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## UNGRASPABLE CRITICALITY

### Surface in architecture

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#### **Introduction**

This chapter is a theoretical, philosophical, and pedagogic examination of the potentiality and relevance of surface to architectural theory and imagination. The first section, titled ‘The space of surface,’ exposes as well as challenges the polarized conceptions of surface and space, which disprivileges surface. It presents surface as a new epistemological and creative terrain, and proposes four new surface typologies (urban surface; surface as an integrated element; surface as optically and physically transient; and as design method), in addition to representational surface. The second section, ‘The critical unconscious,’ questions the invisibility of surface and its inaccessibility to analysis despite (or because of) its overexposed status. Instead of merely challenging the peripheral or fringe status of surface, the section argues that surface is the disciplinary unconscious of architecture, and therefore its critical apparatus. The final section, ‘The creative critical,’ investigates the potentiality of surface, not for its own sake but to unleash the creative possibilities in organizations by using surface to take the focus off design methods invested in the ‘orthographic gaze.’ This is explored collaboratively with University of New South Wales students through an experimental studio project which approached the redesign of an institutional building from ‘outside in’ by using the surface typologies mentioned above and by unpacking the spatiality of surface.

#### **The space of surface**

Surface in architecture can be variously defined as skin, threshold, liminal space, edge, boundary, and image. Even though the presence and persistence of surface is historical, a comprehensive history and theory of architectural surface does not exist. There were a number of positions and perspectives on ornament and surface in post-Enlightenment Europe centering around issues of historicism and rationality. One of the most radical, yet elusive, theories of surface came from nineteenth-century art critic John Ruskin, who used the language of fragments to articulate a theory of architecture as surface.<sup>1</sup> He viewed the creative act in architecture, analogous to the divine act of creation, as a form of dressing. Through radical reinterpretations of exterior elements of medieval buildings, Ruskin suggested that the physical and symbolic separation between the cladding (and ornament) and structure (masonry wall) was evocative of the relation

between a dress and a body. The gently undulating, yet cohesive, surface of the building was like the folded surface of a dress. Integration of low relief and polychromatic ornament mirrored rich and luxurious patterns in woven textiles. As clothing made the body a meaningful cultural object, the addition of “venerable or beautiful,” but “unnecessary,” features to the edifice converted ‘building’ (otherwise unmemorable and not properly the object of history) into ‘architecture.’<sup>2</sup> However, Ruskin’s writings lacked persuasion. Not only was he not a trained architect, but he was also writing at a time when constructive and scientific readings of buildings (inspired by Robert Willis and William Whewell) were dominant. Above all, the ‘discovery’ of space was imminent, which would ultimately diminish debates on surface.<sup>3</sup>

It is important that we see space and spatiality in architecture as an historical condition, as this problematizes the widely held assumption that spatiality is the essence of architecture and, frequently, its disciplinary limit. There were two key paradigms in the nineteenth century: space as enclosed and space as defined by the movement of the human body.<sup>4</sup> The first paradigm was advocated by Gottfried Semper, and then Hendrik Petrus Berlage, who declared that the “art of space” was the “true art of architecture.”<sup>5</sup> The second perspective was advanced by August Schmarsow, in “The Essence of Architectural Creation” (1893), where he argued for the dynamic constitution of space via the coordinates and movement of body in space.<sup>6</sup> The effects of these discoveries were far-reaching and long-lasting. Not only was there an immediate uptake of these theories in the early twentieth-century discourses of architecture (Gustav Platz’s *Die Baukunst der neuesten Zeit* [1930] and R.M. Schindler’s *Space Architecture* [1934]), but they also formed the basis of architectural knowledge.<sup>7</sup> Bruno Zevi’s *Architecture as Space* (1948), which claimed, “[a] satisfactory history of architecture has not yet been written because we are still not accustomed to thinking in terms of space and because historians of architecture have failed to apply a coherent method of studying buildings from a spatial point of view.”<sup>8</sup> Sigfried Giedion’s *Space, Time, and Architecture* (1941) presented space as having three manifestations. According to the “Three Space Conceptions,” space existed in the “interplay between volumes”; the development of “hollowed out interior space”; and the “interpenetration of inner and outer space.”<sup>9</sup> Consequently, architectural invention was measured through spatial lenses and the heroic figure of the architect was imbricated in the delineation of new spatial paradigms: Adolf Loos’s theory of the *Raumplan*; Le Corbusier’s theory of the *architectural promenade*; Theo van Doesburg’s theory of neoplastic space; Ludwig Mies van der Rohe’s universal space; and Louis Kahn’s plan as the society of rooms.

This chapter also presents the surface turn—a recent phenomenon observable in the emergence of the new field of surface studies, located at the convergence of the disciplines of science, art, design, technology, literature, anthropology, and ethnology. Liz Oakley-Brown and Rebecca Coleman, founders of Surface Studies Network, define this as the scholarship pertaining to the “skin, screens, lines, interfaces, fabric, and the earth.”<sup>10</sup> Surface is repositioned as the locus of knowledge and perception of life and world. The initial impetus came from ecological psychologist James Gibson’s *Ecological Approach to Visual Perception* (1979). Gibson argued that the world consisted of “medium, substances, and the surfaces that separate them.” Nevertheless, surface was considered more important because this is where “most of the action” was.<sup>11</sup> The action was variously defined as touch, chemical reactions, diffusion, vaporization, and erosion.<sup>12</sup> The main aim, therefore, of surface studies is to offer surface as the only available reality. This is argued most persuasively, from a literary perspective, by Stephen Best and Sharon Marcus, who ask us to adopt a form of reading that abandons “symptomatic reading.” This has contributed to the association of surface with deception and dishonesty and has obscured the “complexity of literary surfaces,” to the extent that surfaces may now be regarded invisible.<sup>13</sup> Best and Marcus offer the modality of “surface reading,” which does not treat surface as “neither hidden nor

hiding,” but as that which has “length and breadth but no thickness, and therefore covers no depth.”<sup>14</sup> As a form of reading that looks at surface and does not look through it, this opens up a range of interpretive possibilities: surface as materiality, structure, affect, meaning, patterns, and “critical description.”<sup>15</sup> In effect, surface is sufficient.

A number of different motivations and perspectives constitute the field of surface studies. The skin is defined, in Ellen Lupton’s *Skin: Surface, Substance, and Design* (2002), as a “multilayered, multipurpose organ,” which industrial objects are designed to complete, complement, or augment.<sup>16</sup> Lupton argues that, while designed objects have taken on a sentient quality through the design of detachable, translucent, and articulated skins, the human body is also redesigned through the transformations of its skin in response to technology, medicine, cosmetics, and fashion. The visual world of media (screen and image) is explored in Giuliana Bruno’s *Surface: Matters of Aesthetics, Materiality, and Media* (2014), which contends that the world of mediatic experiences is neither thin nor flat: it is a fabric-like plane of inhabitation, which is not only thick but also layered and folded. Bruno argues that media is neither imperceptible nor ungraspable, it is material.<sup>17</sup> The materiality of media, essentially a “surface condition,” is produced through the surface as the medium of “projection and mediation,” as well as occupation and inhabitation.<sup>18</sup> Visuality is explored further by Vittoria Di Palma, who looks at the opticality of the blur, and the absent/present plane upon which one’s eyes may rest, as a questioning of the tenets of perception that have come to dominate discourses of modernity. Di Palma also demonstrates that the atmospheric (optical) phenomena of blur (and cloud and aura) are explored by architects in an attempt to shift the privileged position of the viewer as now immersed in the work, by articulating the “aesthetics of uncertain and pure effect.”<sup>19</sup> Surface is imagined beyond the binaries of interior/exterior, visible/invisible by Mike Anusas and Tim Ingold, who propose a textile conception, whereby the world is no longer thought of as a network of “discrete objects,” and instead imagined as an “entangled mesh of materials in energetic movement, out of which the forms of things are continually emerging.”<sup>20</sup> Anusas and Ingold’s model of the environment as surface as textile means that nothing is inert, fixed, or separate and that everything is constantly made and remade, such that we live an enmeshed existence with the artifacts of our making.

There were corresponding shifts in architectural discourse in the 1990s. One strand was represented by the critical discourse on modern architecture’s non-representational stance. Mark Wigley’s *White Walls, Designer Dresses* (1995) examined the phenomenon of the whitewashed walls, exemplified by Adolf Loos and Le Corbusier’s buildings. He emphasized the importance of visibility to modern architecture, arguing that the whitewash was not just a property of the object in the visual field but was “actually involved in the construction of the visual.”<sup>21</sup> Wigley observes the paradox of the white wall: it was opaque, yet it had to stand in for the transparent. This was achieved by making the white wall a “part of a look” of modernity, such that it was then “looked through.”<sup>22</sup> Wigley and Hélène Furján also reveal how the whitewash was a form of dressing that was modeled upon modern fashion: the crisp white shirt for Le Corbusier and the gentleman’s black suit for Adolf Loos.<sup>23</sup> This signaled a visual shift—from ornament (that was attached) to quality and finish (intrinsic to the material) and elegance (the cut and the silhouette). The non-representational premise of modern architecture is also challenged by David Leatherbarrow and Mohsen Mostafavi’s *Surface Architecture* (2002). They argue that the emergence of the free façade, championed by modernists such as Le Corbusier, meant that the skin was independent of the structure, and the cladding no longer needed to communicate the tectonic (or load-bearing) function of the wall.<sup>24</sup> The skin was therefore subjected to many reinventions, some of which were concerned with reconciling the cladding’s condition as an “industrial artifact” and a “designed artifice.”<sup>25</sup>

A second strand of thinking on surface, also developing in the 1990s, was organized around emerging alignments between Deleuzian metaphysics, topological surface, and digital design. Gilles Deleuze located the locus of sense on the surface. In *The Logic of Sense* (1969), he argued that the “living lives at the limit of itself, on its limit,” and the “entire mass of living matter contained in the internal space is actively present to the external world at the limit of the living.”<sup>26</sup> Signs cannot be said to make sense if they do not enter the “surface organization,” this “topological surface of contact.”<sup>27</sup> Furthermore, this surface is capable of being infinitely pleated, which means it may harbor interpenetrative arrangements of folds inside folds.<sup>28</sup> This topological model is a biomechanical entity. Alicia Imperiale explains that concepts of topology and the fold found traction in design, through the NURBS-based digital software is essentially dynamic and amenable to curvilinear manipulation where successive surfaces are defined with respect to previously defined surfaces.<sup>29</sup> This was explored in Greg Lynn’s “The Folded, the Pliant and the Supple” (1993). Lynn defined topological surfaces as “superficial structures susceptible to continuous transformations [that] easily change their form.”<sup>30</sup> These forms are capable of “knotting, twisting, bending, and folding” under pressure. However, argues Lynn, the folding of topological surface is not “superfluous.” It is not about form: it is about internalizing within the form external forces, creating complex and continuous organizations harboring intricate connections.<sup>31</sup>

These debates are taken beyond the digital by two recent edited collections that curate contemporary approaches to surface in architectural practice and theory. The aim of these debates is not to appropriate surface studies into a new spatial paradigm, as the discussions are as much about the spatiality of surfaces as they are about the surface qualities of spaces. Mark Taylor’s “Surface Consciousness” (2003) declares that his focus is on “surface as the subject of study,” rather than on the relations between surface and depth. Taylor’s inquiry is focused on triangulating digital design, topological surface, and Avrum Stroll’s *Surfaces* (1988). It builds on Stroll’s theory of surface as boundary, wherein surfaces are abstract as well as physical entities, where one is not more or less important than the other. Taylor offers Stroll’s four conceptions of surface—as interface; as the conceptual limit produced by the thinning out of a physical object; as having physical bulk; and as the “last layer of atoms,” or the uppermost part of an object—as ways in which this debate can be given greater specificity. Amanda Reeser Lawrence and Ashley Schafer, in “Expanding Surface” (2007), argue that practices invested in surface as a territory of architectural invention were essentially following two approaches: one concerned with expressive forms (Lynn, Eisenman), and the other with material articulation (Ando, Herzog de Meuron). Lawrence and Schafer present a third approach: projects where “both form and material are articulated through the surface.”<sup>32</sup> More recent practices such as Aranda/Lasch and Andrew Kudless produce works where “form becomes surface; surface becomes form.”<sup>33</sup> Reeser and Schafer celebrate the uncertainty and ambivalence around the term surface, as this opens up the debate to imagining the new, i.e., the not yet codified.

The creative agency of surface is considered in Andrew Benjamin’s “Surface Effects” (2006). His theoretical history of surface looks at surface as non-representational, and essentially “operative or generative” in nature, such that it is seen as actively producing architectural phenomena and events, rather than “simply being the consequence of the process of its creation.”<sup>34</sup> Benjamin deploys the writings and drawings by Francesco Borromini, Semper, and Loos to demonstrate that it is surface “at work” that is able to “effect” the organization of space, program, and geometry. This is why Benjamin uses the term “surface effect.” This gives surface a creative agency, which is the object of this chapter. It is within this context of the surface turn that my edited collection *Surface and Deep Histories* (2014) presents a partial history of the architectural surface. It employs the framings of precursors, interruptions, failed interruptions, emergences,

and reappearances. These frames are neither exhaustive nor strictly chronological. However, what they do show is that attitudes to surface emerge, collapse, and reappear, sustaining it as a legitimate theoretical and artifactual entity, almost transhistorically. The frames also show that surface is both superficial and pervasive, symbol and space, meaningful and functional, static and transitory, and object and envelope. The book presents five typologies of surface in architecture. Beyond the representational surface that contributes to the construction and communication of architectural or extra-architectural meanings and associations (for example, Herzog & De Meuron's Ricola Storage Building), four additional typologies are proposed.<sup>35</sup> First, surface can be seen as having an urban agency. The focus is on the liminal space created by windows, doors, balconies, loggias, projections, and screens that not only articulate the building's relevance to the city but also shape the public life in the city (for example, Rafael Moneo's Murcia Town Hall).

Second, surface can be seen as an integrated element, whereby the surface pattern and composition is made a meaningful part of the structural system, and its articulation may have a direct or indirect impact on the interior space and its habitation (for example, Toyo Ito's TOD's Building). This challenges the quotidian definition of surface as an exteriorized element, separate from the 'real' architectural concerns of space and structure. Third, surface may be optically and physically transient, challenging its characterization as static and pictorial. A transient surface may include a textured or changeable composition of physically movable projections, like shading devices (for example, Foreign Office Architects' Carabanchel Housing), but it also may well be composed of patterns on opaque or transparent planes that constantly refigure to the tone of the shifting climatic, occupational, and viewing conditions (for example, Ned Kahn's art projects). Transient surfaces are distinct from representational surface because they primarily challenge the usual dichotomies of surface and space, stasis and dynamism, and permanence and transience. Fourth, surface is identified as the design method. Given the topological exploration made possible by digital software, architects are now in a position to find new forms of spatial organizations via the manual or digital processes of layering, folding, and pleating (for example, UNStudio's Möbius House). This offers an alternative to the classical orientations of the discipline, marked by its unconditional and sometimes uncritical reliance on orthographic projections.

### **The critical unconscious**

The consideration of surface is relevant because it reveals many assumptions concerning the disciplinary limits of architecture. The key issue at stake here is the ontology of architecture. Philosopher Jeff Malpas argues that ontological inquiry is precisely about the "*being of architecture*, at uncovering its proper limits and grounds."<sup>36</sup> Malpas argues that the current discourses are not good at asking questions concerning ontology. They do not move beyond what we understand architecture to be. Critical and post-critical discourses raise questions, but these are to do with the "political and discursive positioning of architecture."<sup>37</sup> Ontological inquiries would go to the heart of what architecture is or is not, what it refuses to be, or what boundaries it defends and what is at stake. Such questions would also highlight as well as intensify what Nathaniel Coleman defines as the already existing "disciplinary crisis." Coleman argues that it is primarily because of architecture's condition as a "weak discipline" that it is unable to ground itself in "absolute architectural truth," which beyond being uncertain, does not exist.<sup>38</sup> Coleman argues that the disciplinary crisis could be mitigated if its weakness was accepted as part of its being, and efforts to make it strong were abandoned.<sup>39</sup>

Interestingly, these are also the kinds of questions that are prompted by K. Michael Hays in "Critical Architecture" (1984), which argues that criticality is supposed to be "resistant to the self-confirming, conciliatory operations of a dominant culture and yet irreducible to a purely

formal structure disengaged from the contingencies of place and time.”<sup>40</sup> More specifically, it ought to mount a “challenge to those views that claim to exhaust architectural meaning in considerations of only one side or the other.”<sup>41</sup> To this end, the exposure of the dominant tendency in discourse, not only to polarize space and surface but also to undermine surface (Adolf Loos and Le Corbusier’s rejection of ornament and advancement of white walls, as well as Henry Russell Hitchcock and Philip Johnson’s *International Style*, which reframed surface as the continuous taut plane that held together the volume of architectural space) as a concern ancillary to architectural imagination and design, is the critical turn that this chapter presents. It attempts to rescue surface, from either eternal oblivion or an uncritical, positivist return, as the result of developments in digital technologies. This is important especially because surface has thus far remained inaccessible to analysis, disregarded as an uncritical element of architecture, lacking any real agency, and incapable of ‘serious’ consequences.

The peripheral status of surface is what augments my search for a critical terrain. Surface has thus far remained invisible, despite (or because of) being ‘overexposed.’ Importantly, Eichinger notes, “[w]e are so accustomed to moving amid surfaces that we either take them for granted or we see them as insignificant.”<sup>42</sup> Beatriz Colomina has also argued, “[s]ometimes the best way to hide something is in full sight.”<sup>43</sup> Anne Cheng echoes Colomina in a recent publication, “[s]ometimes it is not a question of what the visible hides but how it is that we have failed to see certain things on its surface.” Eviatar Zerubavel’s *Hidden in Plain Sight* (2015) explores this as the phenomenon of inattentiveness, whereby experiences entering consciousness remain unperceived and a part of the “background.” Zerubavel notes the phenomenon is produced through “sociomental” processes, such that it is communities who hold particular professional, ideological, religious, and cultural views that mediate “attention-worthy” experiences and facts.<sup>44</sup> This chapter turns its attention to the ‘veiled’ status of surface. The reversal of background and foreground or, more accurately, the entwining of the two is also informed by Derrida’s post-structuralist writings on the center and the periphery, and the politics of hierarchy. Anthony Elliott explains that Derridean deconstruction aimed to “displace political hierarchy” by not only revealing “how the West depends on its Others to constitute itself as centre,” but also by tracing the “deferred significations through which the West as centre is decentred by political peripheries.”<sup>45</sup> To this end, this chapter looks at surface as architecture’s Other: it sustains and supports architectural signification without any real agency and presence.

The critical turn is sought through the psychoanalytic metaphor of the unconscious, and framed through the decentering of the dominant/center/architecture through the repressed/periphery/surface. Lacanian psychoanalysis, according to John Shannon Hendrix, claims that the unconscious is the alienation and otherness within the structure of thought and consciousness, “as an absence . . . as that which is other to it within itself.”<sup>46</sup> Hendrix explains that the ‘unveiling’ of the architectural unconscious occurs at the “point at which a system rotates or flips, forms are interwoven, or centripetal and centrifugal organizations overlap, revealing the . . . unconscious in the conscious.”<sup>47</sup> The Lacanian notion of the unconscious has been previously utilized in architectural theory, either as haunting loss and the search for the unattainable, or as a point of disturbance in the apparent seamlessness of knowledge and history. In *Architecture’s Desire* (2009), Hays describes the unconscious desire for the lost object of architecture, its laws and language, and its oneness, which cannot be regained;<sup>48</sup> While Anthony Vidler, in *The Architectural Uncanny* (1992), suggests the presence of the un-homey, estranged, and the defamiliarized in the works of the modernist avant-garde, figuring Freud’s notion of the uncanny, which is the re-emergence of the repressed/forgotten unconscious.<sup>49</sup> *The Architectural Unconscious* (2001), a collection of essays on a curated exhibition of the same name at the Institute of Contemporary Art, University of Pennsylvania, explores this subject—in particular, for example, how Casebere’s photographs

closely capture the haunting emptiness of an archetypal interior and appear to hover undecidedly between real and imagined space.<sup>50</sup>

The strategic stance on the unconscious is theorized first through Luce Irigaray, then Walter Benjamin. It argues that the unconscious can be seen as a threatening presence (rather than absence) and potentiality. In *Sexual Subversions* (1989), Elizabeth Grosz explains that Irigaray works with and against Lacanian psychoanalysis, to suggest a “culturally (rather than psychically) produced unconscious, a repression in texts, knowledges and institutionally regulated practices.”<sup>51</sup> It takes the form of “other logic or ‘reason’” that “consciousness takes for granted.” Grosz argues that Irigaray’s interest has always been to locate “blindspots” in psychoanalytic theory and frame them as “sites of symptomatic eruption of femininity.” Irigaray takes this further as she poses an analogy between psychoanalysis and knowledge, and discourses in general, that make truth claims, which also contain “repressed or unconscious ‘feminine’ element.”<sup>52</sup> Truthful discourses are produced by creating certain repressions and exclusions, on which they must always rely. These arguments are intensely useful in interrogating the ambit of architectural imagination, to reveal that which must be excluded to ensure the effective functioning of the discipline, suggesting the presence of a disciplinary unconscious.<sup>53</sup>

Walter Benjamin, too, suggests a culturally (and technologically) produced unconscious, the “optical unconscious,” which resides in the visual field of the camera and photography. Detlef Mertins observes that Benjamin placed the “unconscious in the material world itself, not outside, behind, above or below it, but within.”<sup>54</sup> In “A Short History of Photography” (1931), Benjamin claimed that “it is another nature that speaks to the camera than to the eye . . . It is through photography that we first discover the existence of this optical unconscious, just as we discover the instinctual unconscious through psychoanalysis.”<sup>55</sup> The camera offered realities that were not otherwise available to human sight and perception, such as the range of movements that constitute the act of walking. But there was more to it. Benjamin referred to the “magical value” of the photograph, which was in the contingency of the moment the photograph was taken, which could be uncovered if one so wished. Benjamin also noted how photographs, normally identified with “atmospheric landscape or the soulful portrait,” revealed intense “physiognomic” attention to “[d]etails of structure, cellular tissue,” conditions more native to medicine and technology.<sup>56</sup> The optical unconscious was palpable as interruptions to the unity and comprehensiveness of the photograph. Detlef Mertins extrapolates this argument. He connects the optical unconscious to criticism—the critic had to strip the object bare of any mystery and bring forth the “truth content.” The violence of the critical act was potent, as it opened up the “future potentiality of the object.”<sup>57</sup>

Synthesizing the perspectives of Irigaray and Benjamin, I suggest that surface is the architectural unconscious. The conceptual invagination that Hendrix refers to occurs precisely at the overexposed site of the surface. The act of looking past, looking through, or not looking at surface at all, constitutes it as a blindspot. The critical capacity of surface derives from its physical and conceptual in-betweenness. Surface is neither one nor the other, being simultaneously deep and shallow, inside and outside, and superficial and substantial. As it is neither completely repressed nor fully materialized, surface can therefore claim capacity as a critical stance. In order for architecture to remain critical of its own terrain, it must make space for surface—to narrate other histories, provoke alternative spatial possibilities, and allow new knowledges and practices to prevail. The sighting of the architectural conscious is not just a critical turn, it is also a creative turn. It is suggestive of potentiality, or the future of the past. Potentiality, as defined by Andrew Benjamin, is “a yet-to-be realized possibility” locked in a phenomenon in the present or past. Benjamin defines this as a “set of relationships,” not the “re-enactment” or the “reproduction” of a phenomenon. Most importantly, it is a generative and productive force with its locus in the present.<sup>58</sup>

### The creative critical

The provocation to investigate the critico-creative ‘function’ of surface is provided by critical management studies perspectives on architecture, organization, and power. As Thomas Markus argues, built spaces are made of spatial structures and social structures. By themselves, they are meaningless, as they are “inseparably linked,” and work to reinforce each other.<sup>59</sup> Markus’s configurational theory of space is indebted to Bill Hillier’s work with space syntax, whereby it is possible to decode buildings by reading adjacency and permeability of spaces, such that some buildings may be “deep, some shallow, and some tree-like while some are ring-like.”<sup>60</sup> This is based on route and access, as well as freedom of movement, and opportunities for structured and chance encounters. However, while the main purpose of buildings is to accommodate certain functions, a key objective is also to embed social relationships, specifically power relationships.<sup>61</sup> Markus argues that, while the traditional critique of the premise of asymmetries in power may be justice, buildings also embody another kind of social relationship—bonds that include friendship and camaraderie.<sup>62</sup> Social bonds are not about competing for finite resources: they “appear to create an unbounded or infinite resource.”<sup>63</sup> This is the ideal situation, but it does not always happen. In *Words Between Spaces* (2002), Markus and Deborah Cameron argue that buildings are normally conceived and designed through the language and taxonomy of spatial labels. The privileging of management of spaces to achieve functional clarity and efficiency, over the bonding between different people who could possibly collaborate and create new ideas and products, could possibly deter “social change and design innovation.”<sup>64</sup>

It is this premise that is explored by Martin Kornberger and Stewart Clegg in their “generative building” proposition in “Architecture of Complexity,” which further resonates with Markus’ argument that buildings “typically define and confine,” when they should ideally “create and trigger potential.”<sup>65</sup> Kornberger and Clegg examine the organizational space (or the material, spatial structure within which organizations sit) and contend that, while buildings are able to enable complexity, they are also in a position to “limit, hinder, and decrease the unfolding of events.”<sup>66</sup> Positive organizational changes may be assisted by the generative building’s spatial structure, which may foster “plurality, contradictions, and dissensus.”<sup>67</sup> Kornberger and Clegg also offer Gilles Deleuze’s concept of the fold and Michel Foucault’s notion of heterotopia as ways forward in thinking of a generative building and organization.<sup>68</sup> They argue that, while the fold blurs concepts of the inside and the outside, the included and the excluded, heterotopia makes possible the invention of new languages, orders, and identities. Kornberger and Clegg develop this argument further in “Bringing Space Back In: Organizing the Generative Building” (2004), where they reject the functionalist paradigm. They argue that the efficient building often fails to challenge the “pre-formulated areas of knowledge,” whereas spatial organizations ought to be “actively involved in the creation of new power-knowledge relations.”<sup>69</sup> They offer a number of paradigms through which the generative building may be imagined: spatial structures must allow for the equilibrium of order and chaos, create conditions for flexible uses and interactions to happen, be designed around how people move through buildings, and be responsive to flows of people, ideas, and relations. They must not subscribe to a fixed hierarchy.<sup>70</sup> This is no simple feat.

For this to even be conceivable, it is important to revisit the projective means through which architecture is generally conceived—the orthographic plan drawing. While the tradition of drawing the plan started with Leon Battista Alberti, it gained prominence through the École des Beaux-Arts’ approach to composition. French-born American architect Paul Philippe Cret observes the extent to which the plan was expected to “show the fitness of a building to its uses.”<sup>71</sup> Beaux-Arts’ fascination with the *parti* (a diagram that shows the



building's organizing principles) meant that architects "began to lavish every effort on the plans," to the extent that the plan became a "decorative composition" and a "pleasing picture in itself," often lacking efficiency of arrangement.<sup>72</sup> The plan was put to a different use by Jean-Nicolas-Louis Durand in articulating his reductive theory of rational architecture. Not only did Durand make modifications to the plans of historic buildings to suggest simple and repetitive geometries that could be easily applied and replicated, but his drawings also suggested that the ideal design process was expected to proceed through a plan (as if constructed on a graph paper) by way of a series of major and secondary axes, resulting in a grid that structures spaces according to the hierarchy of functions, irrespective of the site or program.<sup>73</sup>

The plan became more prominent in the twentieth century. Le Corbusier declared that the "plan is the generator . . . [it] is what determines everything: it is the decisive moment."<sup>74</sup> The plan, endowed with certainty and accuracy, was supported by Frank Lloyd Wright, as evidenced in his statement, "[a] good plan is the *beginning* and the *end*." Linking the mastery of design to the virtuosity in handling the plan as a projective method, Wright declared that "[t]o judge the architect one need only look at his ground plan. He is master then and there or never."<sup>75</sup> Indeed, his own house typologies (in-line, cruciform, and pinwheel) were conceived and resolved through plans. Still, the plan was not the be-all and end-all. In *International Style* (1932), Hitchcock and Johnson suggested that the power of the plan had been overstated. They explained that an unmediated expression of the plan did not automatically lead to the expression of uniformity, an important aesthetic in International Style. This had to be orchestrated by considering the "relation of the various sorts of geometrical projections."<sup>76</sup> What is more, the plan is incapable of representing the real building. Anton Stuckardt observes correctly that the space of the plan is different from the space of the building. Stuckardt calls this the "illusion of plan," evidenced, for instance, in the Gardens of Versailles, where the layout conceived as geometrical relations in plan form is experienced as labyrinthine space.<sup>77</sup>

The plan, a key representational technique in architecture, produces and augments the compartmentalization and management of spatial relations that characterize inflexible organizations. Much like the cartographic map, plans lay bare, for inspection by the gaze of the architect, the configuration of spatial and social relations. To draw the plan is to be able to see every aspect of the building, and to be able to be able to see, is to be able to control, wittingly or unwittingly. Damjan Jovanovic's "Fictions: A Speculative Account of Design Mediums" (2016), brings further focus to this topic. Jovanovic observes that every projection is associated with a kind of gaze that is neither neutral nor disinterested, and always invested in a certain politics of looking.<sup>78</sup> He uses the term *orthographic gaze* to describe planar thinking, wherein the "top view implies the idea of total control." This was particularly useful in buildings that relied on "central hierarchy and centralised political authority," which "impose flat organisational" models of space.<sup>79</sup> It is not that I am proposing abandoning the plan altogether: instead, it is argued that if we are to reimagine the social effects of space, then imagining it through the very means by which its limits are produced seems futile.

The plan is, however, no longer the limit of the projective architectural space. Neil Spiller's edited issue for *Architectural Design*, titled "Drawing Architecture" (2013), focused on the "fifth dimension" of architecture and aimed to illustrate how the "triadic system of plan, section, and elevation" is no longer valid.<sup>80</sup> The advent of the digital image and information design has given rise to hybrid representations that defer and deflect the orthographic gaze. Nic Clear is critical of the practice's "static," "outmoded," and "arcane" adherence to the plan.<sup>81</sup> He argues that, in order for the profession to harness the "expanded" field of architecture, it needs to exceed its commercial ambit, and position itself in the "wider discourse of spaces of information, speculation, and immersion."<sup>82</sup> Perry Kulper demonstrates a departure from the triad, by integrating

“visualisation and thinking as a relational and synthetic practice.”<sup>83</sup> Kulper looks beyond the descriptive and metric attitude to drawings, toward the process of discovery in the act of creating drawings, through the graphic surface that is saturated with marks of fact and fiction. Along similar lines, Karl Wallick outlines the emerging practice and theory of the “generative drawing.” The drawings produced by Wallick’s students in comprehensive graduate studios had little to do with communication: they were “manual-digital hybrids,” simultaneously drawing, collage, and diagram, which are “productive instruments for architectural inquiry.”<sup>84</sup> These drawings are generative because they create an “active” surface that transforms and reframes the design conceptualization process.

The studio project for the MArch Programme at the University of New South Wales (UNSW) in 2011 was informed by the idea of generative drawing. But, instead of starting with drawing, the studio started with the idea of the conceptual model *as* drawing. Tom Porter and John Neale describe the conceptual model as an “intimate and embryonic sketch in three dimensions.”<sup>85</sup> Similarly, Nick Dunn defines it as a “three dimensional diagram when the idea is still in its infancy.” Dunn, however, gives it more agency, as he claims that the conceptual model makes concrete theoretical ideas by transforming them into “observable ‘things.’”<sup>86</sup> Nevertheless, it is limiting to define the conceptual model as a nascent or underdeveloped form of reality. The chapter argues that it is an alternative form of reality: work of art, and complete in itself. Conceptual models, explains Francesca Vocialta, became important due to the conceptual art movement’s influence on postmodern architects. These models captured the personal, the imaginary, the provocative, and the experimental, and they occupied the “limit between architecture and art.”<sup>87</sup> Straddling the intersecting realms of drawing and modeling, the UNSW students started with conceptual models that hovered undecidedly between ‘deep surface’ or ‘shallow space,’ exploring the model as projective space.

The UNSW studio was also informed by the pedagogic model of research studios.<sup>88</sup> David Salomon explains that one of the key reasons educators are moving away from design thesis to research studio is that students and faculty are now seen as engaged in the process of “knowledge production.”<sup>89</sup> The difficulties are around qualifying design as research, and mediating research and experiment. While architectural design is now considered a researcherly discipline (it advances the state of the art and it utilizes a number of research methods), it is Salomon’s extrapolation of Bruno Latour’s framing of research and science as incompatible (science is certain and controlled, and it diminishes conflicts, and research is uncertain and risky) that really clarifies the nature of the research studio. Salomon suggests a closer affinity between research *and* design, claiming that they both are “similarly experimental, subjective, and political.”<sup>90</sup> To this end, the research studio is a setting where the outcome is not so much a building design—it is a form of argument, and interrogation of the “very institutional status of what architecture is.”<sup>91</sup> A very important part of the research studio is sustaining the uncertainty associated with experiments and experimentation. Therefore, design projects emerging out of these studios “will not always produce what one expects or desires.”<sup>92</sup>

The research aim of the UNSW studio was to imagine alternative futures for a structured institutional space and discover spatial configurations and effects that become possible by approaching the design process outside in. The design project was the refurbishment of a section or a threshold of the West Wing of the Red Centre building (Francis-Jones Morehen Thorp Architects, completed 1998) at the University of New South Wales’ Kensington Campus in Sydney (Figure 16.1). The educational studio project consisted of three stages: (1) deconstruction: uncovering or becoming aware of surface typologies; (2) construction: assembling a deep surface that synthesizes some of these typologies; and (3) re-construction: translating and transforming the deep surface into an architectural space of surface that engages criticism, history,



*Figure 16.1* West Wing of the Red Centre building at the University of New South Wales Kensington Campus, Sydney. Francis-Jones Morehen Thorp Architects, 1998

and design. Using the building as a site, students were to propose a surface intervention based on the conceptual wall of their choice. This was imposed and impressed upon the existing structure. A given organizational order was infected and contaminated with another, with the aim of introducing a shift in the building's occupation, appearance, and experience, without a complete overhaul of the original building. The project was to be imagined variously as an extension, addition, insertion, and wrapping.

The deep surface was a freestanding, conceptual wall fragment—the students' distinctive response to the subject.<sup>93</sup> The wall was to be conceived as a white card model at a scale of 1:50, measuring 15–20 meters in length, and 5–10 meters in height. The depth of the wall was not specified. The wall was also to be composed of repeatable and non-repeatable units that were evenly patterned or varied along the breadth and the height. The self-supporting wall or deep surface was required to utilize the five surface typologies: representational surface; urban surface; surface as an integrated element; surface as optically and physically transient; and surface as design method. Students were then required to synthesize their responses with the symbolic, urban, spatial, visual, structural, material, and environmental ambitions for the building, and consider the extent to which their approach was reliant on the production of images and meaning, or the generation of a threshold with depth that one could inhabit, from within and without. For instance, the Wall Model I, shown in Figure 16.2, explores the representational, the integrated, and the transient surface typologies. The thickness created by the layering of punctured planes provided the structural substance for the wall to stand on its own. The shifting of the holes

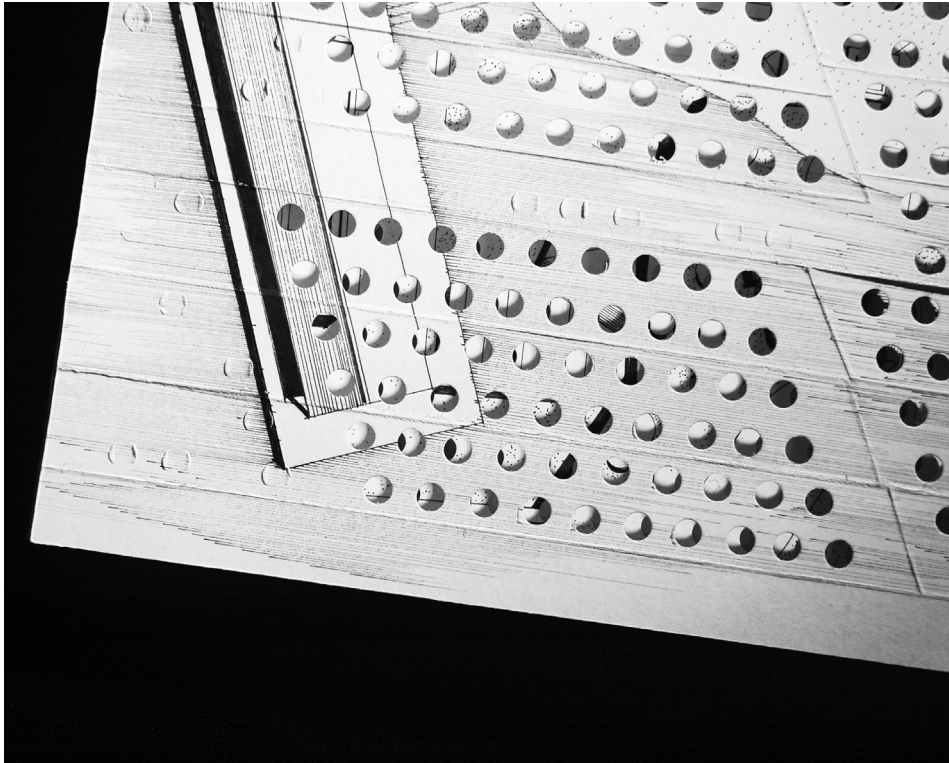


Figure 16.2 Wall Model I

created different degrees of opacity that depended on the positioning of the source of light. The surface was also representational, as the piercings into the wall created an inherent pattern.

The wall was conceived of as a transitional artifact—a conceptual and architectural manifestation. Hence, while it was ‘to scale,’ it was a relative, not absolute scale, such that the scale itself could be rethought through the composition. Such a surface would have the generative code for structure, organization, and space. Students were encouraged to think of organizational patterns and opportunities, and spatial and architectonic strategies embedded in the wall, before undertaking the surface intervention. They were encouraged to excavate the possibilities for enclosure, depth, movement, void, passage, transparency, and so on, which could only be imagined and teased out. In essence, the students were involved in unpacking flatness into multiple spatialities. Students were encouraged to use the procedures of distortion, scaling up or down, intensifying or tapering off, and overlaying, as ways of negotiating the conceptual architectonics to the existing structure. The process involved the reprogramming of existing spaces, introducing new programs and spaces, modifying existing circulation routes, or adding new ones into the existing structure. The specific opportunities for Red Centre West Wing was that the building is a place of work for students and staff; a place of display and celebration of student works; an urban artefact; an interface in the microcosmic public realm of teaching, learning, and socializing; part of the campus fabric, and therefore in a mode of perpetual conversation with other buildings; a marker of identity for the Architecture Faculty; an existing landmark on the UNSW Campus. These opportunities were to inform the design schemes.

The Wall Model II, shown in Figure 16.3, is partially non-orientable (much like a Möbius), in that the top and bottom, and front and back, but not the sides, are transposable. The composition seems unfinished and interminable. It is possible to imagine it extending continuously along its length and to some extent across its depth as a secondary layer. The composition evidences a very particular language of layering L-jointed planes that almost always rotate to a right angle, along a slightly different axis. This is further nuanced by the very distinctive double-layered horizontal tubes that run the depth of the wall, and appear to give the composition an internal rigidity. The composition can also be mapped to reveal a set of lines that could have three-dimensional continuity, creating a self-supporting lattice. The shift and rotation of the planes produce transparency, and their delamination generates translucency. In terms of the surface typologies, one may speculate that Bloor’s wall provides interesting conditions for fabricating edge conditions, and hence the interface to the urban realm. The rigidity of the lattice-like surface demonstrates the integration of structure and surface. This is furthered by the double-sidedness of the surface, which makes the composition capable of prompting interior effects. The wall also engages the transient surface typology, as the dancing pattern of the voids creates a surface whose opacity could constantly change throughout the day.

The project team for Wall Model II developed the wall into a spatial system. The superimposition of the deep surface means that the academic office zone is thoroughly punctured and refigured (Figure 16.4). As an urban surface, the building is completely outward-looking: it protects and encloses without being inert and impermeable. Its surface is not just simply dematerialized through the splintering of the plane; it is now marked by the theatrical glazed boxes that move back and forth. The performance of teaching, learning, and research activities augment the experience of the university. In terms of the integrated surface, the new surface provides a new spatial grammar, which provides “more opportunities” for work spaces. Functions are coded into the grammar of this wall. As the aim of intervention was to enhance the functioning of the building as a place of work and study, the rhythmic alternation of spaces (meeting spaces, offices, and studios) is proposed to create an interactive organization based upon encounter and cooperation, which is more desirable than the segregation of students

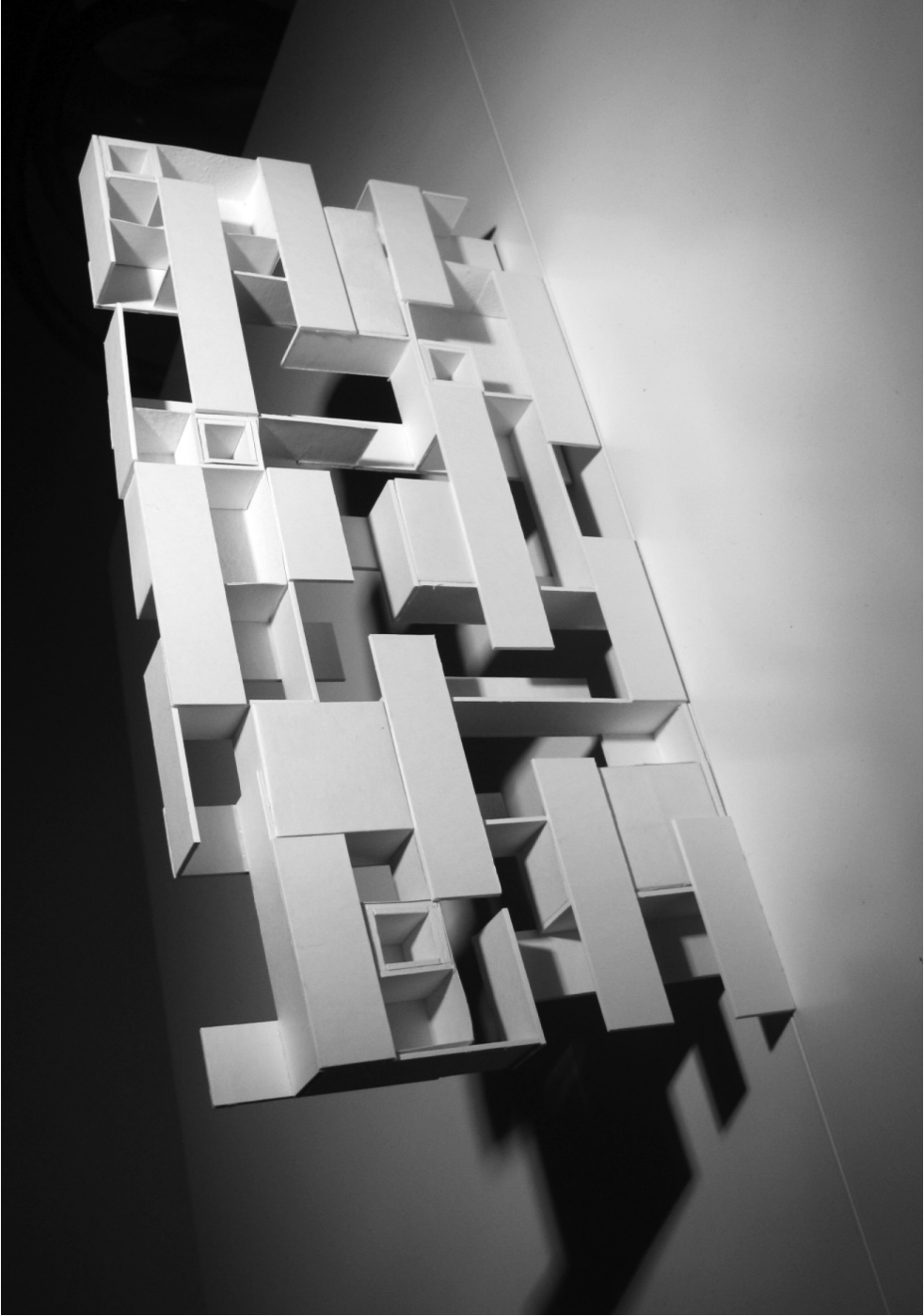


Figure 16.3 Wall Model II



Figure 16.4 Montage of Proposed Surface Intervention, Red Centre, West Wing

and teachers, studios and meeting spaces, and studios and offices (Figure 16.5). The team also argues that the new surface is “echoed in the interior spaces, thereby blurring the idea of distinct thresholds.”<sup>94</sup> While the precise nature of this is hard to grasp, one can see how the dark and linear nature of the inner corridor will be changed forever.

The new threshold engages the transient surface typology, as it relies on the idea of the ‘animate’ surface. The principle of ‘continuous transformation’ transforms what was a static surface into an animate threshold (Figure 16.6). The surface is now characterized entirely by dispersal. It changes as much vertically as it does horizontally. The variation in depth combines with transparency, reflectivity, and the dancing shadows in the deep recesses of the new wall, creating a sense of life that was not present in the original structure. The ‘dematerialization’ of surface is an important part of the transience. A unified bounding line cannot be found. While there is a network of planes, the surface is neither present nor absent. The transience is furthered by the “overlapping elements and varying depths,” as well as the constant “changes of depth on the façade” that are appreciated differently “from the different angles of view.”<sup>95</sup> The surface also fulfills its representational function. The team explains the “new surface actually carries the coded message which is making the organization of the program readable.” The thickened edges of the glazed boxes/tubes “draw focus to objects and activities through framing” the space inside. The team describes the new threshold through the metaphor of music, as a “rhythm . . . where the horizontal and vertical elements are up and down at different

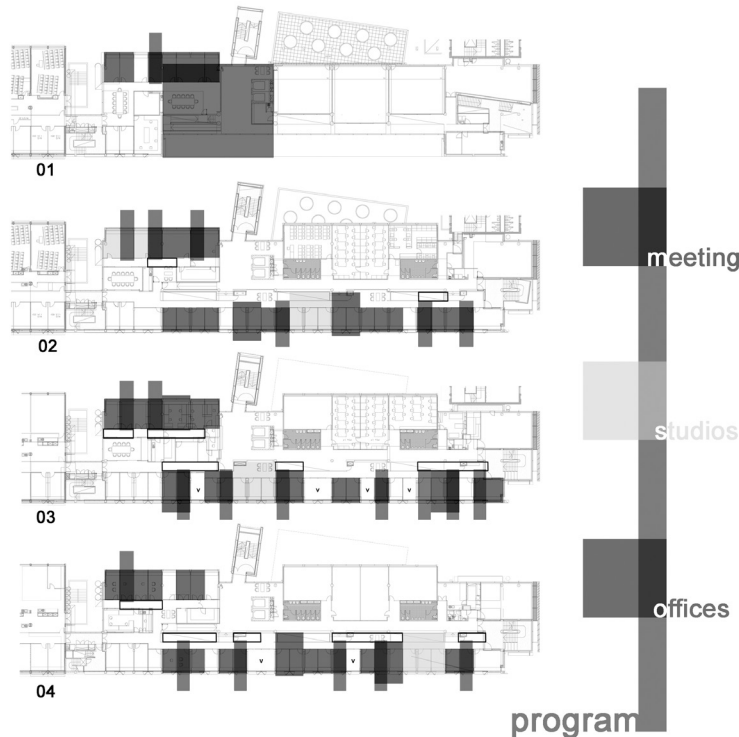


Figure 16.5 Plan of the Reprogrammed Spaces, Red Centre West Wing



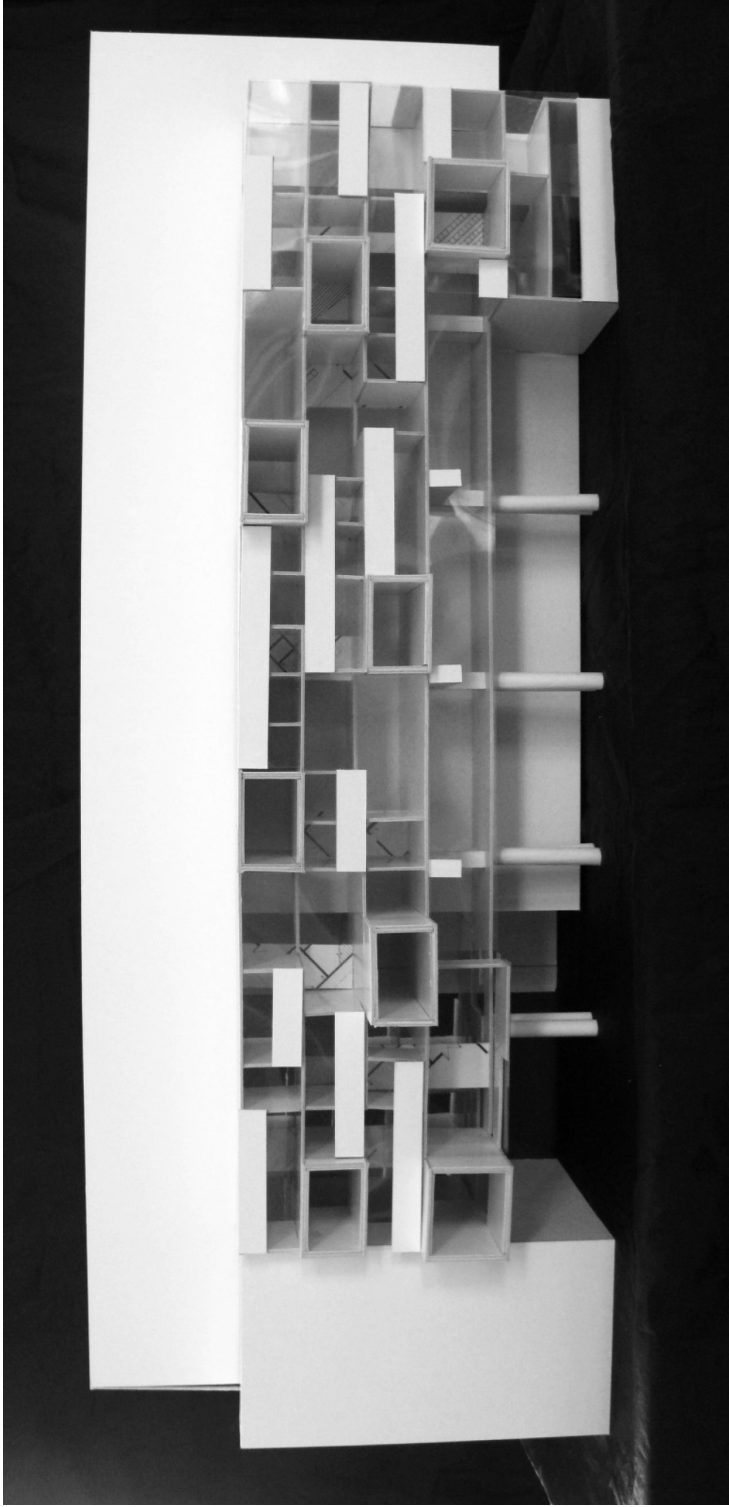


Figure 16.6 Redesigned Threshold, Red Centre, West Wing

depths, different levels, and different directions; together with the projects which are the outstanding high 'notes'."<sup>96</sup>

## Conclusion

This chapter builds on Hays' argument that "[a]rchitectural criticism and critical historiography are activities continuous with architectural design: both criticism and design are forms of knowledge."<sup>97</sup> Hays is not satisfied to leave criticism to the domain of interpretation, which is why he says "[w]e must strive to invest critical discourse with something more than compensatory, appreciative reflections or methods of formal analysis for objects."<sup>98</sup> It is this triangulated inquiry of historiography, criticism, and design, through surface, that this chapter builds on in its three sections. The "Space of Surface" showed that the dichotomous conceptualizations of surface and space, the shallow and the deep, and appearance and truth, no longer hold true. While the recognition of surface as a legitimate field of study is relatively recent, it has gained traction along two interrelated trajectories: theories of knowledge and perception of life and world, and territory of architectural invention informed by advances in technology. The section takes this forward by applying the principle of potentiality and offering five enduring surface typologies in architecture that make it possible for one to think of architecture from outside in.

The "critical unconscious" extended Luce Irigaray and Walter Benjamin's thinking around the theme of the unconscious—defined as a blindspot, a threatening presence, a potentiality in dominant discourses—and charged with the promise of providing an alternative reading or reality. The premise of criticality was located in recognizing the presence of a discursive unconscious that subtly militates against and decenters dominant discourses from within. To this end, this chapter presents surface as architecture's disciplinary unconscious, as its ungraspable depth, and the discursive space that weakens the ontological certainty of the discipline founded exclusively on narrow definitions of space and occupation. The "creative critical" extends the argument of criticality to design theory. It employs critical organizational studies scholarship to argue that organizations not only misunderstand the benefits of generative spatial configurations, but they also may be unable to achieve this until their dependence on the orthographic triad of the plan, section, and elevation is weakened. This can be achieved, as suggested in this chapter, by using surface (typologies) as a design strategy. The experimental studio at UNSW showed that spatial organization and occupation could be reimagined by shifting the creative force from the orthographic gaze of the designer, which is focused on the horizontal plane/plan, to the deep surface of embedded spatiality. The mechanism of architectural knowing is thus shifted. Even though the process has tangible 'outcomes' that are outlined above, in some sense they are never fully knowable and always in a state of becoming, thus embodying a loss of control, which is rather alien to the very act of design.

## Notes

- 1 See Anuradha Chatterjee, *John Ruskin and the Fabric of Architecture* (London: Routledge, 2017); Chatterjee, "Tectonic into Textile: John Ruskin and his Obsession with the Architectural Surface," *Textile: Journal of Cloth and Culture* 7, 1 (2009): 68–97.
- 2 See John Ruskin, *The Works of John Ruskin*, library ed., ed. E.T. Cook and Alexander Wedderburn, vol. 8 (London: George Allen, 1903–1912), 29.
- 3 I discuss this in depth in my book, *John Ruskin and the Fabric of Architecture*, 2–4. The debates on space are also discussed by Lukasz Stanek, "Architecture as Space, Again? Notes on the Spatial Turn." *SpecialeZ* 4 (2012): 48–53; Kathi Holt-Damant, "Architectonic Constructs of Space in the 1920s," in *Celebration:*

- Proceedings of the 22th Annual Conference of the Society of Architectural Historians Australia and New Zealand*, ed. Andrew Leach and Gill Matthewson (New Zealand, Napier: Society of Architectural Historians Australia and New Zealand, 2005), 173–178; Mitchell W. Schwarzer, “The Emergence of Architectural Space: August Schmarsow’s Theory of ‘Raumgestaltung,’” *Assemblage* 15 (1991): 48–61.
- 4 Lukasz Stanek, *Henri Lefebvre on Space: Architecture, Urban Research, and the Production of Theory* (Minneapolis: University of Minnesota Press, 2011), 147.
  - 5 Hendrik Petrus Berlage, *Hendrik Petrus Berlage: Thoughts on Style, 1886–1909*, ed. Iain Boyd Whyte (Santa Monica, CA: Getty Center for the History of Art and the Humanities, 1996), 223.
  - 6 See August Schmarsow, “The Essence of Architectural Creation,” in *Empathy, Form, and Space: Problems in German Aesthetics, 1873–1893*, ed. and trans. Harry Francis Mallgrave and Eleftherios Ikononou (Santa Monica, CA: Getty Centre for the History of Art and the Humanities, 1994), 281–297.
  - 7 See Dana Arnold, *Rethinking Architectural Historiography* (London: Routledge, 2008).
  - 8 Bruno Zevi, *Architecture as Space: How to Look at Architecture*, 2nd edition (New York: Horizon Press, 1957), 17.
  - 9 Giedion, Sigfried, *Space, Time, and Architecture: The Growth of a New Tradition* (Cambridge, MA: Harvard University Press, 1982), liv–lv.
  - 10 [www.surfacestudies.org/about.html](http://www.surfacestudies.org/about.html)
  - 11 Gibson, *The Ecological Approach to Visual Perception* (Hillsdale, NJ: Lawrence Erlbaum Associates, 1979), 23.
  - 12 Joseph Amato’s *Surfaces* (2013) revisits Gibson’s theory, augmenting it by including a multisensorial dimension, and reinforcing that our knowledge of the world is actively constructed through the mechanics of seeing and not filtered through emotional and mnemonic associations. Amato, *Surfaces: A History* (California: University of California Press, 2013). Tim Ingold, however, rejects Gibson’s theory to the extent that it provides a sclerotized conception of the world. In *Being Alive* (2011), Ingold offers an alternative to the Gibsonian landscape, wherein surfaces are constantly created and recreated, as the body moves through the world, thereby instituting the notion of the “sentient” world. *Being Alive: Essays on Movement, Knowledge, and Description* (London; New York: Routledge, 2011), 12.
  - 13 Best and Marcus, “Surface Reading: An Introduction,” *Representations* 108, 1 (Fall 2009), 4.
  - 14 *Ibid.*, 9.
  - 15 This is discussed in depth in Best and Marcus, “Surface Reading,” 9–12.
  - 16 Ellen Lupton (ed.), *Skin: Surface, Substance, and Design* (New York: Princeton Architectural Press, 2007).
  - 17 Giuliana Bruno, *Surface: Matters of Aesthetics, Materiality, and Media* (Chicago/London: University of Chicago Press, 2014).
  - 18 Bruno, *Surface*, 3.
  - 19 Vittoria Di Palma, “Blurs, Blots and Clouds: Architecture and the Dissolution of the Surface,” *AA Files* 54 (2006): 35.
  - 20 Mike Anusas and Tim Ingold, “Designing Environmental Relations: From Opacity to Textility,” *Design Issues* 29, 4 (2013): 66.
  - 21 Mark Wigley, *White Walls, Designer Dresses: The Fashioning of Modern Architecture* (Cambridge, MA: MIT Press, 1995), 2.
  - 22 Wigley, *White Walls*, 4.
  - 23 H el ene Furj an, “Dressing Down: Adolf Loos and the Politics of Ornament,” *Journal of Architecture* 8 (2003): 121; Mark Wigley, *White Walls*, 2–33.
  - 24 David Leatherbarrow and Mohsen Mostafavi, *Surface Architecture* (Cambridge, MA: MIT Press, 2002).
  - 25 Leatherbarrow and Mostafavi, *Surface Architecture*, 20.
  - 26 Gilles Deleuze, *The Logic of Sense* (New York: Columbia University Press, 1990), 104.
  - 27 Deleuze, *The Logic of Sense*, 103.
  - 28 Gilles Deleuze, *The Fold: Leibniz and the Baroque* (London: Athlone, 1993).
  - 29 Alicia Imperiale, “Digital Skins,” in *Skin*, ed. Ellen Lupton (New York: Princeton Architectural Press, 2002), 58.
  - 30 Greg Lynn, *Folds, Bodies & Blobs: Collected Essays* (Brussels: La Lettre vol ee, 2004), 125.
  - 31 Lynn, *Folds, Bodies & Blobs*, 124.
  - 32 Amanda Reeser Lawrence and Ashley Schafer (eds.), *Praxis: Journal of Writing and Building*, special issue, “Expanding Surface,” 9 (2007): 4.
  - 33 Lawrence and Schafer, “Expanding Surface,” 4.
  - 34 Andrew Benjamin, “Surface Effects: Borromini, Semper, Loos,” *Journal of Architectural Education* 11, 1 (2006): 3.

- 35 See Anuradha Chatterjee (ed.), *Surface and Deep Histories: Critiques and Practices in Art, Architecture, and Design* (Newcastle upon Tyne: Cambridge Scholars Publishing, 2014), 152–156.
- 36 Jeff Malpas, “Building Memory,” *Interstices: A Journal of Architecture and Related Arts* 13 (2013): 11; emphasis added.
- 37 Malpas, “Building Memory,” 11.
- 38 Nathaniel Coleman, *Utopias and Architecture* (Abingdon, UK/New York: Routledge, 2005), 236.
- 39 Coleman, *Utopias and Architecture*, 237.
- 40 K. Michael Hays, “Critical Architecture: Between Culture and Form,” *Perspecta* 21 (1984): 15.
- 41 Hays, “Critical Architecture”: 15.
- 42 Gregor Eichinger and Eberhard Tröger, *Touch Me: The Mystery of the Surface: Gregor Eichinger Speaks about the Benutzeroberfläche in Architecture* (Baden, Switzerland: Lars Müller Publishers, 2011), 11.
- 43 Beatriz Colomina, *Privacy and Publicity Modern Architecture as Mass Media* (Cambridge, MA: MIT Press, 1994), 11.
- 44 Eviatar Zerubavel, *Hidden in Plain Sight: The Social Structure of Irrelevance* (Oxford/New York: Oxford University Press, 2015), 10.
- 45 Anthony Elliott, *Contemporary Social Theory: An Introduction* (London/New York: Routledge, 2009), 113–114.
- 46 John Shannon Hendrix, “Psychoanalysis and Identity in Architecture,” Paper presented at Conference on Identity and the Designed Environment, Nottingham Trent University, 2009, retrieved February 11, 2012 from [http://docs.rwu.edu/saahp\\_fp/10](http://docs.rwu.edu/saahp_fp/10), 3.
- 47 Hendrix, “Psychoanalysis and Identity,” 4.
- 48 K. Michael Hays, *Architecture’s Desire Reading the Late Avant-Garde* (Cambridge, MA: MIT Press, 2009), 16.
- 49 Anthony Vidler, *The Architectural Uncanny: Essays in the Modern Unhomely* (Cambridge, MA: MIT Press, 1992), 14.
- 50 Adam D. Weinberg, Mark Wigley, and Anthony Vidler, *The Architectural Unconscious: James Casebere + Glen Seator* (Andover, MA: Addison Gallery of American Art, 2000).
- 51 Elizabeth Grosz, *Sexual Subversions: Three French Feminists* (Sydney: Allen and Unwin, 1989), 102.
- 52 Grosz, *Sexual Subversions*, 103.
- 53 Grosz, *Sexual Subversions*, 103.
- 54 Detlef Mertins, “Walter Benjamin and the Tectonic Unconscious: Using Architecture as an Optical Instrument,” in *The Optic of Walter Benjamin*, vol. 3, *De-, Dis-, Ex-*, ed. Alex Coles (London: Black Dog Publishing, 1999), 207.
- 55 Walter Benjamin, “A Small History of Photography,” in *One-Way Street, and Other Writings*, trans. Edmund Jephcott and Kingsley Shorter (London: NLB, 1979), 243. Also see Rosalind E. Krauss, *The Optical Unconscious* (Cambridge, MA: MIT Press, 1993).
- 56 Benjamin, “A Small History of Photography,” 243.
- 57 Detlef Mertins, “Walter Benjamin and the Tectonic Unconscious: Using Architecture as an Optical Instrument,” in *The Optic of Walter Benjamin* vol. 3, vol. 3, *De-, Dis-, Ex-*, ed. Alex Coles (London: Black Dog Publishing, 1999), 207.
- 58 Benjamin, “Surface Effects,” 30.
- 59 Thomas Markus, “Built Space and Power,” in *Space, Organizations, and Management Theory*, ed. Stewart Clegg and Martin Kornberger (Malmö: Liber/Copenhagen: Copenhagen Business School Press, 2006), 129.
- 60 Markus, “Built Space and Power,” 134.
- 61 Markus, “Built Space and Power,” 130.
- 62 Markus, “Built Space and Power,” 131.
- 63 Markus, “Built Space and Power,” 131.
- 64 Thomas Markus and Deborah Cameron, *The Words Between the Spaces: Buildings and Language* (London/New York: Routledge, 2002), 44–47.
- 65 Martin Kornberger and Stewart Clegg, “The Architecture of Complexity,” *Culture and Organization* 9, 2 (2003): 78.
- 66 Kornberger and Clegg, “The Architecture of Complexity,” 78.
- 67 Kornberger and Clegg, “The Architecture of Complexity,” 78.
- 68 Kornberger and Clegg, “The Architecture of Complexity,” 78, 81.
- 69 Martin Kornberger and Stewart Clegg, “Bringing Space Back in: Organizing the Generative Building,” *Organization Studies* 25, 7 (September 2004): 1105.
- 70 Kornberger and Clegg, “Bringing Space Back In,” 1105, 1006.

- 71 Paul P. Cret, "The École des Beaux-Arts and Architectural Education," *Journal of the American Society of Architectural Historians* 1, 2 (1941): 12.
- 72 Cret, "The École des Beaux-Arts," 12.
- 73 See Antonio Hernandez, "J.N.L. Durand's Architectural Theory: A Study in the History of Rational Building Design," *Perspecta* 12 (1969): 153–160; and David Leatherbarrow, "Limited Sites," in *The Roots of Architectural Invention* (Cambridge, MA: MIT Press, 1993), 15–17.
- 74 Le Corbusier, *Towards a New Architecture* (New York: Dover Publications, 1986) 48.
- 75 Frank Lloyd Wright, "In the Cause of Architecture," *Architectural Record* (1928): 49, retrieved from [www.architecturalrecord.com/articles/11507-in-the-cause-of-architecture-vii-the-meaning-of-materialsconcrete;emphasisadded](http://www.architecturalrecord.com/articles/11507-in-the-cause-of-architecture-vii-the-meaning-of-materialsconcrete;emphasisadded).
- 76 Henry-Russell Hitchcock and Philip Johnson, *The International Style* (New York: Norton, 1932/1966), 97.
- 77 Anton Stuckardt, "Orthogonal Allegory: The Reality of Architectural Plan Drawing," retrieved from <http://designblog.rietveldacademie.nl/wp-content/uploads/2013/07/Anton-Stuckardt-Orthogonal-Allegory.pdf>
- 78 Damjan Jovanovic, "Fictions: A Speculative Account of Design Mediums," in *Drawing Futures: Speculations in Contemporary Drawing for Art and Architecture*, ed. Laura Allen and Luke Caspar Pearson (London: UCL Press, 2016), 30.
- 79 Jovanovic, "Fictions," 31.
- 80 C.J. Lim, "London Short Stories: Drawing Narratives," in Neil Spiller (ed.), "Drawing Architecture," special issue of *Architectural Design* 225 (2013): 104.
- 81 Nic Clear, "Drawing Time," in Spiller (ed.), "Drawing Architecture," 74.
- 82 Clear, "Drawing Time," in Spiller (ed.), "Drawing Architecture," 74.
- 83 Perry Kulper, "A World Below," in Spiller (ed.), "Drawing Architecture," 59.
- 84 Karl Wallick, "Generative Processes: Thick Drawing," *International Journal of Art and Design Education* 31, 1 (2012), 1.
- 85 Tom Porter and John Neale, *Architectural Supermodels: Physical Design Simulation* (Oxford/Woburn, MA: Architectural Press, 2000), 28.
- 86 Nick Dunn, *The Ecology of the Architectural Model* (Oxford: Peter Lang, 2007), 220.
- 87 Francesca Vocialta, "Model Architecture," master's thesis, École Polytechnique Fédérale de Lausanne, 2015, 8.
- 88 See also Kazys Varnelis, "Is There Research in the Studio?" *Journal of Architectural Education* 61, 1, *Architectural Design as Research, Scholarship, and Inquiry* (September 2007): 11–14; and Helene Furján, "Design/Research: Notes on a Manifesto," *Journal of Architectural Education* 61, 1, *Architectural Design as Research, Scholarship, and Inquiry* (September 2007): 62–68.
- 89 David Salomon, "Experimental Cultures: On the 'End' of the Design Thesis and the Rise of the Research Studio," *Journal of Architectural Education*, 65, 1 (2011): 34.
- 90 Salomon, "Experimental Cultures," 34.
- 91 Salomon, "Experimental Cultures," 39.
- 92 Salomon, "Experimental Cultures," 41
- 93 This architectural design studio exercise is indebted to the foundational First Year Architecture and Interior Architecture Studio at the University of South Australia, led by Rachel Hurst and Jane Lawrence, which had students explore the idea of a freestanding wall having its own porosity, tectonics, structure, material, and ornament. Students translated specific memories and experiences into rhythms, patterns, and densities expressed, as a series of freestanding walls. These walls were subsequently developed into enclosed and functional spaces that were connected and synthesized into a hybrid whole.
- 94 Project Team for Wall Model II, 2011.
- 95 Project Team for Wall Model II, 2011.
- 96 Project Team for Wall Model II, 2011.
- 97 Hays, "Critical Architecture," 27.
- 98 Hays, "Critical Architecture," 27.