ABSTRACT: This study seeks to elucidate how the tectonic language of structure facilitated the dialogue between architecture and landscape theory in the last two centuries, and how that dialogue influenced new forms of structural experimentation. Examining projects that, in their limited scale and deeply experiential character, create objects or spaces for deep immersion in landscape, we find how architects deploy new tectonic solutions to express and organize ways to integrate the building with natural systems and specific places and landscapes. These projects, often built on culturally significant landscapes, have reimagined tectonic expression and stereotomic integration, exploring both atmosphere and ground, turning static built form into dynamic spaces and ecologies.

1 INTRODUCTION

1.1 A dialogue between disciplines: the shared language of ground

An understudied aspect of the discourse of tectonics is the theoretical overlap between the construction of architecture and broadly the construct of landscape. Kenneth Frampton posited “the unavoidable earthbound nature of building is as tectonic and tactile in character as it is scenographic and visual” (Frampton 1995). The material and visual aspects of grounding architecture on the land evolve from shifting cultural perceptions and interpretations of nature, landscape, and site, from the symbolic to the picturesque, the beautiful and sublime, and the ecological. Architectural theory has addressed different notions of ground: the archeological, geological, topographical and ecological, through architectural devices that can be studied in light of shifting ideas about landscape: the plinth or stereotomic base, the construct of building as a topographical project, the field of columns, the woven or vegetated surface, the soft or thick boundary, and contrasting notions of technological and organic objects. To elucidate this disciplinary exchange, this paper examines the literature for architectural ideas in dialogue with shifting theories and concepts from the field of landscape with its many qualifiers (gardening, architecture and urbanism) and case studies where the language of tectonics articulates those ideas. This idea is less engaged with questions of image or meaning, but rather with how the materiality, fabrication and construction of architecture connects spatially, visually and technologically to the land, and ultimately its aesthetic and environmental performance. In this context, theory is not understood as language separate from reality, but instead as the intellectual framework that explains material practices, which brings to mind Reiser and Umemoto’s claim that “material practice is the shift from asking ‘what does this mean?’ to ‘what does this do?’” (Reiser, Umemoto, 2006).

Interpreting architecture through the lens of landscape theory is a subversive position, as the opposite has been the dominant view. The theoretical discourse in landscape architecture has been
striving to gain independence from the architectural lens that governed the original readings of the landscape. Elizabeth Meyer describes the landscape, as an abstract concept and a real place, “marginalized in the discourses of modern art and architecture” and hence reliant on the interpretation of other fields not concerned with ecology, especially the visual lens of architecture. (Meyer 2002) This paper explores how the development of an independent theory and practice of landscape architecture challenged the discipline of architecture to engage with the landscape as more than a passive ground on which to sit, and more than visual scenery that serves as background. Tectonics is understood as concerned with the visual or poetic expression of construction systems, but one of its primary concerns has been the integration of architecture with the ground and the natural environment through the experience and performance of its materiality, and by extension the evolving theories about landscape. Frampton posited only twenty years ago, that “the built invariably comes into existence out of the constantly evolving interplay of three converging vectors, the topos, the typos and the tectonic.” (Frampton 1995) The argument presented here is that topos is more than just topography or site as place, therefore its influence reaches further than the contrast between the stereotomic and the tectonic. The trajectory of tectonic exploration has been profoundly influenced by shifting notions of ground and atmosphere influenced by or emerging from landscape theory, that prompts the formal exploration of the depth, thickness and continuity of the ground in developing thresholds, surfaces, and spatial sequences, and eventually to engage with the expression of infrastructural agency, dynamic processes and temporal aspects of ecological performance.

1.2 A historical perspective: on primitive huts, pavilions and follies

Although all built architectural projects engage with site, whether critically or pragmatically, this investigation starts with the architectural tradition of experimental projects that engage building and landscape, primarily the pavilion, which is considered a formative typology in architecture theory and education. The notion of an elementary form of building that is engaged in a dialogue with nature or landscape has generated seminal theories and some of the purest investigations of space, material and structure. Semper’s primitive hut, which he used to propose the origins of all technical arts in architecture, that is ceramics, metalwork, carpentry and masonry, was fundamentally defined as three elements: earth mound, roof and enclosure, which protect the fourth element of the hearth, as the focus of society or the “moral element of architecture” (Semper 1989, 103). The idea of the primitive hut in the wilderness is embodied in the pavilion in the park, as the park itself embodies nature enhanced as a designed landscape.

The temporary pavilion of international expositions had a counterpart in the folly, with more controversial origins and atectonic aims in the in the early picturesque theory of the eighteenth and early nineteenth century. The negative associations with the monumentality of early national pavilions prompted a return to the structural honesty and ephemerality of the modern pavilion as well as “a wide variety of art practices, whether performance art, landscape art or site-specific work,” seeking to “push the boundaries of architecture while encouraging sociability, imagination and play in the spectators and users of these spaces” (Junyk 2014). Unlike the historicist model of the monumental folly as replica and imagery, “the emblem of foolish luxury,” which according to Anthony Vidler undermined “all the careful historicisms of the materialists, from Pugin to Semper,” (Archer et al. 1983) the typology of the pavilion has an important role in exploring tectonic expression in the twentieth and twenty-first century, as an instrument of experimentation to connect the spaces of human habitation and the landscape. In the postscriptum to his seminal book, the last section called The Tectonic Trajectory, Kenneth Frampton frequently presents iterations of the pavilion in the landscape as critical moments along that trajectory (Frampton 1995). Ultimately the pavilion became a feature of the urban park that has evolved in to all sorts of utilitarian functions, but also a metaphor for many typologies for every day life. Many forms and derivatives of the pavilion have been uniquely engaged in tectonic expression, both its material and visual aspects, to heighten the cultural experience of the landscape, define new ways in which buildings become instruments to understand and experience the non-human natural world, and engage with ideas of place, temporality and environment.
2 THEORIES & CASE STUDIES:

2.1 Objects in scenery: picturesque tradition and experimental structures for the urban park

The picturesque tradition emerged in the English garden. The buildings produced within this tradition often responded to developments in the material and industrial processes, but also to changing ideas about culture and nature in the growing urban centers of the nineteenth century. The picturesque building and landscape were uniquely urban phenomena, inherent to the nineteenth century urban park. Elizabeth Meyer has described the Picturesque as the displacement of the natural and geological history of the European continent from the country to the city, explaining how the nostalgia of a lost landscape, generated new cultural forms to reconstruct and represent the particularity of the British woodlands, in reaction to the universality in agricultural and Pastoral improvements of the changing landscape (Meyer, 1992). Originating in landscape painting, the urban picturesque garden as a form of enhanced natural aesthetic, of selective features to heighten the spatial sequence of the landscape, invited the addition of structures that operated at the intersection of horticulture and technology: the creation of spaces for the controlled observation and cultivation of plants. These buildings were experiments in the tradition of conservatory architecture that evolved from the work of English landscape theorist and gardener Humphrey Repton, one among a few key figures of the eighteenth and nineteenth century England, who was engaged in the debate about the merits of the picturesque and the landscape design for a specific physical region (Daniels 1999). What Elizabeth Meyer has called the “systems aesthetic that landscape architectural practice developed in the nineteenth century” has a parallel in the systematization of architecture that occurred in the typology of park structures. The Great Conservatory of 1840 in Derby, a structure of iron and glass designed and built by Joseph Paxton that has been called the largest greenhouse in the world, preceded the Crystal Palace in London’s Hyde Park in exploring techniques of repetition, modularity and lightness to create an atmosphere for the controlled and culturally mediated observation of cultivated nature. It also gave Paxton an opportunity to experiment with technologies that evolved into the first large prefabricated building, made out of standardized parts of four-foot modules that were to be assembled on site (Karwatka 2001). The Conservatory was also an early experiment in “environmental design” that inspired the first attempts at passive and active strategies for climate control and adaptations of glass houses for human use (Schoenefeldt 2011).

The notion of experimental and ephemeral has been defined as “unconstrained by the classical canon and the hierarchy of building types.” (Junyk 2014). The pavilion of the modernist tradition is also said to have “vacated contingencies of program and site in order to provide the freedom to explore new possibilities, particularly the tectonic expression of material and technology” (Ai and Pins 2014). Temporary structures have become a constant source of architectural experimentation, from the proliferation of Biennales to installations such as the PS1 by MoMA in New York. The temporary pavilion in the urban park has also been an important program of tectonic investigation that fostered singular collaborations between structural engineers and architects to reinterpret culturally significant landscapes. The structural engineer Cecil Balmond has had an important role in the design of summer pavilions at the Serpentine Gallery in London, in collaboration with well-known international architects, becoming the only engineer listed as co-author of projects along with architect Rem Koolhas in 2006 and Toyo Ito in 2002 (Jodidio 2011) and one of a few people listed as authors in more than one pavilion. Before engaging in these pavilions, Balmond’s book Informal discussed the collaboration of engineering and architects. In it Balmond stakes a position in architectural theory by inviting new investigations of space where “structure and surface amalgamate,” and is explicitly critical of superficial formal experiments that make architecture into “new shapes and blobs held by post-and-beam construction” calling instead for creating integrity in establishing “free shapes”. (Balmond 2002) The introduction of a structural engineer such as Balmond into the contemporary theoretical discourse brings renewed attention to the honest reciprocity between form and structure, and a critical counterpoint to superficial landform emerging as representations of landscape.
In the last two decades, Hyde Park in London has seen numerous iterations of the park structure or pavilion that serve as instrument to reinterpret or redefine the experience of the picturesque landscape in contemporary culture. The Serpentine Gallery, originally a classical structure designed as a tea pavilion in Kensington Gardens, has expanded its program to include the construction of a summer pavilion every year since 2000. The curators have acknowledged the “essential inventions of architecture” that come from temporary exhibitions, where one can see “the unwritten history of 20th century architecture” (Jodidio 2011). Neither completely temporary nor precisely site-specific, these pavilions have been conceived as art objects, with their commission partly funded through their eventual sale and transfer to new park settings at the end of their three months in Kensington Gardens. More than objects, the pavilions provide programmable spaces for cafés, public events and lectures in the park. The opportunity to inhabit a pure space in this culturally significant landscape has meant that architects often employ a highly tectonic language to frame a new form of landscape experience through material experiments.

Toyo Ito and Cecil Balmond’s pavilion (2002) results from a mathematical experiment using algorithms to rotate a single square over a surface many times and generate an apparently random geometry for the panels that made the walls and roof. From the exterior the object is perceived as object: pure white sculptural form against the landscape that suggests playfulness (Fig.1). From within, the deep steel plates allow a column-less space, by transforming wall and roof into thick perforated panels where light and views are fragmented into pieces of ground and sky, denying the traditional framed of a distant panorama of landscape and dematerializing the corners of the volume. Ito’s metaphoric formulae propose an architecture that is produced as both landscape and technology, including “Architecture as a Garden of Light, a Garden of Wind, and a Garden of Microchips: architecture as a device that produces a landscape, as a garden ploughed by these natural and artificial flows,” (Itō, Levene, and Márquez Cecilia 2005). Balmond’s ideas had an affinity with Ito’s view of architecture, as he is interested in exploring geometry, a systems he suggests that we take for granted, questioning the assumptions we make about structure as a form of reduction and regulation. Instead, Balmond, who founded the Advanced Geometry Unit at Arup, is looking at geometry in the world, in natural systems, to generate new logics and patterns: “Living systems need a continuous stream of information on pressure, temperature, moisture pH value, electrical charge, magnetic fields, and so on. The systems which have the best potential for exchanging information will have the best chance of survival. Fractal behavior, with its finest folding and branching, is a good measure of that success” (Balmond 2002).

Balmond’s and Ito’s concept of naturally derived form does not accept irregularity or randomness as the structure of nature, but instead finds order and inherent logic in natural objects. In contrast, SANAA’s Serpentine pavilion (2009) creates architecture that recreates a subjective immersive experience associated with the ambiguity and hidden structures of natural systems. This “park-concept
architecture,” as SANAA describe this and other projects, is closer to the visual and experiential origins of the picturesque, where nature is organic, irregular and atmospheric. Creating experience through movement is prioritized over creating objects: “It is not designed as an object so much as a field space that provides a different experience within the continuity of the park” (Jodidio 2011). The structure consists of a field of reflective and delicate columns and what seems like an impossibly thin (26mm, 1 inch thick), reflective aluminum roof on a plywood core, also engineered by Arup and Cecil Balmond’s Advanced Geometry Unit (Minutillo 2009). The architects thought to conceive of “something like a cloud with no boundaries” that is “floating to create a space that is big, soft, and very open” (Murray 2009). The structure de-objectifies the pavilion and creates architecture as an intense atmosphere that heightens the experience of the landscape. (Fig.2) A later pavilion by Sou Fujimoto in 2013 takes the idea of cloud further into a three-dimensional effect of dissolving boundaries, but rather than using the organic language of SANAA, it returns to a language similar to Ito and Balmond’s, with the varied aggregation of a simple geometric form, in this case to generates an effect of dissolution of the object into the atmosphere of the park (Figure 3).

2.2 Building as landscape: on modernist space and structures that articulate an immersive landscape experience

The German Pavilion for the Barcelona International Exposition by Mies van der Rohe (1929) has been proposed as an example of the use of modern structural systems to articulate the modernist idea of spatial continuum, and the notion of planes defining a nearly ephemeral frame to view the landscape. This reading of Mies looks at the pavilion through the same lens that interprets his work as a celebration of the expression of rational structure, and through the reductive or abstract quality of Mies’s plans and collage drawings. However, both the expression of rationality of the structure and the apparent reductiveness of the drawings has been questioned by comparing the drawing to the direct human experience of the space (see Stan Allen, referencing Robin Evans, in Allen 2000, p.98). This is a fundamental difference between reading the building as object or as experience. By reading the direct human experience and the visual effects of its materiality, Caroline Constant proposed a reevaluation of the Barcelona Pavilion within the picturesque landscape tradition, as supported by Mies’s arguing for erasing the barrier between art and community with a “garden approach for the display” (Constant 2012, essay originally published in 1990). In the reinterpretation of the pavilion as landscape, Constant explains how the classical grid of “shimmering cruciform columns” pose a contradiction because the shifting wall planes make each column be understood only as part of a unique spatial context (Constant is referencing here the writing of José Quetlas) and “their formal precision dissolves under the visual distortion of their polished steel surfaces” (Constant 2012). Landscape theorist Elizabeth Meyer has suggested that architectural theories such as this one, which reengage with the spatial and material aspects of architecture, have effectively resurrected “the bridge between the visual, the spatial and the temporal inherent in the Picturesque” (Meyer 2002). The appropriation of the pavilion typology as part of the material and spatial agenda of modernism actively reengaged architecture with the experience of landscape, not as object in a visual composition, but instead as a constructed landscape, effectively blurring the boundary between disciplines and appropriating landscape theory as part of its conceptual framework.

In this view, we find that the language of tectonics: the materiality and spatial configuration of structure, articulates notions of garden or landscape experience through the perception of order, geometry, and the phenomenological effects of materials as you inhabit and move through space. The notion of building as a landscape experience goes beyond blurring the boundary between inside and outside, or creating a building as a frame to view the landscape. The phenomena of landscape experience are fundamental to that conceptual construct: the quality of light, the material articulation of a horizon, the reflection of materials, the temporal aspects of climate, and the subjective experience of moving through space and being engaged with the ecology of a place. The work of Junya Ishigami exemplifies many of those ideas. The workshop for the Kanagawa Institute of Technology, a pavilion structure that suggests a lack of programmatic specificity, creates a flexible and open space for students to engage in making. With no requirements for closed or cellular spaces, Ishigami em-
ployed an irregularly dense field condition of infinitely varied columns as a critical element in defining different spaces and experiences. Ishigami said of the structure: “I wanted it to be the kind of place where people could come and feel like they were strolling through the woods with sunlight filtering through the trees” (Ishigami 2008). Like a forest, almost none of the 305 columns that make up this one-story structure have identical proportions or angles, and the densities and clearings between them create specific spaces that are, according to Ishigami, “entrance-like” or a “work-area like” or “passage-like”. The arrangement of columns is not the only spatial effect. Ishigami wanted the columns to be as thin as possible, and to have no shear walls or any evidence of bracing, therefore the columns had to resist seismic forces. To minimize their thickness, the columns were divided into two categories based on structural function: a majority of columns were lateral-resisting and a small number were gravity-resisting. The lateral-resisting columns were installed last, hung from the beams that were preloaded with the equivalent of a snow load so that when removed, would place the columns in tension. The tension-only members are then not susceptible to compressive buckling and can remain very thin. The connections at top and base of the columns were detailed so that they would not reveal if columns are lateral or gravity-resisting. The strips of roof windows, the field of columns filtering light, the placement of numerous plants and furniture as purposeful elements making space, and the fully glazed perimeter, create an spatial effect of complete transparency, but not the kind that makes the building a frame to view the landscape outside, but one where inhabiting the building is a designed landscape experience in itself.

2.3 Landscape and building as place: integrated topologies and ecologies

In The Tectonic Trajectory, Kenneth Frampton investigates themes of land, agriculture, landscape and identity in the development of a tectonic trajectory. Frampton alludes to the building as a metaphor of a landscape that articulates the identity of place, evident in the analysis of the tectonic expression in the work of “the Scandinavians” Alvar Aalto’s and Sverre Fehn’s respective Finland and Norway pavilions in Venice, as well as in Lewerentz “tectonic brickwork”. Similarly, “the Spanish” are said to show a consistent tectonic and one example suggests that Frampton sees the influence of the land imparting tectonic clarity to their work. The work of Miralles and Pinos in the Olympic Archery Training Center in Barcelona, which he terms gravitational and engineered shows a clarity lost in other projects that he says once are “no longer rendered as either a rampart or a cutting” of the ground “the architecture tends to degenerate into structural exhibitionism as it flies only too free of the ground to aggregate into irreconcilable cacophonic figures” (Frampton 1995).

Along parallel lines in landscape theory, Elizabeth Meyer examines how the ideas of the Picturesque traveled from eighteenth-century Britain to the nineteenth-century American landscape, initiating a discourse in the discipline in the United States about the ethics at the intersection of an imported theoretical construct and the unique environmental and geographic conditions of a particular place. It is in that context that Meyer suggests Olmsted “mediated between the generalities of the Picturesque theory, and the American collective consciousness about nature and the particulars of the American city” (Meyer 2002). In this context of regionalism and ecological-specificity, a different architectural tradition of the building in the landscape emerged. Olmsted, who often collaborated with renowned architect H.H. Richardson, not only developed new ideas for the education and practice of landscape architecture, but also designed the most significant urban parks of the nineteenth and early twentieth century in the United States, adapting the aesthetics of the picturesque to the geological character of a particular landscape, and transforming parks into infrastructures that performed important functions in the ecology of American cities. As a landscape architect, Olmsted not only adapted theories and modes of practice to the American landscape, but also proposed a language for the architecture within these parks. He believed that “in the site, shape, size and architectural design, buildings within a park should harmonize with and be completely subordinate to the scenery” which translated into a specific materiality of weathered shingles and rough, gray stone, “whose colors would blend with the surroundings,” for buildings that were often one-story, with “low pitched roofs, often of thatch with an undulating surface covered with vines.” (Zaitzevsky 1982). Unlike the light tectonic of the English conservatory, the American park in the nineteenth
century developed into an aesthetic of stereotomic mass that reminds of Semper’s earth mounds. Although Semper considered that the relation to the ground is expressed most clearly in the foundation, where “the inorganic law operating in masonry is revealed as art exploits structural necessity and local conditions in accordance with beauty” (Semper et al. 2004) Olmsted preferred the roofs and frames to also resemble a part of the land. Olmsted’s ideas are legible in aspects of the work of the famous American architect H.H. Richardson, not only in park structures, but also residential projects were he collaborated with Olmsted (Floyd 1983).

After decades of neglect or indifference, Olmsted’s parks, especially in New York and Boston have received renewed attention as their cultural and ecological value is reassessed by a rising discourse in sustainability and landscape urbanism. The American landscape architect James Corner described these parks as “more than aesthetic and representational spaces” that “possess the capacity to function as important ecological vessels and pathways” (Corner 2006). Architecturally, these parks had not sponsored any significant contemporary contributions since the nineteenth century, when utility buildings were added in the mostly stereotomic and organic language of Olmsted and Richardson. In the last two decades, a handful of new architectural projects have redesigned portions of the system of parks, and created new opportunities to redefine the relationship of architecture and landscape, often through an ecological lens. In Boston, the Arnold Arboretum held a competition for the Leventritt Garden to be added to the historic Olmsted landscape (1997-2007). Landscape architects Reed Hildebrand in collaboration with Maryann Thompson Architects designed what was to be the first new addition to the historic landmark that differed from the pastoral landscape of the park. In contrast to the picturesque landscape, a highly cultivated collection of vines was designed on a sloping site as a series of masonry terraces fanning out in response to the site and the ravine, a “convergence of horticultural science and landscape design” (Reed and Hilderbrand 2003). Maryann Thompson Architects designed a permanent pavilion to become an outdoor classroom. The pavilion, as a metaphor of the structure of vines, engages in a dialogue between earth and sky. In the language of Semper, which divided building crafts into the “tectonics of the frame, and the stereotomics of the earthwork” the plinth of the pavilion is an extension of the masonry terraces that makes the architecture topologically integrated with the constructed landscape, and its delicate frame creates a tectonic expression that combines the order of repetitive structure with subtle inflections to the shape of the site. Its frame is a form of weaving structure that combines Semper’s language of frame and textile, with the primary members built out of stainless steel double-T’s and double-channels that allow secondary structure to weave through, also holding space and light between (Fig. 4 & 5). The southern edge is built out of trellises that allow vines to completely overgrow, forming filigree on the frame that shades the pavilion, a contemporary interpretation of Olmsted’s idea of architecture for parks. In response, the gray metal roof is fractured to let southern light filter through into the pavilion, and gathers water in a large scupper that is collected at the base of the vines on the southern side.

Figure 4 (left): Arnold Arboretum Leventritt Garden Pavilion, Maryann Thompson Architects with Reed Hildebrand Landscape Architects (credit: Chuck Choi Photography)
Figure 5 (middle): Detail of the Arnold Arboretum Pavilion showing the woven steel structure (credit: Chuck Choi Photography).
Fig. 6 (right): Vegetated roof of the Brooklyn Botanical Garden Visitor Center by Weiss Manfredi (photo credit: Aaron Booher)
In Prospect Park, another nineteenth century park designed by Olmsted in Brooklyn, New York, Weiss-Manfredi built the visitor center in a language that transitions along its from tectonic to stereotomic. Creating an “inhabitable and seasonably variable topography” the architects, who self describe as “bending loose ends of architecture, landscape and engineering together,” describe the Botanical Garden project as “nested into an existing hillside”, and creating “an ambiguous boundary between garden and architectural space” (Manfredi and Weiss 2015). The geometry of the roof sits on a radial configuration of steel frames, but transitions from folded plate at the street edge to curved vegetated roof that seems to mirror the adjacent berm and dissolves into the garden (Fig.6). The architectural drawings of the skeleton of the building, in a language that is unique to the firm, show the structure as a series of long site sections taken over a topographical drawing of the site, in such a way that you can read each line of the frame as an extension of a line of the site. This form of drawing, with structural lines radiating out of a newly imposed order on the landscape, seem to describe the building as a new “emergent topography”. The drawing emphasizes the concept that the architects describe as the “weaving of the building into the earth.” (Manfredi and Weiss 2015).

Another pavilion structure in Boston emerged from the infrastructural landscape created over the Central Artery Tunnel. The park over the Rose Kennedy Greenway, is neither a picturesque landscape nor a heightened geological site. It is instead a large-scale green roof over a massive underground infrastructure of the “Big Dig” tunnels. This landscape creates urban open space and ecology that is far from a natural system, depending heavily on irrigation and controls for traffic, water and ventilation. It is less urban oasis and more a slowly healing scar in the urban fabric that is slowly transitioning into an important linear park in Boston. The Harbor Island Pavilion, a collaboration of the Boston firm Utile with engineers from Simpson Gumpertz & Heger, is the first architecture project within the park, a small permanent structure that serves as a visitor information center to invite people to explore the Harbor Islands nearby. This structure is a canopy or tent spanning over a map of the islands on the ground and the object buildings of the visitor center. Articulating the infrastructural character of this landscape, the canopy consists of a pair of double-curved concrete non-shell structures that are supported by frames of varying height with curved beams, to form a large scale scupper and a dramatic path for rain water to move from the high roof to the low roof and eventually to the ground where it is harvested and collected for irrigation. (Fig.7) The experimental project, although not strictly a shell but instead a curved one-way structural slab, allowed the engineers and fabricators to develop new digital modeling and fabrication solutions for the construction of double-curved concrete shell structures that depart from the ruled surfaces that traditionally lent themselves to the now more expensive timber formwork (Johnson et al. 2010). (Fig. 8) For the engineers, the importance of these experimental projects is the lessons they have applied to later projects where the collaboration with fabricators has continued (email from Paul Kassabian from SGH, December 11th, 2015). The new park creates a new space to engage with the history and future of the Boston landscape, and since the construction of this pavilion, has become a venue for other temporary experimental installations by various architects at the Design Biennial Boston and the aerial sculpture “As If It Were Already Here” by Janet Echelman, engineered by Arup to span 600 feet across the park, representing the three mountains of the Boston landscape that were razed in the eighteenth century to create land on the harbor (Echelman 2015).

Figure 7 (left): Underside of the Harbor Island Pavilion canopy. Utile (credit: Chuck Choi Photography)
Figure 8 (right): Digitally fabricated formwork for the canopy of the Harbor Island Pavilion developed by Utile and SGH (photo credit: Thad Russel).

3 CONCLUSION

Systems thinking, fractal geometry, and ecological processes with ground, light, water and air drive new tectonic solutions, notably through typologies derived from temporary pavilion that are immersed in a landscape experience. The detail, proportions, and materiality of columns have been the object of experimentation in articulating a kind of ambiguity in architecture that is experienced as a landscape. Notions of cultivation, place identity and regional specificity have been borrowed from the field of landscape to inspire strategies for material, ecological and topological integration, informing how structures articulate the weaving of building and landscape. These findings invite further investigation and future perspectives: because in the last century the concept of pavilion has been borrowed as a conceptual framework or metaphor to refer to structures of everyday life more traditionally associated with notions of permanence and utility, from schools to museums to public service structures, whose programs seek to deeply engage the person with the experience of nature, a place or a regional landscape. As exemplified by the body of work of many of these and other contemporary firms, pavilion projects have transcended their ephemerality and temporal situation, not only to create new knowledge of materials and structure in the discipline but also to influence the ambitions and concepts driving the practice of architecture for the everyday, and most importantly its place and role in the landscape.

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