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Publisher: Routledge

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The Journal of Architecture

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/rjar20>

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Published online: 25 Apr 2012.

To cite this article: Joseph Francis Wong (2012) The script of viscosity: the phenomenal experience in Steven Holl's museum architecture, *The Journal of Architecture*, 17:2, 273-292, DOI: [10.1080/13602365.2012.678646](https://doi.org/10.1080/13602365.2012.678646)

To link to this article: <http://dx.doi.org/10.1080/13602365.2012.678646>

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The script of viscosity: the phenomenal experience in Steven Holl's museum architecture

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While some architects have adopted complex free-flowing forms as a response to the universalisation of modernism, the American architect Steven Holl has taken a different approach that concentrates on a phenomenology of architecture. His museum designs focus on constructing a phenomenal experience from multiple perspectives for visitors to engage in a body-subject experience. To explore the notion of spatial viscosity in Holl's architecture, the space syntax method of justified graphs (j-graphs) is used to examine three museums: the Kiasma Museum of Contemporary Art in Helsinki, the Nelson-Atkins Museum in Kansas City and the Knut Hamsun Centre in Hamarøy. The analysis discovers that despite the vast differences in scale and layout among the museums, they exhibit remarkable similarities in terms of spatial configuration and strategy in the formation of the continuously unfolding spatial sequence.

Introduction: against modernism and phenomenology

The universalisation resulting from the positivist approaches of modern architecture has been criticised by many as a reductionist notion that is myopic and destructive,¹ or a formalism resulting from an oppressive architectural structure.² The post-modernist response has taken many forms to re-inject human and contextual elements to repeal the 'hard-edged rationality of the modernist agenda'.³ Seeking for new directions, many architects have looked beyond architecture and borrowed extensively from various other disciplines to generate new architectural approaches. In the latter part of the twentieth century, the explicit connection drawn between architectural form and the concept of *deconstruction*, originated by Derrida in literary criticism,⁴ had opened up the challenge to modernist pure form. More importantly, this had legitimised deviation from simple geometry

and the utilisation of complex architectural forms—Frank Gehry, Zaha Hadid, Daniel Libeskind, and so on—that disturb rather than assimilate; provoke rather than soothe.

Parallel to the pursuit of these 'unsettling' built forms⁵ stands an opposite criticality that redirects the focus on settling the human experience in architecture: to address the problems of global modernisation with a grounding phenomenological view of place and space.⁶ Norberg-Schultz emphasises the significance of 'settling' in architecture, 'Architecture is born from the dialectic of departure and return. Man, the wanderer, is on his way. His task is to penetrate the world and to set its meaning into work. This is the meaning of the word *settle*. A settlement sets truth in to a work of architecture.'⁷ Seaman defines 'phenomenology' as 'the careful description and interpretation of human experience.'⁸ A phenomenological architecture thus seeks to interpret human experience and its

meaning in this world through grounding the understanding in actual experience. Circumventing 'idiosyncratic explication'⁹ in approach, the architecture re-focuses on the journey of discovery of our world and our own lived experience in its spaces and places. A phenomenological perspective in design ensures that the design is not subsumed by 'the lure of geometry as an end in itself' through 'a critical distinction between lived-space and geometric space.'¹⁰

Immersion in the world is one of the key themes of phenomenological investigation, which means that human experience, awareness and actions are always intentional. Humans are necessarily oriented towards finding their significance in a world of emergent meaning.¹¹ Merleau-Ponty identified bodily intentionality as a kind of *body-subject*: the lived ability of the body to move intelligently and thus to act as a special kind of subject expressing awareness in a pre-conscious manner.¹² In terms of this intentionality, it is crucial to understand body-subject as a knowledge that is only forthcoming in the effort of movement, which in turn only manifests as the movement unfolds. As Merleau-Ponty identified the point, 'It is knowledge in the [body], which is forthcoming only when bodily effort has been made, and cannot be formulated in detachment from that effort.'¹³ Movement, and the intrinsically linked unfolding of it, is thus a key concern in a phenomenological architectural strategy.

Holl's phenomenological architecture

Perhaps one of the contemporary architects most forthcoming about the direct connection between

their designs and postmodernist theory, the American architect Steven Holl explicitly espouses the theory of phenomenology in his architectural work¹⁴ and has stated that Merleau-Ponty's philosophical thinking had inspired his re-thinking of architecture.¹⁵ Adopting *intertwining* as a device towards the phenomenology of architecture, Holl believes that architecture can shape a lived and sensed inter-weaving of space and time: 'Phenomenology concerns the study of essence while architectural has the potential to put essences back to existence and revitalize the essential meanings and values to human experience. By weaving form, space, and light, architecture can elevate the experience of daily life through the various phenomena that emerge from specific sites, programs, and architecture.'¹⁶ The focus on the body-subject experience is reflected in Holl's watercolour sketches for his architectural designs, which Perez de Vega points out 'often depict a lonely figure immersed in the space of its own experience; it is like a glimpse inside someone's unique interpretation of the space.'¹⁷ These watercolour sketches form an important process in Holl's shaping of 'the feeling of a space'.¹⁸

To Holl, this body-subject experience is critical to the relationship between architecture and us: 'The movement of the body as it crosses through overlapping perspectives formed within spaces is the elemental connection between ourselves and architecture',¹⁹ and 'It is precisely at the level of spatial perception that the most powerful architectural meaning come to the fore.'²⁰ This primacy placed on experience is reflected in Holl's aversion to people getting to know his works through



Figure 1. Changing perspectival experience through the Kiasma Museum of Contemporary Art.

photographs in magazines or, more likely nowadays, through the numerous images accessible on the internet.²¹ To him, the essence of a spatial experience composed of multiple overlapping perspectives is impossible to capture in image: 'As you move your body through space, that's how you really register what an architectural space is—walking on a surface, turning your head from side to side, seeing the space, taking it in, and experiencing it as a sequence of space.'²² The conviction that architecture is intrinsically tied to an experiential and phenomenological dimension has led Holl to conceive architecture as more than an entity to serve particu-

lar functional purposes. He remarks that 'Rather than simply solving for a given program, what architecture contributes beyond the program is important.'²³

Besides the utilitarian objectives of serving different functions specific to a building, architecture serves the more general phenomenological objective of constructing the sequence of spaces through which we are cleansed of preconceived ideas and assumed meanings to allow the unfolding of our significance in the world, as Holl claims, 'Our aim is to realize space with strong phenomenal properties while elevating architecture to a level of

thought.²⁴ The architectural process projects beyond architecture itself: 'It is driven by some hope for meaning that is extra-architectural, outside of the architecture.'²⁵ In Kiasma Museum of Contemporary Art in Helsinki, Holl composed a ramp system as the major circulatory element and designed the circulation not only to provide access to all galleries 'but also to experience them in an intriguing way'.²⁶ Travelling through the curved ramp presents multiple variations of points of view (Fig. 1), forming what Deleuze calls the 'basis of perspectivism', and which transform not only the object but emanate a 'correlative transformation of the subject'.²⁷ The object and the subject, the viewed and viewer, experience change at the same time. In the phenomenological architectural experience, the essence is the actual human experience and not the conceptual abstraction of that experience, thereby eradicating the objective-subjective split.²⁸ Such experience, in Holl's words, not only 'sets a new frame from which we interpret what we perceive', it also 'shapes our lives'.²⁹

The script of viscosity

In *Parallax*, Holl writes that 'Study of filmic space provides a dynamic tool for the conception of architecture... Filmic space is often created in linking a series of interiors in sequence without an overall objectified exterior.'³⁰ The multiplicity of filmic space—a hybrid of perspectival variations—captures the phenomenal reality of motion.³¹ The notion of the *hybrid* occupies a prominent position in the designs of Holl, as evident in the completed Linked Hybrid in Beijing and the Sail Hybrid in China. In her investigation of common themes in

film and architecture, Shonfield contrasts the hybrid, or impure, with the pure in that while the pure possesses identifiable classifiable form with clear delineating lines, the impure/hybrid 'straddles two or more classes, its edges are unclear, and difficult to delineate, to draw a line around... Things that are impure are therefore *form-less* in the sense that they cross delineate edges between categories of physical form. These edges are established by clear lines. The impure, the hybrid, literally *transgresses lines*'.³² The hybrid space is thus formless space.

This formlessness of space echoes Leibniz's likening space to a fluid: 'We should think of space as full of matter which is inherently fluid, capable of every sort of division and indeed actually divided and subdivided to infinity', and 'varies from place to place, because of variations in the extent to which the movements in it run the same way'.³³ Disintegration of the form, and thus the delineating edges, allows space near and far to flow into a continuum and must be considered as one, as Holl writes, 'the overlap of foreground, middle ground, and distant view is a critical issue in the creation of architectural space. We must consider space, light, colour, geometry, detail and material as an experienced continuum.'³⁴ The nature of the fluidity of space is further explored by Holl by varying its properties: 'Compression, or densification, is one of my aspirations in architecture; the condensation of a manifold of requirements: program, site, space, details, via a single concept that yields exhilarating, experiential phenomena.'³⁵ Compressing the space generates a field of varying denseness that defines the *viscosity of space*:

Architecture is sometimes only a slow viscosity of fluid space in motion. Imagine in a building the difference in parallax experienced from overlapping perspectives between slipping, staggering, orthogonal spaces and curvilinear, bending, aqueous spaces. Spatial viscosity determines aqueous space. Architecture can define fluid movement by determining daytime and nighttime viscosities of light and shadow. Style and form at some point disappear—this is one metaphysics of intertwining.³⁶

The resulting field is one of varying degrees of spatial, visual, and sometimes even psychological, viscosity, which in turn creates a topography, not of physical features, but of intensity and nature of the experiential phenomena.

The intention to construct a stage for multiple experiences is the key notion that distinguishes a phenomenology of architecture from a 'pure phenomenology'. According to Holl, 'Questions of architectural perception underlie questions of intention. This "intentionality" sets architecture apart from a pure phenomenology that is manifest for the natural sciences. Whatever the perception of a built work—whether it be troubling, intriguing, or banal—the mental energy which produced it is ultimately deficient unless intent is articulated.'³⁷ Pérez-Gómez compares this intentionality to a script in dramatic arts and believes that it is crucial to an architecture against the purity of modernism:

Fully to address the dangers of aestheticism, reductive functionalism and either conventional or experimental formalism, architecture must consider seriously the potential of narrative as

the structure of human life, a poetic vision realized in space-time. The architect, in a sense, now must also write the "script" for his dramas... Architectural work is therefore articulated as a narrative, "metaphoric" projection grounded on recollection.³⁸

Whilst the continual gradation of denseness of space is controlled by Holl, visitors to his architectural space form their own ideas through a multiplicity of experiencing.³⁹ In discussing the temporality in Holl's architecture, Pérez-Gómez points to 'the possibility to transform a passive observer into a participant, allowing the inhabitant to recognize a potential wholeness through experience.'⁴⁰ The experience shapes itself after the viscosity of the space, the script that is laid down by Holl, but played out by the observers who themselves become the actor of the script.

The unfolding of space

Vidler distinguishes the Deleuzian fold, which he refers to as 'an invitation for a rather literal folding of the envelope, a complex curving of the skin, that tends to ignore rather than privilege the interior', from the Leibnizian fold, 'an interior mechanism which at once reflects the outside and represents the forces of the inside, is more of a mediating device, a spatial instruments, than an object acted on from one side or another.'⁴¹ The former accentuates the substance while the latter the *in-between*. Composing his museums with this spatial folding of the in-between/interior, Holl sets the stage for the experience of the visitors to unfold, 'When we move through space with a twist and turn of the head, mysteries of gradually

unfolding fields of overlapping perspectives are charged with a range of light—from steep shadows of bright sun to the translucence of dusk.⁴² The folding enables unfolding; from the space experiences evolve. This unfolding is described by Perez de Vega as a kind of *becoming*:

When experiencing space through affect, we are freeing ourselves of inherited meanings and associated perceptions; we are experiencing space as what it *does* rather than what it aims to represent. Hence, as seen earlier, there is a tight link between experience and the notions of potential and performance. These refer to a force, a tending towards, in effect; a movement. And in this process of continual development and change, of *becoming*, we identify the notion of *multiplicity* as a crucial component. This kind of experience does not provide a single reading of a space, but multiple; overlapping, ever-changing and at times, simultaneous. Out of these multiplicities of interactions and affects, certain recognizable patterns will emerge. These patterns however are in constant process of evolving, constantly re-defining and creating themselves.⁴³

The theme of unfolding clearly resonates constantly in the works of Holl. In describing the Kiasma Museum of Contemporary Art in Helsinki, Holl speaks of 'the continuity of the internal space' and 'a continuous unfolding of an infinite series of changing perspectives'⁴⁴ However, his explicit intention of creating an 'open-ended' non-hierarchical organisation to inspire 'visitors to choose their own routes through the galleries',⁴⁵ seems at first to be at odds with the creation of

a continually unfolding spatial sequence. How can the experience be at the same time sequential (hierarchical) and open-ended (non-hierarchical)? The open-endedness applies to the phenomenal experience and not the physical experience: the intertwining of an open-ended phenomenal experience and an hierarchical physical spatial configuration, as explained by Holl, 'These curved unfolding sequences provide elements of both mystery and surprise... the visitor is confronted with a continuous unfolding of changing perspectives which connect the interior experiences to the overall concept of Intertwining or Kiasma.'⁴⁶ The 'routes' referred to above are routes of *perception*, which open up the visitors' own experiencing, not routes of physical movement.

According to Dovey, the phenomenological position 'entails a primacy of lived-space over abstract conceptions of geometric space', and that 'the lived experience of the body-in-space is the primary relation from which all conceptions of space are constructed'.⁴⁷ What unfolds in this experiencing is not simply an understanding of the body-to-world relationship⁴⁸ but an understanding of one's own identity. Norberg-Schultz has given a more spatially defined view of identity in which he suggested that the relationship between man and a given environment consists in an act of identification, 'that is, in a sense of belonging to a certain place...of finding a foothold in a given world',⁴⁹ that is, the notion of *spatial identity*. The spatial encounter becomes an act of identifying oneself with the world within the built environment—a kind of *spatial identity*—the encounter *with* self, and *of* self.

Deciphering Holl's script: the museum syntax

Developments in museum studies situate the museum not only as a place for visitors to view exhibits, but as a setting for social interaction.⁵⁰ The *form* of movement patterns in a museum has in recent years therefore been transformed from that of solely bringing visitors into contact with objects to facilitating encounters among visitors, prompting a focus on the issue of *co-presence*⁵¹ in museum design. The foundation of Falk's museum visitor experience model is that such experiences are predominantly influenced by what he calls the visitors' 'identity-related visit motivations', which fundamentally shape the way the critical reality of the visitor and the museum coalesce.⁵² As these motivations shift upon different visits, the significance of each visit changes; both visitor and museum are 'fluid and changing'.⁵³ Each museum visit is a unique trajectory formed by the merging of the subject and object. Similar to the phenomenological perspective according to Seaman—'Human experience, awareness, and action are always *intentional* – i.e., necessarily oriented toward and finding their significance in a world of emergent meaning'⁵⁴—each museum experience uncovers more of the visitor's identity.

Under Falk's model, the museum trajectory is contingent upon three contextual factors—the *personal context*: the prior experiences and knowledge of the self; the *physical context*: the built space and the exhibits; the *socio-cultural context*: the interaction with other visitors.⁵⁵ These first two contextual factors correspond somewhat to the three themes that Seaman locates at the very core of everyday environmental experience. Through observations

and dialogues with environmental experience groups, Seaman identified *movement*, *rest* and *encounter* as the themes central to an inquiry into the phenomenological experience of the body-in-space.⁵⁶ Here, 'encounter' refers not to interaction with other people in the same space but to the multifaceted ways in which people make attentive contact with their world.⁵⁷ Seaman's emphasis falls on spatial encounters, not social encounters. Exploration of the physical context of the museum trajectory can therefore expose valuable insights on the contributions of architectural interventions to the three core themes of body-in-space experience.

Holl strongly believes that 'it is the responsibility of every generation of architects to clarify a purpose—to articulate a vision through building.'⁵⁸ From his writings, it clearly emerges that his agenda revolves around a phenomenological investigation into human spatial behaviour in architectural space and how that experience can be enhanced to facilitate the understanding of self. The hypothesis put forward here is that Holl has designed the spatial configuration in his museums in with a common intentionality, that there exists a script that he follows and reinforces with successive museum designs. The remainder of this paper will analyse three museums designed by Holl in an attempt to decipher this script: Kiasma Museum of Contemporary Art in Helsinki, Finland (1998); Nelson-Atkins Museum in Kansas City, United States (2007); Knut Hamsun Centre in Hamarøy, Norway (2009). The layout of the main exhibition floors of the museums will be converted into abstract configurational diagrams using *Space Syntax* methodology,

which was first developed by Bill Hillier and Julienne Hanson to represent the configurational characteristics of architectural space through a series of complex diagramming and graphing methods.⁵⁹ In particular, a modification of the *Justified Graph* (j-graph) method will be used in this analysis to represent graphically the spatial structure of the area layouts in a 'visually useful way of capturing some of the key differences between the two spatial patterns'.⁶⁰

J-graphs are particularly useful to represent the pattern of permeability of a spatial layout and would hence 'make a dramatic difference to how the layout would work' by generating 'a range of limitations and potentialities'.⁶¹ In j-graphs, the spatial layouts are divided into units of *convex spaces* that are represented as nodes in the graphs arranged according to their spatial depth from the root space. Thus, this *spatial approach* allows the configurational structure to be highlighted: 'the configurational structure of the shape is a uniquely powerful property, and gives insights into properties of spatial and formal shapes which are increasingly manifesting themselves as the most fundamental, especially in studies of architectural and urban objects'.⁶² Seaman agrees that space syntax methodologies provide a valuable tool to study the phenomenology of architecture, as he remarks: 'I became especially interested in space syntax research because it seemed to provide powerful conceptual and empirical support for the phenomenological claim of a reciprocal relationship between human action—i.e., everyday spatial movement—and qualities of the physical-spatial environment—i.e., the world's underlying pathway

structure, or *spatial configuration*'.⁶³ In the following sections, analysis based on j-graphs and isovists will be used to extract the *script* and understand the *intentionality* of Holl's architecture.

Convexity and configuration

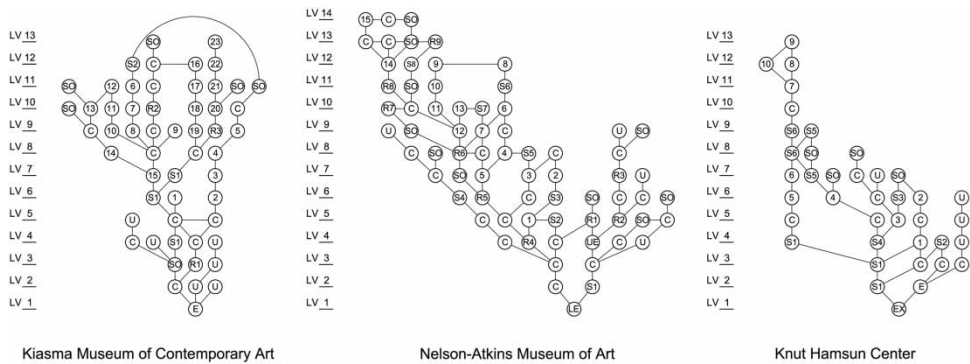
There are two key spatial concepts central to space syntax methodology: the *convexity* of a space, and the *configuration* of a number of spaces. Hillier postulates that human movement and subsequent interaction 'is essentially a linear activity', and therefore the constituent unit of space is a *convex space* in which a person can see everyone else within the same space, that is, all points within the space can be seen from all others.⁶⁴ In terms of visual field, the *isovist*—the 360-degree visual field from a given point in space—from any point of a convex space covers the whole space. As the built environment never consists of isolated spaces, the characteristics of individual spaces are not adequate to determine human activity. Instead, one must understand the *spatial configuration*, which Hillier defines as 'the simultaneously existing relations amongst the parts which make up the whole'.⁶⁵ The focus on the real phenomenon of space distinguishes space syntax and other analytical approaches:

The key difference between it and other approaches to space is that space syntax seeks first of all to address space as relatedness, and as it is, and might be, created by buildings and cities, and as it is experienced by the people who use them. It is not that it is not interested in the spatiality of social processes, but it sets out from the idea that the most powerful evidence for spatiality must be the ways in which



Figure 2. Division of the museums into convex spaces.

Figure 3. J-graphs of
the museums.



human beings actually organise and arrange real space. Space syntax then begins by studying the phenomenon of space as it is found in the real world, and from this works towards an understanding of the spatiality of human activity.⁶⁶

One of the basic analytic tools of space syntax is the justified-graph (j-graph) that involves dividing an architectural layout into its constituent convex spaces and then illustrating their configurational relationships in graphic form (figs 2, 3). It should be noted that any space can be taken as the j-graph's *root space*, which is the space at the lowest level to which all other space is related. For the purpose of this study, the main entry spaces to the museums are taken as the root space as all museum experiences start upon the visitors' advent at the museum.

The resulting diagrams present configurational information that is quite different from conventional understanding of architectural layouts through relational diagrams, such as *bubble diagrams*, which demonstrates relational but not sequential

information. The levels in a j-graph denote directly the spatial depth of the space in that level from the root space. The shallower a spatial configuration, that is, the lower the number of levels, the more *integrated* the layout.⁶⁷ Higher integration translates to a lower mean depth between spaces, which means that the spaces in the layout are closer to one another.

Initial comparison of the j-graphs shows both similarities and differences in the three museums. Despite the variable sizes as well as the different number of total convex spaces among the three museums, they all have a very similar spatial depth of between 13–14 levels. Users thus have to go through multiple layers of spaces in their experiences of these museums. Furthermore, they all have a predominantly *ring structure* with many spatial loops (Fig. 4). Hillier states that ring structures and tree structures—configurations with no spatial loops—behave very differently.⁶⁸ Since the ring spaces *c-spaces* (through-spaces in a spatial ring) and *d-spaces*

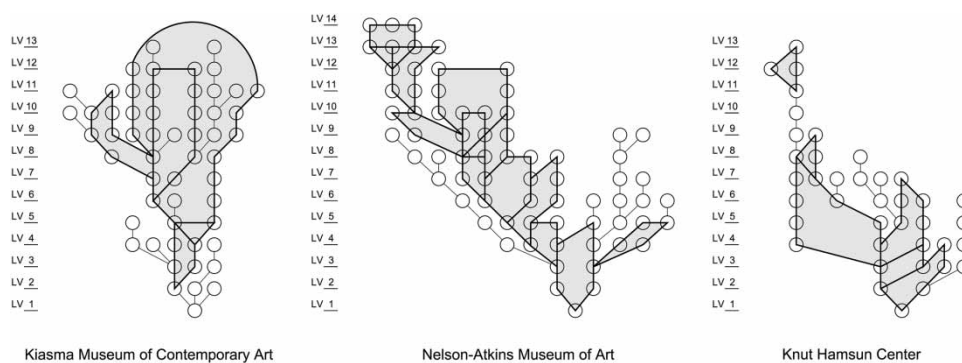


Figure 4. Spatial rings in the museums.

(link-spaces between two spatial rings) afford the visitors more ways of approach than tree spaces *a-spaces* (dead-end spaces) and *b-spaces* (simple through-spaces),⁶⁹ therefore museum layouts with a high number of interconnected spatial rings are more *probabilistic*⁷⁰ in nature. Paradoxically, this observation seems to contradict the notion of an unfolding spatial sequence in Holl's museum architecture, which entails a more *deterministic* spatial property.

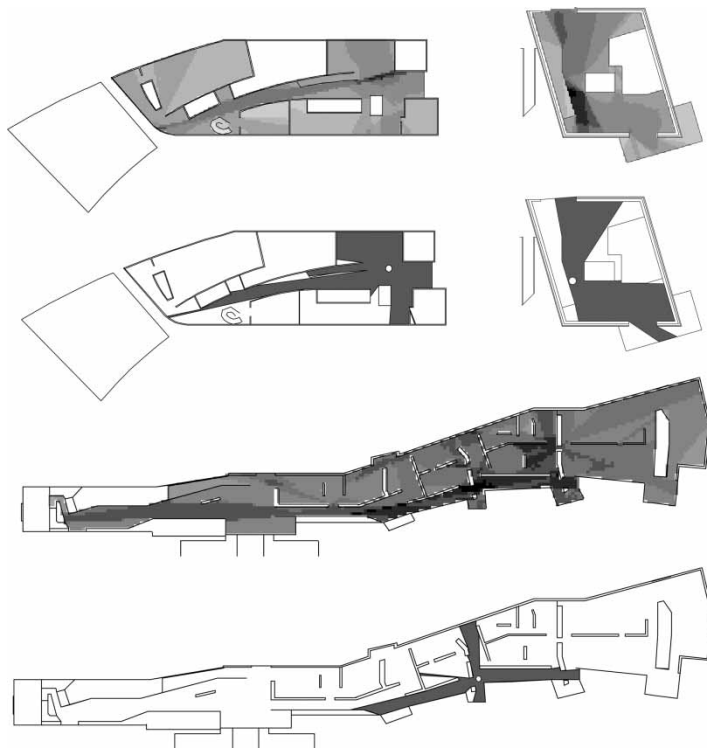
Visual narrative

Holl creates the parallax through a multiple perspectival experience. The experiential phenomena emerge from a narrative generated not only from the configurational characteristics but more so from the visual intentions planted by Holl. To dissect the phenomenal experience of the visitors to his museums, potential visual fields data are used to refine the j-graphs (Fig. 5). The upper plans show the visibility graph analysis (VGA)⁷¹ indicating visual integration values of the entrance levels

of the three museums, with the darker tones representing higher integration values. Previous space syntax studies have verified that higher integration values correspond to higher circulation of people.⁷² Thus, the darker the region in the integration map, the higher the number of visitors passing through. *Isovists*—the field representing all the spaces visible from a particular point in space—are drawn from the point of highest integration in each of the museum layouts to determine whether any circulatory elements are emphasised by the spatial layout: lower plans.

From the isovist studies, it can be seen that some of the vertical circulation elements are hidden from view where most visitors will pass through. Interpreting this as Holl's spatial narrative, the j-graphs for the three museums are refined by deleting the links formed by the hidden circulatory connections (Fig. 6). The resulting configurations convey a very different intention from that reflected in the pre-modified j-graphs (see Figure 2 above). In all three museums, de-linking the hidden connections

Figure 5. Integration values (upper plans) and isovist from the most integrated point (lower plans).



untangled the multiple ring structure and resulted in a similar spatial configuration typology: a dominant ring structure featuring a single deep (12–14 spatial levels) and large (22–27 spaces) major ring with minor rings and branches growing off it. The modified j-graph unfolds the spatial configuration to reveal the ‘continually unfolding spatial sequence’.

The dominant ring converts the majority of the spaces into c-spaces—through spaces in a spatial ring—that increase sequencing and every visitor to the museums is conditioned to follow the same general sequence of space over the same order.⁷³ This configurational type mitigates the social effect of co-presence because all the visitors are moving through the museum’s spaces situated in the



Figure 6. Modified j-graphs illustrating the hidden dominant ring structure.

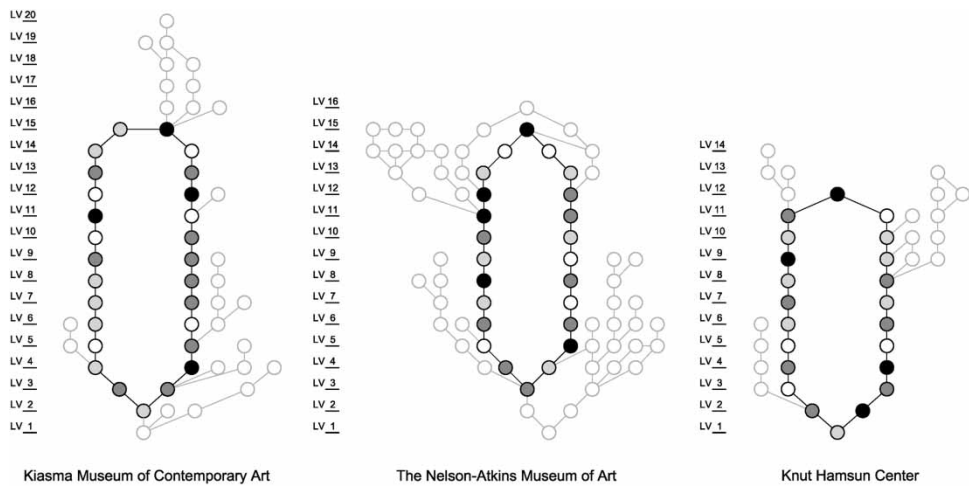
dominant ring in the same direction. Except at the junction to minor rings to branches, there is therefore primarily no head-on flow of visitors coming from the opposite direction and the kind of *reciprocal visibility*⁷⁴ that generates social encounters among the visitors is minimised. It seems that Holl has de-emphasised social encounters in favour of spatial encounters through manipulating the perspectival field: 'It is precisely at the level of spatial perception that the most powerful architectural meanings come to the fore.'⁷⁵

To examine how the *viscosity* of the museum spaces varies over the visitors' experience, each of the spaces in the dominant ring is assigned a viscosity value. The viscosity is determined by a number of factors—the number of links to other spaces, visual perspectives, natural lighting, external views, volumetric proportion, etc.—and their poten-

tial impact on the phenomenal experience of the visitors, as Norberg-Schultz writes: 'The *identity* of a place is determined by location, general spatial configuration and characterizing articulation.'⁷⁶ As exemplification, each of the spatial nodes in the dominant ring of the museum j-graphs is toned to illustrate the variation of viscosity over the spatial sequence; the darker the tone the higher the viscosity (Fig. 7) and a closer examination of the viscosity of the spaces on the dominant ring passing through the second floor of the Kiasma Museum of Contemporary Art illustrates the interpretation of viscosity variations along the visitors' path (Fig. 8).

There are eight convex spaces that form part of the dominant ring on this floor and each of them are toned to represent the different levels of viscosity. Visitors arrive at an intermediate landing

Figure 7. The viscosity
of Holl's museum
configuration.



space (S0), where the view opens up to the city through the large glazed wall at the southern end of the museum, before moving on to a staircase (S2). Looking back inside the building, the visitors have a view down the central atrium to reflect on where they came from, as well as a glimpse of the upper floors to allow clues on where they are going. The landing is assigned the highest level of viscosity based on this interplay of internal and external views. All visual connections are cut off from the small staircase space at the end of the landing in preparation for the exhibition spaces that follow, resulting in a significant drop in viscosity.

The staircase leads to a sequence of three galleries (6, 7, 8) that are devoid of tactile features in accordance with the intentions of Holl to provide 'neutral' and 'Zen-like' exhibition spaces

to push the artworks themselves to the foreground.⁷⁷ The main factor that distinguishes one gallery from another is the lighting quality. The entire eastern wall of the first gallery in the sequence (6) features translucent glass that allows natural light to wash into the room evenly, giving it stronger lighting characteristics, and thus higher viscosity, than the two galleries that follow. Exiting the galleries, visitors move onto an elongated circulatory space (C1) that further connects to a long ring of galleries. This space has the highest connectivity as the most number of spaces is directly accessible from it. So while expansive visual connectivity leads to the high viscosity at the landing space, it is the strong physical connectivity that plays the major contributor here. Again, the high viscosity space is followed by one with the lowest viscosity, a small landing (C2), which

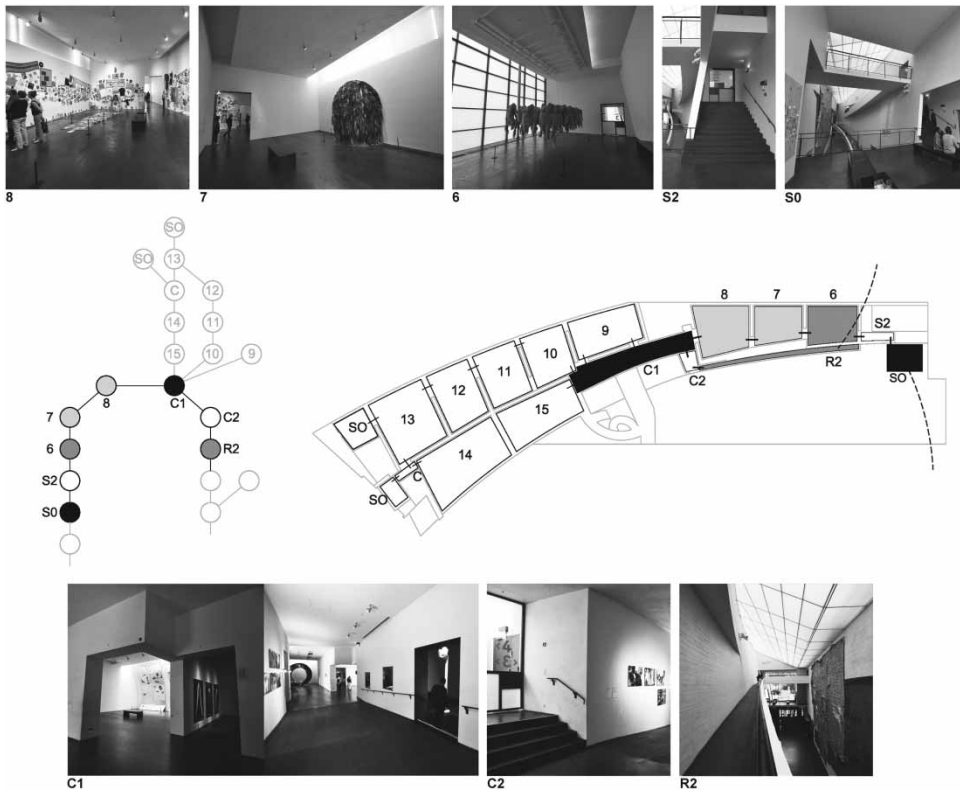


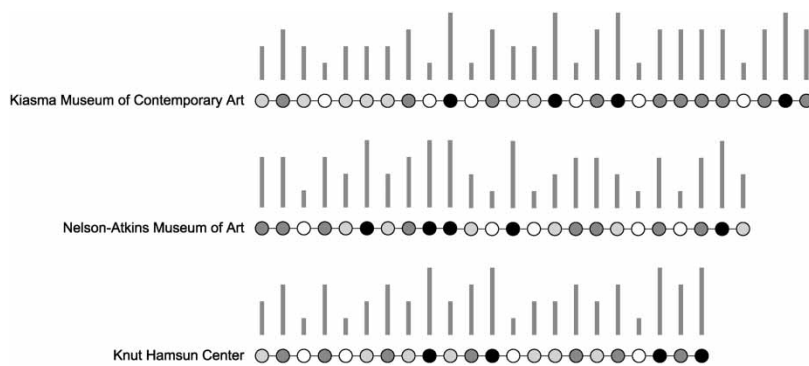
Figure 8. Sequence of second-floor spaces on the major ring.

then opens up to a space with a moderately high viscosity: the ramp (R2) that cuts through the atrium and leads to the upper floor.

However, it should be noted that the assignment of viscosity level is by no means an attempt to quantify architectural spatial properties. On the contrary, the approach stems from the interpretivist paradigm and follows the qualitative approach of the *constant*

*comparison method*⁷⁸ in which each phenomenon is compared constantly with previous ones to ascertain its nature and properties—in this case, its viscosity level—and any levels adjudged beforehand may change as a result of comparison with a newly examined phenomenon. These are interpretations of relative values of a complex phenomenon that defies absolute quantification.

Figure 9. The changing
rhythm of viscosity over
the unfolding spatial
sequence.



Since the major circulation spaces are located to the left side of the dominant rings, the sequence of spaces in the j-graphs proceeds in a clock-wise direction. To illustrate the rhythm of changing viscosity in Holl's museums, it is possible to unfold the spatial ring and depict the museum experience as a linear spatial sequence with vertical bars indicating the viscosity level (Fig. 9). Despite the consistent dominant ring structure among the three museums, the 'rhythm of viscosity changes' exhibits similarities in general but differences in detail. While there are multiple viscosity thresholds in all the museums, the peaks are distributed differently along the spatial sequence. There are also different rhythms of viscosity changes: both gradual and abrupt jump and drop in levels. These differences within the sameness—the parallax—nurture open-endedness for the free interpretation of oneself and one's meaning in the world.

Holl ended his description of the Knut Hamsun Centre with the sentence: 'Strange, surprising and phenomenal experiences in space perspective and

light will provide an inspiring frame for the exhibitions.'⁷⁹ Visual field, lighting conditions, views to the outside and so on, are therefore all part of the architect's palette to control the viscosity of the spaces in his museum layouts. The attachment to the rhythm of viscosity and the varying phenomenal experience evokes detachment from the fixed form, the formlessness of the body-in-space. Whilst according to Hillier the *geometric language* that defines the city reflects human behaviour and experience,⁸⁰ the *spatial language* of Holl's museum architecture germinates the hybrid field from which the human phenomenal experience emerges.

Conclusion

As with various forms of creative arts such as music, sculpture, painting and other design disciplines, the exemplary emanates a clear consistency in his/her work that transcends mere replication of form.⁸¹ Rather, it is a consistency in intention. Holl

echoes this view: 'It is the responsibility of every generation of architects to clarify a purpose—to articulate a vision through building.'⁸² Norberg-Schultz criticises the modern environment as one with a character that is 'usually distinguished by monotony', and he goes on to argue that 'lack of character implies poverty of stimuli'.⁸³ Reacting to this burgeoning *purity* in our built environment, Holl attempts to enrich the character of his museum spaces with the parallax as an 'always-changing, visually tectonic landscape'⁸⁴ to stimulate phenomenological architectural experiences. Creating an architecture of phenomenology has become his purpose.

This study has focused on the spatial configuration and visitor movement of three of Holl's museum designs. The intrinsic connection between the phenomenal experience and the movement through space is explained by Seaman, 'From a phenomenological vantage point, one of the most powerful aspects of space syntax is the way it demonstrates that everyday environmental movement and action are intentional in the sense of a lived synchronicity between human movement and the pathway structure through which that movement unfolds.'⁸⁵ The methodology adopted in this study is space syntax, which 'provides a conceptual and analytical language to identify and understand ways in which spatial configuration contributes to particular lived modes of being-in-the-world.'⁸⁶ It may seem incompatible at first to investigate an architecture of phenomenology, and Holl's architecture in particular, through the methods of space syntax as the tools involve operations on the plan, the 'helicopter view', to which Holl specifically

objects as a means for understanding his buildings. But as demonstrated, the space syntax j-graph method can be refined to abstract and extract certain configurational properties from the architectural layouts.

Contrary to efforts to enhance social interaction in museums, Holl instead seeks to alleviate the disruption of co-presence on the body-in-space experience in his museums: spatial encounters over social encounters. The results of the j-graph analysis of Kiasma Museum of Contemporary Art, Nelson-Atkins Museum and Knut Hamsun Centre reveal a remarkable consistency in their spatial configuration: a single major spatial ring that dominates the configuration of each of the museums' layouts. The much-intertwined physical spatial continuum unfolds to a narrative of formlessness. A formlessness not of form, but of space. Holl's intentions for the museum narrative play out not in physical form, but transgress to a higher formless level—formless as a strategy, not an outcome—unveiling a script of spatial viscosity.

Notes and references

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3. Ignasi de Solà-Morales, *Differences: Topographies of Contemporary Architecture*, ed., Sarah Whiting, trs.,

- Graham Thompson (Cambridge, Mass., The MIT Press, 1997), p. 55.
4. The event that kicked off the deconstruction connection was the 1988 Museum of Modern Art, New York, Exhibition *Deconstructivist Architecture*, curators, Philip Johnson and Mark Wigley, which featured the works of Peter Eisenman, Frank Gehry, Zaha Hadid, Coop Himmelblau, Rem Koolhaas, Daniel Libeskind and Bernard Tschumi: see P. Johnson, M. Wigley, *Deconstructivist Architecture: The Museum of Modern Art, New York* (New York, Museum of Modern Art, 1988).
 5. *Ibid.*
 6. Christian Norberg-Schultz, *Genius loci: Towards a phenomenology of architecture* (Milan, Rizzoli International, 1980).
 7. *Ibid.*, p. 170.
 8. David Seaman, 'A lived hermetic of people and place: Phenomenology and space syntax', *Proceedings of the 6th International Space Syntax Symposium, Istanbul, Turkey* (2007), pp. iii–01.
 9. *Ibid.*
 10. See p. 267 in Kimberly Dovey, 'Putting geometry in its place: Toward a phenomenology of the design process', ed., David Seaman, *Dwelling, seeing and designing: Toward a phenomenological ecology* (Albany, NY, SUNY Press, 1983), pp. 247–269.
 11. *Ibid.*
 12. Maurice Merleau-Ponty, *Phenomenology of Perception*, trs., Colin Smith (London, Routledge & Kegan Paul, 1962).
 13. *Ibid.*, p. 144.
 14. See Steven Holl's own writings, such as: S. Holl, 'Questions of perception: Phenomenology in architecture', S. Holl, Juhani Pallasmaa, Alberto Pérez-Gómez, eds, *Questions of perception: Phenomenology in architecture* (San Francisco, William Stout Publishers, 2006), pp. 39–41; S. Holl, *Parallax* (New York, Princeton Architectural Press, 2000); S. Holl, *Intertwining* (New York, Princeton Architectural Press, 1996).
 15. S. Holl, *Parallax*, *op. cit.*
 16. S. Holl, *Intertwining*, *op. cit.*, p. 11.
 17. Eva Perez de Vega, 'Experiencing built space: Affect and movement', *Proceedings of the European Society for Aesthetics*, 2 (2010), p. 387.
 18. S. Holl, *Tripleness: See, explore and make art* (Belleuve Art Museum, 2001).
 19. S. Holl, *Parallax*, *op. cit.*, p. 26.
 20. *Ibid.*, p. 13.
 21. See the interview in Yukio Futagawa, ed., *GA document extra 06: Steven Holl* (Tokyo, A.D.A. Edita Tokyo, 1996) and also S. Holl, *Tripleness*, *op. cit.*, in which he states: 'Architecture is an important field today in terms of counter-balancing a culture that's becoming numb to textures, smells, acoustical properties of space, the excitement of perspective unfolding and enveloping. You can't get these experiences on a flat screen.'
 22. S. Holl, *Tripleness*, *op. cit.*
 23. S. Holl, *Intertwining*, *op. cit.*, p. 16.
 24. *Ibid.*, p. 16.
 25. S. Holl, *Architecture spoken* (New York, Rizzoli, 2007), p. 257.
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 27. Gilles Deleuze, *The fold: Leibniz and the Baroque*, trs., Tom Conley (London, Athlone Press, 1993), pp. 19–20.
 28. See Karen Franck, 'Phenomenology, positivism, and empiricism as research strategies in environment-behavior research and design', Gary Moore, Ervin Zube, eds., *Advances in environment, behavior and design, vol. I* (New York, Plenum, 1987), pp. 59–67 and also S. Holl, *Intertwining*, *op. cit.*, p. 16.
 29. S. Holl, *Architecture spoken*, *op. cit.*, p. 47.
 30. S. Holl, *Parallax*, *op. cit.*, p. 200.

31. See Leibniz's discussion of motion in Gottfried Wilhelm Leibniz, *New essays on human understanding*, trs. and eds, Peter Remnant, Jonathan Bennett (Cambridge, Cambridge University Press, 1981): 'As for motion: it has only phenomenal reality, because it belongs to matter or mass, which is not strictly speaking a substance.', p. 200.
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33. G. W. Leibniz, *New essays on human understanding*, *op. cit.*, p. 60.
34. S. Holl, *Questions of perception*, *op. cit.*, p. 45.
35. S. Holl, *Architecture spoken*, *op. cit.*, p. 45.
36. S. Holl, *Intertwining*, *op. cit.*, p. 14.
37. S. Holl, *Questions of perception*, *op. cit.*, p. 41.
38. A. Pérez-Gómez, 'The space of architecture: Meaning as presence and representation', in, S. Holl, J. Pallasmaa, Pérez-Gómez, eds., *Questions of perception*, *op. cit.*, pp. 23–24.
39. See G. W. Leibniz, *New essays on human understanding*, *op. cit.*, pp.110–111, for a discussion of the relationship between the formation of ideas and experience.
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44. S. Holl, *Intertwining*, *op. cit.*, p. 90.
45. *Ibid.*, p. 90.
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48. Maurice Merleau-Ponty, *Phenomenology of Perception*, *op. cit.*, p. 250.
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