Occupations of Interior Surface

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Abstract: Without doubt, issues of surface have become central to contemporary (and quite possibly, mainstream) architecture and design. In the pages to follow, I aim to posit a notion of surface specific to interior occupation. With concern for inhabitation, décor, material innovation and atmosphere, interior research is ripe to augment, and perhaps even test, contemporary discussion around surface that places emphasis on structural and technological approaches, effectively reinforcing tectonic over spatial issues. The notion put forward in this paper builds upon a range of sources including works by Eliel and Loja Saarinen, Boyd Webb and Ann Hamilton. Contemplation on these works aids to develop a liberal, and even liberating, interdisciplinary inquiry towards imagining what might constitute an interior "of" surface.

Keywords: interior, surface, material, inhabitation, textile, political, spatial

Of knots

In the past two decades I have on occasion ruminated upon two ryijy rugs at Hvitträsk House outside of Helsinki, Finland, a dwelling most notably occupied by the Saarinens, Eliel and Loja, in the early and mid 1900s. This paper will build upon the resonance that these two rugs produce towards posing a notion of interior surface through the deployment of a strategy Andrew Benjamin calls "decontextualization". In his essay on surface effects he crafts an argument such that theory is understood as an engagement with design practice, whereby practice is broadly interpreted and inclusive of many ever-changing means of representation. Benjamin articulates theory's speculative role in relation to history:

"What occasions the introduction of theory is the presence of a space opened by a relationship whose formal presence cannot be determined in advance" and necessitates "an iterative reworking of the elements of history" ¹

Benjamin asserts theory's core concern as the destruction of the field of meaning in order that another potential can be realized. I am employing this strategy as a means to incite destruction in its generative mode as well as drawing on creative license associated with open interpretation of a work, a practice common in fine art.

So what observations can be construed from the dalliance of these seemingly innocuous decorative art objects? How do they serve as emblematic sites for launching a discourse on interior surface?

Of fibre

Hvitträsk House was fitted with ryijy rugs as a matter of invoking a nationalist (Finnish) identity and infusing an Arts and Crafts ethos central to the house's architects/occupants Gesellius, Lindgren, and Saarinen.² Despite being credited to Eliel Saarinen, there is evidence to suggest that his wife Loja, an accomplished textile artist in her own right, was involved with their design execution in association with the Friends of Finnish Handicraft.³ Hvitträsk House is an "integral work of art: [it takes] control of the aesthetic elements in our environment so that all internal and external details are treated as one entity, from the trees of the forest to the most unobtrusive interior ornaments".⁴ Such sentiment is born in the rugs' patterns which elicit a pivotal political and cultural moment in Finland's battle for independence.



Figure 1: Hvitträsk House living room,1902, architects, Gesellius, Lindgren, Saarinen. Photo Rauno Träskelin

As a traditional Scandinavian textile, the ryijy (pronounced ru-i-you), or rya rug, is as much a blanket as it is a floor covering or a wall hanging tapestry.⁵ As a home furnishing, the rug exceeds the programmatic boundaries of wall, couch and floor as it forms a single continuous surface across these domains. The rugs are made using a unique knotting technique where long individual wool strands are woven to encase and flesh out a flexible structure such that the space between the warp and weft is filled up. ⁶ This process strengthens the rug overall, increases its weight and has the tendency to reduce pliability in the short direction. Importantly, this rug has two sides; one with long pile and one with a short decorative pile. ⁷ These factors accentuate the rug's draping attributes making it less supple than a curtain, more agile than a typical floor covering. The ryjjy rug in Hvitträsk House's main living room, the largest and most famous of the two rugs, supplements a room whose internal surface is merely the residue of the building's log structure. In this case, the rug reiterates a custom of using woven textiles to distinguish external from internal domains spatially yet relate them aesthetically. (Figure 1) Appearing to cascade from wall to floor, it is one of the only soft surfaces in this dark voluminous medieval-like space. Upstairs in a small nook, another ryijy rug appears to creep upwards to claim the sitting lounge as floor. (Figure 2) A watercolour of this rug by Eliel Saarinen reveals how the three dimensional volume of the corner couch is resolved by the rug's complicated tailored figure. (Figure 3) Dictated by handicraft, the rugs' curvature is the very detail that lures one to ponder what it is like to sit on these hybrid furnishings to affect an empathetic discussion between body posture and tufted surface. According to ryijy rug lore, one is meant to crawl under the heavy tapestry-blanket where one's body would interface directly with inward facing coarse woollen fibres knotted in a narrative of symbolic pattern and figures. Ah, what haptic poetry to imagine body, material and representation mingling as inter-surfaces!



Figure 2: Couch situation, Hvitträsk House, 1902, architects, Gesellius, Lindgren, Saarinen. Photo Rauno Träskelin



Figure 3: Watercolour of rug, Hvitträsk House living room,1902, architects, Gesellius, Lindgren, Saarinen. Photo Rauno Träskelin

Of body

The image of occupying in, under or on this rug surface is not simply a cosy one; it is a virtual occupation of interior surface, an inspiration seeded by Gins and Arakawa's philosophical and political call for an architecture that risks understanding our reason for being in the world by challenging the mortality of our own destiny. Theirs is a plea to recast "Why?" with "What if and how?" which figures the body, our body, my body as the resistant agent and builder/maker in a contingent world. Gins and Arakawa's book *An Architectural Body*, a textual hypothesis, describes something that feels like a surface behaving as a building, something called a landing-site:

ANGELA: How do you expect me to get into something this totally flat to the ground? GINS: You have to go under it. Pick it up and insert yourself into it. ROBERT: I can't get a hold of it. There's nothing to hold onto. ANGELA: Wow, it's so light! What material is this? GINS: A new material developed by NASA. ANGELA: Is it fireproof? ARAKAWA: Definitely, and waterproof. It's flexible, durable, and, to our delight, it happens to provide great insulation as well. ANGELA: That's unbelievable. GINS: Take that section of material you are holding in your left hand and push it up a little higher. Bring it up to at least waist level. ANGELA: Oh, here's something that looks like a handle. If I hold onto it to slide the material ... ARAKAWA: You need to slide it to the left at the same time you push it upwards. ANGELA: Yes, it opened. This is scary. It keeps changing ... volumes open with my every motion ... With each push...it's changing right in front of my eyes, with each push ... pushing open ... opening. How I spread my arms to push it open ... It takes shape from how ... If I push it to one side ... ⁸

Their book provides a convincing case for critical consciousness around building as an act invested with an ethical charge; to reach for what appears impossible, or in other words, to defy the assumption of death through means of reimagining life. Declaring their architecture as "tentative constructings toward holding in place".9 Gins and Arakawa's text brings issues of surface into a political arena linked to practice, ethics, and sustainability. The surface of architecture, in their case, is one of meta-thought and material potential grounded within an experiential framework. In my reading of their work, body is an interior surface-informing procedural force, a force that they call ambient kinaesthesia. 10 Because of sheer numbers of bodies, the world is formed as "a concatenation of partial procedures or procedural-like occurrences, diffuse or defused procedures, incomplete or bedevilling ones." 11 This is a call to build - not simply as a design or construction service - but as an affirmation of collective effort and consciousness motivated by a provocation to wonder. To wonder under the ryijy rug: I would be roused to consider the many hours and female bodies that tied those many knots, how their hands, backs and eyes might have ached with strain, how and if they were paid. I would lay in observation of how laboured my breathing became with the weight of the textile and once stable, how it induced a dark mottled space humid with exhales and tainted by all those many sheep that gave up their fleece. I would curse as my partner's movement realigned the coarse fibres or my daughter's entry contaminated the space with a cold draught. I would consider the rug's worth in this new downturned economy, recalling the rug's value as a tax payment or wedding present in the eighteenth century. 12 Might this rug offer any practical benefit to current urban street dwellers? But, as I am not seeking to find a landing site just yet... how does it fly?

Of matter



Figure 4: CLENCHED © Boyd Webb 1984.

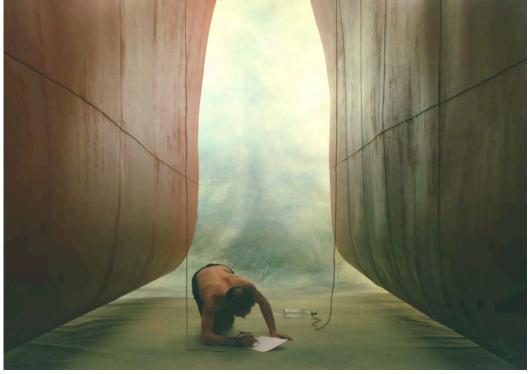


Figure 5: STRATEGIST © Boyd Webb 1984

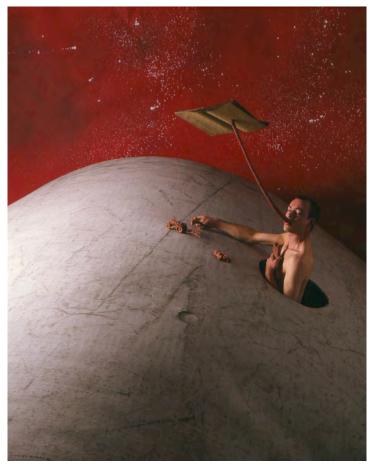


Figure 6: KIBBUTZ © Boyd Webb 1985

Just as I read surfaces as sites of political investment in Gins and Arakawa's words, I interpret them spatially posited in the works of Boyd Webb, internationally exhibited photographer. The politics of his work also lean towards sustainability but with a wry sense of humour and sharp criticism of local and global economies, particularly, consumer capitalism and what lies in its wake. (Figure 4) I am lured to his photographs as the residue of staged scenes, interior sets, which propagate several dimensions of meaning as a result of manipulating lighting and material, most specifically, materials found in everyday interiors such as polyethylene plastic film, tufted carpet, linoleum, foam underlay and resin-coated flooring paper. (Figure 5) I am equally bemused by how in the staging of these materials he makes them live: he overrides their banal and inert qualities with simple techniques of hanging, draping, puncturing, bundling and folding. (Figure 4) With no disrespect to his work, these scenes are the exquisite elaboration of props empowered by simple decontextualizing techniques. As seen in Webb's photograph entitled "Lung" (1985), the basic technology of pulleys, guide wires, box-cutters and multiple lighting gels measure the difference between a common domestic scene and that of a political consciousness on human occupation and ecology. (Figure 5) Not subscribing to illusion, Webb's work instils a pregnant realism that allows us to see the membranes of inside and outside as tactile, spacious and transgressive without abolishing their distinctive functions. In and out, under and above, are reordered as this face and another face, a constant signal of the potential for another surface to become unobscured or surface's depth to be mined. Such hidden depth recalls the superficiality attributed to surface and surface's expression of the inner, which as Mark C. Taylor reminds us, is a condition of skin at a local body and global culture scale.

Since the organism as a whole is formed by a complex layer of dermal layers, the body is, in effect, nothing but a strata of skin in which interiority and exteriority are thoroughly convoluted...As such the skin is forever doubled and hence unavoidably duplicitous. Hide hides hide, which hides nothing...nothing but other hides.¹³



Figure 7: LUNG © Boyd Webb 1983.

If, as in Webb's image "Lung" (1983) where depth is plainly insinuated by the faux-ness of swirling pale blue flooring material, surface yields appearances in a successive process of unhiding, then depth and surface are one and the same – all is revealed, one surface after another-- then surface is a process of transitioning from one interior to the next. (Figure 6)

Of depth

Conceptualizing surface as having infinite depth or even non-material status is an activity that would attract the attention of Avrum Stroll, a philosopher questioning "What are Surfaces?" Two major models of surface with accompanying variations emerge from Stroll's inquiry. Each model is probed via the perception of everyday objects and the "geometry of ordinary speech". 15 Physical and abstract readings of concepts such as "margin", "boundary", "limit" and "edge" assist to formulate a topological system distinct from mathematics and physics. For example, Stroll's model "The Leonardo Conception" offers surface as a boundary without substance, a common join of two media. Indeed, his example of the limit of air and water exposes assumptions about air's "nothingness" and a boundary's depthless and abstract identity. In this model, surface "belongs to neither of the two contiguous media it separates", which negates the possibility of an intermediary of "between"; surface is a non-material entity, an abstract interface. 16 A variant of the Leonardo model adopts a higher degree of abstraction whereby the interface is possessed by the dominant of the two media. This model leaves surfaces susceptible to the same power struggles rampant in boundary line disputes. If posed in the context of the ryijy rug: Who owns the rug? When both sides are front sides, i.e. useable, which one possesses the surface? Does it belong to the wall, the couch or the floor? What bio-security hazard does it bring as it flies from one continent to the next?

Stroll's "PS" model (surfaces as a physical part of physical entities) offers additional insight to

surface occupation. Within the perspective of the ordinary, surfaces maintain a sensory stimulus that can be described in such ways as "rough, smooth, wet, dry, slippery, sticky, chipped, pitted or damaged; and one can speak about sanding, polishing, painting, wiping and waxing such surfaces". ¹⁷ In this model, to have surface is to be something made and be made of material stuff. Surface belongs to material and its manipulation for spatial effect is at the core of design activity. I borrow and amend Stroll's PS model to suggest that surface includes a successively remaking (and unmaking) as invocation of the active form of the verb "to do" or "to be". In this way, I am underscoring Gins and Arakawa's sense of procedure and highlighting an exchange between the body and that, which is made in the process of building.

Of relation



Figure 8: tropos, Ann Hamilton (1993). Photo credit to Thibault Jeanson courtesy Ann Hamilton Studio.

Sometimes that which is made in the process of building is greater than the building itself. Artist Ann Hamilton's piece 'tropos' offers additional dimensions to this proposition of interior surface, in particular, an expansion of the role of labour and collective consciousness latently embodied in material and its means of affecting spatial experience. Between 7 October 1993 and 19 June 1994 the main gallery of DIA Center for the Arts, New York, was host to a carpet of horse hair monitored by a single sitter diligently focused on the task of burning a book's text in the same process as its reading. (Figure 7) Needing the institutional authority of the gallery and the density of its painted white masonry walls to bound the scene as a situation withdrawn but actively linked to social space, Hamilton forged economies of exchange between labour, material and sentience in the form of a sanctuary or preserve.¹⁸ (Figure 8) The power of this scene to unify interior surfaces relied on latent calibrations amongst the staunch and rational inside of a warehouse gallery.

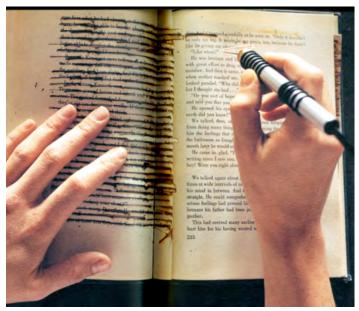


Figure 9: tropos, Ann Hamilton (1993). Photo credit to Thibault Jeanson courtesy Ann Hamilton Studio.

The sinister but erotic swirls of large quantities of animal hair and the silent aloofness of a woman absorbed in peculiar work served as actors in a spatial network. Images of this installation exceed simple representation to elicit corporeal response. (Figure 9) The detritus of beast mingling with charred words inhabit a zone of acridity in the back regions of my mouth. Like a beacon, like a docent, like a guardian angel, she sits there uninterested in my presence but confirming it even as she destroys a book. I cannot see the name of the book, so this may not be such a sacrifice. We are in this sea of stuff together, she on her chair and me stepping tentatively hoping not to trip or fall through. If hair is above, what lies below but a fetid gelatinous soup of bones, blood and sinew? Its surface draws me into eddies of a repulsive elixir, drawn between the implied slaughter and the security and warmth of deep fur. She is still there, not watching me struggle to find my feet. In the short time since entering this space, the sun's brilliance has vacated the whitewashed brick wall.



Figure 10: tropos, Ann Hamilton (1993). Photo credit to Thibault Jeanson courtesy Ann Hamilton Studio.

The wall and the floor-covering now whisper through surface appearance of the many gestures invested to secure their different formal structures at the same time the book relinquishes its own. If I stayed through the night, would she proceed to comb this flooring and rewrite the book as acts of reparation? (Figure 10) Complicit with Webb and contrary to Stroll, Hamilton's installation "tropos" assists in reconsidering the shallowness attributed to superficiality where the surface, readily apparent through its own material opacity, i.e. the horse hair floor or the book-burning protagonist, is imbued with the power to secrete other surfaces through selective modes of phenomenal transparency. This is only made possible by virtue of the installation's spatial extension, duration and occupation.



Figure 11: tropos, Ann Hamilton (1993). Photo credit to Thibault Jeanson courtesy Ann Hamilton Studio.

De space of

"Of" is a very big word. For such few letters, "of" serves the huge task of designating place and time, motion, direction and distance. Despite being credited as a weak and derivative preposition, it has expansive powers across spatial dimensions. (Such weakness is audibly understood when compared to its half-sister, the word "off", a word with explicative force.)

From its original sense, *of* was naturally used in the expression of the notions of removal, separation, privation, derivation, origin or source, starting-point, spring of action, cause, agent, instrument, material, and other senses, which involve the notion of 'taking, coming, arising, or resulting from' (OED, 2009).

Employing the word "of" is like applying grease to a rusty hinge; variable forms of occupation and possession are activated as an accessory to a door. This is not simply a manner of playing with words or nor is it a post-modern effort to couch an argument in language. In this paper I have employed the word "of" for its genitive and transitive attributes, but most significantly, "of" is being used to unhide another surface of surface.

Readers familiar with contemporary discourse and practice around surface will recognize my lack of reference to its dominant focus on digital technologies and processes, in particular parametric design, modelling and digital fabrication. Of those actively developing this contemporary field of architectural design thinking, practice and production, Andrew Benjamin (2006), Mark Burry (2006), Bernard Cache (1995), Alecia Imperiale (2000), George Liaropolous-Legendre (2003) and Mark Taylor (2006) are significant contributors of critical and reflective theory specific to surface. My ambition to consider surface in relation to interior occupation is fuelled by the wealth of these works rather than a criticism of them. These works make possible the inclusion of another approach to surface that is neither oppositional nor confrontational, just another dermal layer detected deep in the ectoderm, as Mark C. Taylor might say.

The first observation that piques my interest in putting forth a notion of interior surface is a general tendency of the dominant discourse to cast surface in the exclusive light of contemporary computational technologies. "To ask the question - what is a surface in architecture? - is to ask as much about the practical implications of how surfaces are used and materials are deployed to create them, as it is to ask about the generation of surfaces on computer screens". 19 Mark Burry credits computationally assisted design as the means to working outside of an orthodoxy, towards the creation of perplications which "are neither surface or substance yet appear to be both at once, and represent what we can do today that could not be done tomorrow".20 Granted, the works of Saarinen, Webb and Hamilton discussed above have not been guided and fabricated by computer aided design ideation and production. Yet their contribution towards developing a sensibility of surface has effect beyond the consequence of the process of their own creation.²¹ What they do affect in terms of interior surface is an investment into labour practices, collective economies and sustaining philosophy as critical motives for imagining and developing spatial occupation. That they do it outside of contemporary computational technologies only suggests there may be other means to probe surface in relation to building. That issues of materiality and performativity are common amongst all of these approaches to surface is notable.

Second, contemporary architectural projects tend to realize surface's abstraction in the form of overtly exterior and structural responses. Though the impetus to engage industrial building economies is predictably understood, and it might explain the vacuity of works and discourse specific to interiors, I am hearted to reconsider Benjamin's reasoning "that surface should be understood neither as a merely structural, nor as merely decorative aspects of building. Rather, the creation of surfaces (interior walls or facades and so on) organizes a programme which allows for a reading of the space of architecture". Benjamin's allusion to Semper is both fruitful and limiting in light of the many ways that Semper's texts have been translated and interpreted and Semper's own commitment to genitive theory as a form of "interpretive taxonomy". As Adrian Forty points out, Semper's texts are pivotal, perhaps even to blame, in establishing space as a condition of enclosure, and as a result, prompting a didactic relationship between inside and outside that resides in a direct apprehension of physical form over a perceptual or psychological saturation of images. And while reading my copy of Semper's Four Elements of Architecture, I came upon Rykwert's clarification of Semper's own terminology:

The use of the term "elements" (Elemente) in this regard is misleading. As it is clear from his later theory, Semper conceived of them as not material elements or forms, but as "motives" or "ideas," as technical operations based in the applied arts.²⁵

What an impact this change of word stimulates! As elements, the objectified signs of hearth,

mound, roof and wall are transformed into motives for building industriously. Working with fire, earth, timber and fibre stimulate temporal spaces of action instead of mere industrial building products. Such a small shift in emphasis makes room for reconsidering all that has been written about surface via Semper and shines light on the act of making enclosure as a performance of building with intent and collective agency. The active tense of these verbs is what directs it as spatial endeavour.

In the midst of this paper I have deployed a strategy of decontextualization in order to exorcise concepts and language that hamper crossing borders of inside and outside, body and politics, and material subject and material object. The works of Eliel and Loja Saarinen, Boyd Webb and Ann Hamilton have been hosts to exercising a form of un-hiding which diminish a homogeneous or singular nature of surface and capitalize on surface's virtual, even political depth. My intent has been to supplement a dominant technologically-driven contemporary architectural discourse on surface with a discussion of interior surface as a non-didactic and relational confluence of physical attributes and perceptual apprehension. This sensibility of interior surface elicits occupation as an industrious action, a motive driven by relational materiality. It reposes the question "How to make a ryijy rug fly?" as "What effects would a flying ryijy rug have on occupation?"

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Endnotes

¹ Benjamin, A. (2006) 'Surface effects: Borromini, Semper, Loos'. Journal of Architecture 2.

² Gutheim, F. (1988) 'Hvitträsk: exploring the roots of Saarinen,' 59.

³ Amberg, Anna-Lisa et al (ed team) and Pallasmaa, Juhani (ed), *Hvitträsk : koti taideteoksena = Hvitträsk : the home as a work of art.* 87

⁴ Amberg, et al, 1987, 32

⁵ Jackson, Jackson, L. (2006) 'Finish carpets and textiles' 36 and Kangas, Gene (2007) Maine Antique Digest.

⁶ Sirelius U. T. and Maeson, A. (1926) The Ryijy-rugs of Finland: A Historical Study.

⁷ Kangas, Gene (2007). Maine Antique Digest

⁸ Gins, M., and Arakawa (2002) Architectural Body 25).

⁹ Gins and Arakawa, (2002), 21

¹⁰ Gins and Arakawa. (2002), 69)

¹¹ Gins and Arakawa, (2002), 52

¹² Kangas, (2007)

¹³ Taylor, M. C. (1997) Hiding 12

¹⁴ Stroll, A. (1988) Surfaces.

¹⁵ Stroll, (1988), 4.

¹⁶ Stroll, (1988), 45.

¹⁷ Stroll. (1988), 51.

¹⁸ Cooke, L. (1994). "The Viewer, the Sitter, and the Site: A Splintered Syntax", 61

¹⁹ Benjamin, (2006), 3

²⁰ Burry, M.C., (2006). "Between Substance and Surface", 19

²¹ Benjamin, (2006), 3

Bibliography

(1999) 'Ryijy rugs'. Form Function Finland, 73, p 61.

Imperiale, A. (2000) New Flatness: Surface Tension in Digital Architecture. Basel, Boston and Berlin: Birkhauser.

Amberg, Anna-Lisa (1987) 'Hvitträsk: koti taideteoksena = Hvitträsk: the home as a work of art,' in Amberg, Anna-Lisa et al (ed team) and Pallasmaa, Juhani (ed), Hvitträsk: koti taideteoksena = Hvitträsk: the home as a work of art, Helsinki: Suomen Rakennustaiteen Museo/ Museum of Finnish Architecture, pp 79-114.

Benjamin, A. (2006) 'Surface effects: Borromini, Semper, Loos'. Journal or Architecture. 11(1), 1-35.

Burry, M.C., (2006). "Between Substance and Surface" in Mark Taylor (ed), AD Surface Consciousness, London: Wiley Wiley-Academy, pp 9-19.

Cache, B. (1995). Earth Moves: the Furnishing of Territories. Cambridge, Massachusetts: MIT Press.

Cook, L. (1994), "The Viewer, the Sitter, and the Site: A Splintered Syntax" in Cook, L. and Kelly. K. (eds) Ann Hamilton, tropos. New York: Dia Art Foundation.

Forty, A. (2000) Words and Buildings: A Vocabulary of Modern Architecture, New York: Thames and Hudson.

Gins, M., and Arakawa (2002) Architectural Body. Tuscaloosa and London: The University of Alabama Press.

Gutheim, F. (1988) 'Hvitträsk: exploring the roots of Saarinen'. Inland Architect, 32 (1), 54-60. Hausen, Marika (1987) 'Hvitträsk: koti taideteoksena = Hvitträsk: the home as a work of art,' in Amberg, Anna-Lisa et al (ed team) and Pallasmaa, Juhani (ed), Hvitträsk: koti taideteoksena = Hvitträsk: the home as a work of art, Helsinki: Suomen Rakennustaiteen Museo/ Museum of Finnish Architecture, pp 10-69.

Jackson, L. (2006) 'Finish carpets and textiles'. Modern Carpets + Textiles, Spring, 36-41. Kangas, Gene (2007). Maine Antique Digest.

http://maineantiquedigest.com/articles archive/articles/may07/finnrug0507.htm (1 March 2009) Liaropoulos-legendre, G. (2003) ijp: the book of surfaces. London: AA Publications.

Oxford English Dictionary. http://www.oed.com/24 Feb 2009 11:06 am

Rykwert, J. (1993). "Gottfried Semper: Architect and Historian" in The Four Elements of Architecture and Other Writings (H. F. M. a. W. Herrmann, Trans.). New York: Cambridge University Press.

Stroll, A. (1988) Surfaces. University of Minnesota, Minneapolis.

Surelius, U. T. and Maeson, A. (1926) The Ryijy-rugs of Finland: A Historical Study. Helsinki. Taylor, M. (2003). 'Surface-Talk' in Mark Taylor (ed), AD Surface Consciousness, London: Wiley Wiley-Academy, pp 30-35.

Taylor, M. C. (1997) Hiding. London: The University of Chicago Press.

²² Benjamin, A (2006), 1

²³ Rvkwert, J. (1993). "Gottfried Semper: Architect and Historian", 32

²⁴ Forty. A. (2000) Words and Buildings: A Vocabulary of Modern Architecture, 256-275

²⁵ Rykwert, (1993), 24