color found throughout the industrial site, and bring one's attention downward to visibly notice the material and grade change. Finally, the planting bins are positioned below the walkways to allow the landscape to grow up from below, similar to how nature had taken over the existing site and grown out of the large bins below the rail tracks. This unique relationship between the tectonic components and typologies allows for a revealing and interpretive understanding and experience of both the site and the design intent.

All new elements are perched above the tracks, creating an archeological experience over the artifact below. This allows for an experience at a human scale that pays homage to the site as a historic landmark by treading lightly over the existing structure, while also providing a unique and comfortable pedestrian experience. The experience is enhanced by a self-guided tour that includes interpretative physical signage as well as an interactive digital application, accessible to any mobile device, delivering audio tours, oral histories and an entire database of historical images and interpretive data ([www.hoovermason.com](http://www.hoovermason.com)). The pedestrian promenade serves to connect and galva-

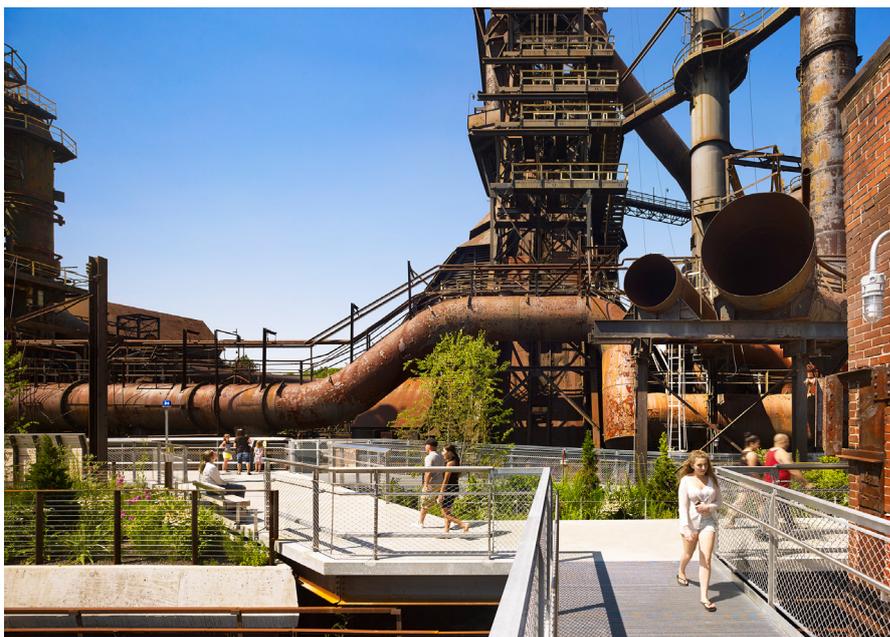
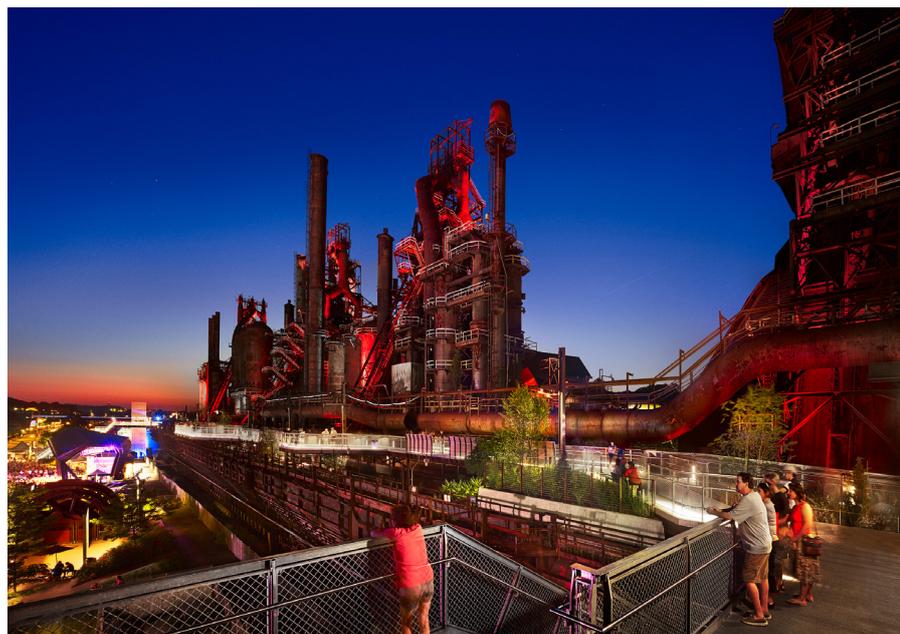


Fig. 8 *HMT* grating walkways, concrete platforms and planting bins.

nize the district, as it adds historic interpretation and passive recreation assets to the campus. Most significantly the project is building community and creating a new economic engine in Bethlehem.

In addition to the architecture and landscape architecture design, our design team included a collaborative group of consultants: interpretive design (*Bluecadet*), lighting design (*L'Observatoire International*) (fig. 9), and horticultural design (Patrick Cullina). The interpretive design of the *HMT* allows visitors the opportunity to see the *Bethlehem Steel* plant's industrial structures up close, and offers visitors a glimpse into the history of *Bethlehem Steel* through a self-guided tour. The tour includes plaques that explain both the technical and narrative significance of the site, and an interactive web application featuring curated content that delivers a comprehensive and engaging story with a wide variety of media. The lighting design for the *HMT* (and the *SteelStacks Campus*) avoids frontal lighting that would have flattened the structures, so the furnaces were lit from within to highlight their depth and volume. The rhythm of the lighting provides a sense of movement that highlights the materiality of the facilities and their production, transforming the project from day to night. At a human scale, the lighting responds to the distinct design intent of the grating and concrete walkways sections. The grating walkways are illuminated by a series of vertical lights that create a rhythm as one walks over the existing tracks. They are also lit from below the walkway to draw one's attention downward through the grating to the structure below. The concrete walkways are lit at the perimeter to highlight the dramatic angularity that directs one's attention outward toward specific views. While the *Bethlehem Steel* plant sat vacant, nature took its course and a ruderal landscape began to emerge throughout the site. From native species to exotic ones, the existing flora was preserved wherever possible, allowing the new planters and naturalistic plantings to be designed around the origi-

**Fig. 9** The lighting design provides a rhythm to the backdrop of the blast furnaces, highlighting the materiality of the facilities and their production.



nal, durable secessional landscape. Preserving the existing landscape also abreast specific design decisions that shaped the path of the walkways and locations of the planting bins.

The *HMT* advances a sustainable agenda, by preserving an existing landscape and vegetation that began to emerge throughout the site after the plant closed, and enhancing that existing vegetation with a new planting palette of seasonal plantings. In an effort to preserve the ruderal landscape that had grown throughout the site while it was abandoned, the planters and walkways of the new design were strategically placed and oriented to maintain the wild, existing, and durable species of plants and trees that have sprouted along the *HMT* out of the large bins below the tracks. We made every effort to preserve the existing native and exotic species wherever possible and then design the new planters and walkways around them. The landscape was designed inside of large concrete planting bins on top of the rail tracks, and sitting directly above the existing bins below the *HMT* rail lines, so that in both instances, new and old, the landscape grows out of bins. The planters along the walkway are strategically placed underneath the walkway service, with drainage from the walkways directed toward the planters. As much as the overall site and design are about telling the story of *Bethlehem Steel*, the landscapes of the project tell a horticultural story, attracting a wide range of species of insects and birds to the site as a transformational act of the industrial remnants.

The *HMT* has also impacted and engaged the local community and provided for an experience that not only tells the story of the place, but also part of the nation's history. No other development captures the historic setting, significance, and vitality of the United States' steel industry. Much like the *HMT* once worked as a component of the much larger *Bethlehem Steel* plant, the reinvented and revitalized *HMT* serves to enhance the community of Bethlehem by preserving the history and integrity of this magnificent site. The repurposed site embraces the history of the former steel plant and the City of Bethlehem, drawing visitors to the site year-round. The design allows for a physical accessibility to the history of the site for visitors who can stroll through an industrial archeology of America that preserves the integrity of the existing historic industrial structures by enhancing the site topography and contextual scenery. The design of the *HMT* encompasses a variety of spaces and functions at multiple scales that can adapt from day to night, and seasonally, from a major component of pedestrian infrastructure and circulation to an observatory with a dynamic panorama of views of the campus and city.

The intent of our placemaking strategy, coupled with our aspiration to create a new public realm, affords people the ability to experience the stories and historical importance of the site, while facilitating a continued storytelling and remembrance for future generations, who now get to enjoy the site as a cultural landmark. The success of the project lies in the intertwining of a historical artifact with an urban space, through placemaking and a strong design narrative. From the inception of the conceptual design process, we understood the importance of the interpretive themes and exhibits that

would provide the narrative for the project, the space, and the community of people who would interact and engage with the site at multiple extent and for multiple reasons. Our aim was to allow the design to be informed by its context, to tell the history of the site from the perspective of those who lived that history, and to be enhanced by a design that would convey the importance of the site through interpretive themes, messages, stories, lighting, texture, materials, and nature.

The spirit of this place lives on in the gritty textures of the former industrial site, but also in the renewed energy fueled by the community who inhabits it. The heaviness in the scale of the machines, superimposed with the lightness and simplicity of the new structure and design allows for the majesty of the iconic blast furnaces to provide an emotional and monumental backdrop for the new civic spaces.

## Conclusions

The *HMT* was not always part of the revitalization plan for this site, but it has become one of its most popular attractions. When the *HMT* reopened in June 2015, no one knew what the response to the project would be, but the *HMT* has been embraced by the community of Bethlehem, and now serves as one of the City's most important public spaces. The *HMT* has been welcoming 200 visitors per weekday, 1,000 visitors per weekend, and 1,000 visitors per special event, such as *Bethlehem's Musikfest*. Along with over one million visitors per year at the *ArtsQuest Center*, *Visitor Center* and *Levitt Pavilion on the Arts and Cultural Campus*, and eight million visitors per year at the Sands Casino Resort, which are connected via the *HMT*, the project has flourished as a programmable piece of pedestrian infrastructure that introduces the community and its visitors to the history and importance of the site.

Designing *around* an existing site or structure does not allow that design to fully engage with its context, but designing *with* an existing site allows the new design to become an integral part of that system and its history, receptive to the context of the place, and resilient in the way it uses the existing site instead of attempting to overcome it. This is only possible when architecture and landscape architecture come together to create an integrated system of components that engage both the site and the visitors who interact with the place. As one journeys through this industrial landscape, the goal is not to identify what is architecture or what is landscape architecture, but rather to appreciate the artifact on which the design is built. When emphasis is placed on the design and the experience, we can remove ourselves from the social construct of disciplines of practice, and engage ourselves in the meaning behind the design. Experience is not classified or defined by the terms "Architecture" or "Landscape Architecture." Rather, experience is defined, and enhanced, by the collective, collaborative, and multi-faceted approach to the design of a place; the placemaking.

As designers, we strive to challenge the notions of what "Architecture" and "Landscape Architecture" are, by working as a collaborative unit. Our

goal for each project is to create a vibrant, imaginative and sustainable place for communities and the people who live in them. We draw inspiration from our contextual and exploratory understandings of people and places, and we utilize that understanding to realize the true potential of a space. The Hoover-Mason Trestle project was the product of a multi-disciplinary design team, and the success of the project is measured in the experience of all those who visit it. Never before had we faced such an interesting challenge of designing on top of a respected monument like the *Bethlehem Steel* plant, but working with the community, and engaging people throughout the design process, resulted in a project that will serve as an amenity to the City of Bethlehem for decades to come. The project, now a year since completion, is an exceptional example of a visionary project that has achieved an extremely positive social and environmental impact through the reimagining and revitalization of what was only 10 years ago an abandoned industrial site. Our approach to this project was to tell a story, one that would inform the design process and the final outcome, and one that would be relatable to anyone who would visit it. For us, it was less about designing a piece of architecture or landscape architecture, and more about creating a place, a destination, an experience.

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## Authors

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## Figures

*Fig. 1* Google Earth

*Fig. 2* David Christenson

*Figs. 3, 4* Halkin Mason

*Fig. 5* David Christenson

*Figs. 6–9* Halkin Mason

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