THE MAGIC OF THE REAL:
material and tactility in the work of Peter Zumthor

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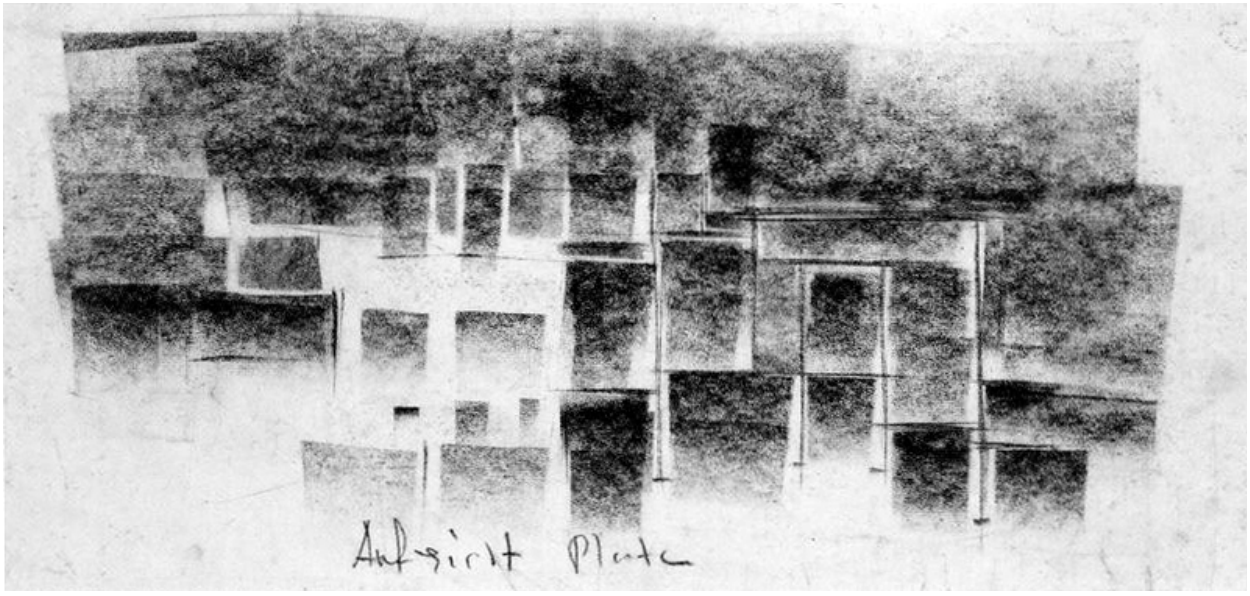

Fig.1. Zumthor sketch for Thermal Baths

To see is to forget the name of the things one sees.

–Paul Valéry

Wooden floors like light membranes, heavy stone masses, soft textiles, polished granite, pliable leather, raw steel, polished mahogany, crystalline glass, soft asphalt warmed by the sun... the architect's materials, our materials. We know them all. And yet we do not know them. In order to design, to invent architecture, we must learn to handle them with awareness.

–Peter Zumthor

This essay poses a counterargument to the common assertion that digital fabrication and rapid prototyping have completely transformed the architect's relationship to material at each level of conception, design and realization. While some contemporary architects generate new material investigations through digital means, others engage in unprecedented explorations working with tactile physical methods such as plaster casting, lead pours, charcoal sketches and collage. These allegedly low-tech investigations share a belief that literal touch is essential not only to the experience of material in architecture, but also to its conception and making.

Touch in making may seem inevitable, but the architectural design process has become more distanced from tactility as the physical world is dematerialized by digital media and appearance is valued over existence. Today many buildings are designed with an uncritical use of digital processes that privilege the eye, the 2-D image and the immaterial. Although physical study models have nearly disappeared in most professional offices and many university studios, an adequate means of spatial and tactile exploration has often not replaced them. This is not an argument against the digital and its possibilities, but simply an observation that fewer architects touch materials during the design process. If the wood, plaster, paper and metals that have been intertwined with form and space to study the physical qualities of architecture are vanishing, how does the designer learn about the nature of materials and their assemblies? What is heavy or light, pliable or stiff, smooth or rough, and dense or luminous? Though models produced by 3-D printers represent form, they commonly deny materiality in the homogenous modeling medium. Particularly problematic is the removal of serendipity from the modeling process. In many architecture schools, fabrication seminars and hands-on design build studios are an increasingly popular alternative to studios almost entirely focused on digital modes of conception and production. Various forms of technology have impacted the contemporary experience of space, but the power and pleasure of touch is clearly not waning. This changing condition in architecture is not unique, however, for we all live in an increasingly visual and image-conscious culture.

Discussing the reliance on images in architecture, Andrew Saint notes: "the long-term challenge for the architectural profession…is to ride this exciting, undisciplined, licentious, and dangerous beast, to control this irresponsible lust for image that pervades our culture."[1] Because design is disseminated and legitimated in two-dimensional print or digital media, too many architects are more concerned with creating work that will appear well in magazines than support human occupation or sensory engagement. The growing separation of architects from the building process has reduced their understanding of material properties and assembly processes, as well as removing them from the thing itself.[2] In *The Book of Touch,* Constance Classen notes that within this image-saturated society there is little opportunity to actually feel something. "The endless appeal to the sense of touch that one finds in contemporary visual imagery, unaccompanied as it is by actual tactile gratification, may have helped make touch the hungriest sense of post-modernity."[3] This deficiency and desire for tactility is evident in numerous books about the senses that have appeared recently in the popular and academic press. For instance, Diane Ackerman's book *A Natural History of the Senses*[4] was a national bestseller and historian Robert Jütte proclaimed that "the five senses are back in fashion," and writes about the proliferation of museum exhibitions, films, books, spas and advertising campaigns that focus on the senses.[5] Amidst the images, a smaller group of architects remain attentive to tactility and processes of making. Peter Zumthor's work, a fine example of this approach, will be examined through four ideas about touch in architecture.

Fig.2. Thermal Baths

The work of Peter Zumthor

Touch is essential in the process of making and inhabiting architecture. This holds true for all the different stages in the life of a building: while a project is designed in the studio, while it is constructed on site, and finally while people dwell within. Three recent projects by Peter Zumthor–analyzed through drawings, models, text and built form–clearly reveal that touch is generative of an open process of making that establishes reciprocity between intention and discovery. Each building engages one primary material to great effect: concrete in the Bruder Klaus Chapel, stone in the Thermal Baths, and wood in the Saint Benedict Chapel. Experiencing and responding to the sensory qualities of a place is also important to Zumthor. The projects under consideration are situated in three very different places. The Bruder Klaus Chapel is a singular concrete figure in a flat farming field in Wachendorf, Germany. Located in the spa town of Vals, Switzerland, the Thermal Baths are made from local gneiss and literally embedded into the mountain. The wooden Saint Benedict Chapel perches on the mountainside in Sumvitg, Switzerland. Completed over twenty years, the buildings display his focus on materials and their skillful synthesis with form, space and light.

Zumthor also writes beautifully about material. "People interact with objects. As an architect that is what I deal with all the time. Actually, it's what I'd call my passion. The real has its own magic. Of course, I know the magic that lies in thought. The passion of a beautiful thought. But what I'm talking about here is something I often find even more incredible: the magic of things, the magic of the real world." Just as we have done throughout history, today's architects must consider the literal touch of future inhabitants, as well as the multi-sensory experience of a place in time. As Peter Zumthor's built works so eloquently demonstrate, touch is a synergetic sensory link that amplifies our bodily experience of architectural form.

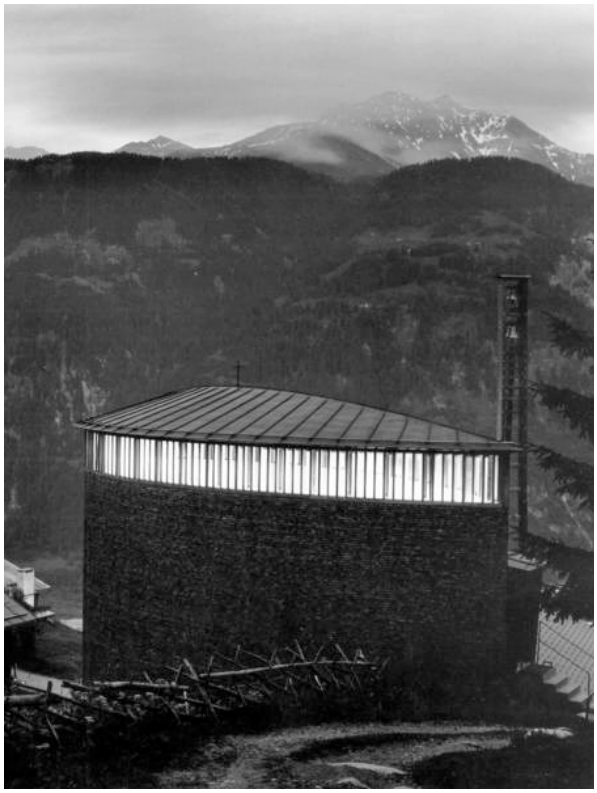

Fig.3. Saint Benedict Chapel

1. Touch is particular, not abstract.

Touch is immediate and specific to place, time and material. Makers must find ways of exploring this particularity, which includes climate, character, color, texture, weight and temporal qualities. In architecture, place is a term used to reference the specificity of spatial experience. Zumthor stated his attitude toward on place in a recent interview. "You always build in a place. One possibility is to impose your own style wherever you go. Another possibility is that the place inspires you to do something special. I belong to the second category. I see the site as a source of inspiration and my desire is to create something which corresponds with it.[6] A comparison of Saint Benedict Chapel and the Thermal Baths clearly exemplify his position.

Place: Located in the small alpine village of Sumvitg, Switzerland, Zumthor worked with the vernacular architectural context and specifics of the site while designing the Saint Benedict

Chapel. The traditional wooden shingles that wrap the Chapel exterior and repetitive timber framing within reinforces the compositional unity of form as a place of worship (figs.3,4). The use of a naturally weathering wood relates to the context and connects with the place, but does not replicate the stylistic language found there. Wood is an affordable and sustainable material that carries a metaphorical significance in the region. Zumthor is part of generation of Swiss architects who returned to local materials in the 1970's and 1980's as a reaction to trivialized historical references to Swiss chalet forms common at the time. Through the use of this native material, architects sought a deeper connection to Swiss history and place via a grammar of materials–not a grammar of symbols."[7]

Time: Though building again in a Swiss alpine village, his Thermal Baths at Vals are not made of wood. Here Zumthor roots the building into the place and the mountainside, formally and materially, by cutting into and using the local stone inside and outside the Thermal Baths. "The building takes the form of a large, grass-covered stone object set deep into the mountain and dovetailed into its flank. It is a solitary building, which resists formal integration with the existing structure in order to more clearly–and achieve more fully–what seemed to us a more important role: the establishing of a special relationship with the mountain landscape, its natural power, geological substance and impressive topography. In keeping with this idea, it pleased us to think that the new building should communicate the feeling of being older than its existing neighbour, or always having been in this landscape. Mountain, stone water, building with stone, building into the mountain, building out the mountain–our attempts to give this chain of words an architectural interpretation, to translate into architecture its meaning and sensuousness, guided our design for the building and step by step gave it form."[8]

The use of local gneiss led to a particular way of cutting and laying the stone that generated the form itself. Like the architect Louis Kahn's use of "hollow stones," Zumthor structures the building around massive, seemingly solid stone blocks or piers that are each hollowed out to contain discrete rooms for massage, changing and therapy. The major shared spaces and pools flow around and are defined by these hollow stones that emerge out of the mountain. The idea is clearly depicted in Zumthor's sketches (fig.1). This way of making a building recalls the Italian architect Vittorio Gregotti's essay, *Territory and Architecture,* where he describes the primal architectural act of laying a stone on the ground to mark place as the origin of architecture. Gregotti writes about placemaking as "building the site"…an idea that has influenced a generation of thought and designs of site and place.[9]

Material: Zumthor's material choices are always informed by the building's location, such that material and place are inextricably linked in his work. Reflecting in his book *Atmospheres:* "Material is endless. Take a stone: you can saw it, grind it, drill into it, split it, or polish it–it will become a different thing each time."[10] In the village of Vals, rough found stone was traditionally layered to make the timber farmhouse roofs. Zumthor cuts this same local green gneiss into thin blocks that are stacked layer upon layer like the stone strata of the mountainside, thereby forming a heavy, monolithic mass. The way the stone is cut and layered determines all the spatial junctures and details inside and out. Variations in texture and touch provide artist and architect with endless possibilities in the *process* of making as well. "It is obvious that, when you take two materials and put them together, you create something between them, some energy… The energy, tension and vibrations, the harmony between materials–this is what architecture is to me… We always have samples of materials at our office. I can see right away which one go well with each other and which do not."[11] Zumthor uses traditional materials such as wood, stone and concrete and assembles or transforms them in unprecedented and magical ways.

Fig.4. Saint Benedict Chapel

2. Touch encourages an open process of making.

Serendipity and spontaneity are inherent in touch because of its specificity and immediacy. Things are different each time we touch and make something. Developing ideas through real materials ensures that makers discover as they make, thereby establishing reciprocity between intention and discovery. This is an open process of making, rather than a predetermined or linear process. This exchange is a crucial aspect of both the design and construction processes. When asked about how he was able to achieve the different textures of stone in the Thermal Baths, Zumthor replied: "It's loving the material, loving the atmosphere, the radiance it has, and then, if you work a long time with these materials, a set of materials, all of a sudden you get it…material is stronger than an idea, it's stronger than an image because it's really there, and it's there in its own right."[12]

The distinctness of each site and program presents another open condition for the architect. Touch operates at multiple scales–from door handle to wall surface to the entire building as it touches the site. Again writing about the Baths, "the design process was a playful but patient process of exploration independent of rigid formal models. Right from the start, there was a feeling for the mystical nature of the world of stone inside the mountain, for darkness and light, for the different sounds that water makes in stone surroundings, for warm stone and naked skin, for the ritual of bathing."[13] Zumthor's open design process, informed by material explorations, a critical dialogue with the qualities of each site and chance discoveries along the way, invariably generates a distinct building that looks like "it is simply there."

An open process of making through models and drawings draws out and articulates material possibilities, rather than merely representing a future building. For instance, Zumthor experimented with different lead pouring processes for the Bruder Klaus Chapel's floor, which is a soft lead topography that collects rainwater falling through the oculus and changes color and even texture over time.

Baukunst: The art of building, even the actual process of how one builds, is a lost concept for many architects. The construction process was a source of inspiration and realization, however, for Zumthor's spatial and material conception of the Bruder Klaus Chapel. Commissioned and literally built by local farmers, the enigmatic shrine honors the 15th century hermit of the same name. First, a teepee-like or elongated conical structure of tree trunks was erected on the site and shored up from within. Over the course of twenty-four days the local farmers poured fifty centimeters of concrete each day to create a rough, striated exterior surface. Using a charcoal-burning process, the log structure was burned out of position to reveal a strongly molded surface that modulates light from the oculus above. Though intentional, this hands-on

and relatively uncontrollable process of setting the building on fire to remove the formwork and achieve a charred patina is perhaps the epitome of an open process of making in studio and on site. The highly tactile, exquisite and sublime interior space of the shrine could not have been achieved otherwise (fig.5).

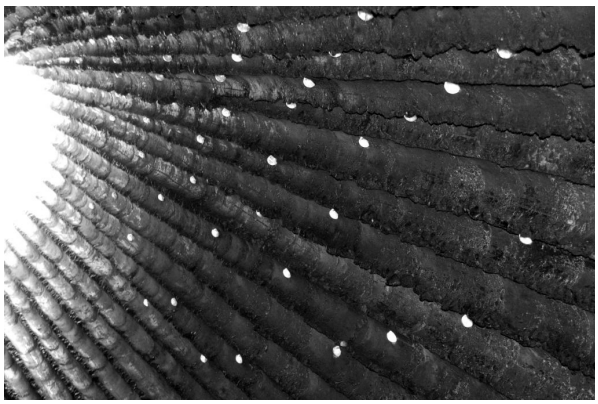

Fig.5. Bruder Klaus Chapel

3. Touch is experience, not image.

Human sight and the reception of a painting rely on imaginary touch–seeing a surface's rough impasto or smooth, transparent layers and imagining their touch. We are able to conjure tactility even with purely visual stimuli. Though some artists have rejected the "do not touch" policy of museums and galleries, paintings are rarely literally touched by anyone other than the painter. Conversely, architecture is touched. The architect must imagine the literal touch of future and unknown inhabitants. That is why a doorknob, handrail or step is so crucial. They are frequently touched places that physically register human touch over time through worn surfaces and burnished bronze. As so eloquently described by Finnish architect Juhani Pallasmaa, "The tactile sense connects us with time and tradition; through marks of touch we shake the hands of countless generations."[14] Thus, embodied experience is intensely relevant for both the maker and the inhabitant. Phenomenology, in its desire to restore the sensory plenitude of lived experience, has been revelatory for the architectural discipline. An examination of the body's direct sensory engagement with environment connects with how things are made. Pallasmaa's writing, rooted in ideas of Husserl, Heidegger and Bachelard, laments the loss of sensuality in culture and architecture. "The detachment of construction from the realities of material and craft turns architecture into stage sets for the eye, devoid of the authenticity of material and tectonic logic."[15]

Representation: How does the architect's creative process grapple with the question of representation? Are the resulting drawings and models primarily representations of a future building, studies to help the architect conceive of that environment, or legal instructions for the builder? Phenomenologists insist that architecture should not be representational, but that architecture presents or "brings something into presence."[16] Discussing the role of drawings, Zumthor claims "A real representation of something would destroy it. The best images of something not yet built are the ones that give you a broad, open feeling, like a promise..."[17] Other than conceptual sketches and construction details, Zumthor rarely publishes his drawings. This stance is unusual in an image-conscious world where many architects are more known for their slick drawings than the built things that the drawings represent.

4. Touch is synergetic with all the senses.

Architecture must be truly understood through a multi-sensory experience of a place in time. In *The Eyes of the Skin: Architecture and the Senses,* Pallasmaa describes the contemporary dominance of vision or ocularcentrism, probes the importance of peripheral vision to spatial experience, and argues that the senses are not independent but interactive and synergetic.[18] From a related position, Zumthor articulates nine things that are important in his creative process and together produce a unified sensory approach. The sound of a space is one such thing. "Interiors are like large instruments, collecting sound, amplifying it, transmitting it else-

where. It has to do with the shape peculiar to each room and with the surfaces of the materials they contain, and the way those materials have been applied."[19] For example, the Thermal Baths emphasize the sensory relationship of the body to water, stone, light and sound. When describing the design, Zumthor specifically writes about "the different sounds that water makes in stone surroundings."[20] Another of the nine things is the temperature of a space. "So temperature in this sense is physical, but presumably psychological too. It's in what I see, what I feel, what I touch, even with my feet."[21] Though how we as humans find pleasure and protection in specific thermal conditions is inadequately considered in most building design, important theoretical studies may be found in Lisa Heschong's book *Thermal Delight in Architecture* and Luis Fernandez-Galiano's book *Fire and Memory: On Architecture and Energy.*[22]

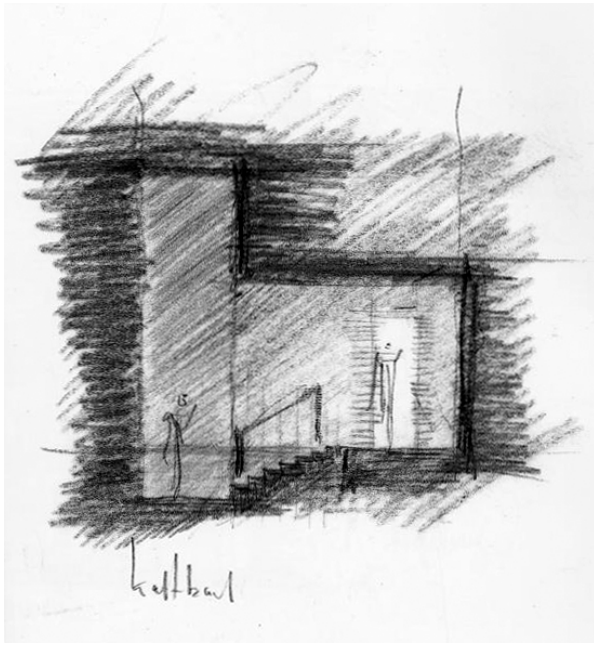

Fig.6. Thermal Baths

The magic of the real

Zumthor describes the essential nature of sensory engagement in a very direct way. "People interact with objects. As an architect that is what I deal with all the time. Actually, it's what I'd call my passion. The real has its own magic. Of course, I know the magic that lies in thought. The passion of a beautiful thought. But what I'm talking about here is something I often find even more incredible: the magic of things, the magic of the real world."[23] Many would disagree with Zumthor's passion for "the magic of the real world" and this essay's claim that touch is absolutely essential in architecture. Jean Baudrillard, Christine Boyer, and Peter Eisenman have all argued that when the physical world is dematerialized by electronic media, then appearance is valued over existence.[24] Although technology certainly has a role in shaping the experience of space, the powers of touch shows no sign of waning. Touch is particular, experiential and generative of an open process of making. As Peter Zumthor's work eloquently demonstrates, touch is a synergetic sensory link that amplifies our experience of architectural form.

Fig.7. Thermal Baths

Figures

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Fig.6. Rector and Visitors of the University of Virginia, copyright 2004.

Fig.7. Rector and Visitors of the University of Virginia, copyright 2004.

Notes

[1] Andrew Saint, "Architecture as Image: Can We Rein in this New Beast?" in *Reflections on Architectural Practice in the Nineties,* ed. William S. Saunders (New York: Princeton Architectural Press, 1996), 12-19. Also see Jean Baudrillard, *The Ecstasy of Communication* (New York: Semiotext(e), 1988).

[2] Ignaci de Sola-Morales examined this condition in "The Work of Architecture in the Age of Mechanical Reproduction," *Differences: Topographies of Contemporary Architecture* (Cambridge: MIT Press, 1997), 133-137.

[3] Contance Classen, *The Book of Touch* (Oxford: Berg, 2005), 2.

[4] Diane Ackerman, *A Natural History of the Senses* (New York: Vintage Books, 1991).

[5] Robert Jütte, *A History of the Senses. From Antiquity to Cyberspace* (Cambridge: Polity Press, 2005).

[6] Royal Academy of Arts, "Zumthor goes to the Essence of Things," (accessed November 19, 2007), http://www.royalacademy.org.uk/architecture/interviews/zumthor,267,AR.html.

[7] For more on this situation in Switzerland, see Martin Steinmann, "The Presence of Things," in *Construction Intention Detail,* ed. Kevin Alter and Mark Gilbert (Zurich: Artemis, *1994*), 8-25.

[8] Peter Zumthor, *Three Concepts* (Basel: Birkhauser, 1997), 11-13.

[9] Vittorio Gregotti, "Territory and Architecture," in *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory, 1965-1995,* ed. Kate Nesbit (New York: Princeton Architectural Press, 1996), 338-344. The specificity of spatial experience is sometimes extended to the idea of genius loci. The "spirit of the place" is an ancient Roman idea reintroduced by architectural theorist Christian Norberg-Schulz. He argued that it is the architect's responsibility to discover the genius loci and design for this singular presence by intensifying the natural attributes of the situation. Critical Regionalism, as articulated by Kenneth Frampton, could also be compared to Zumthor's approach in this resistance to universalization in the specificity of the place via wind, light, temperature, topography and culture. See Kenneth Frampton, "Towards a Critical Regionalism: Six Points for an Architecture of Resistance," in *The Anti-Aesthetic: Essays on Post-Modern Culture*, ed. Hal Foster (1983): 16-30.

[10] Peter Zumthor, *Atmospheres: architectural environments, surrounding objects* (Basel: Birkhauser, 2006), 25.

[11] Barbara Stec, "Conversation with Peter Zumthor," *Casabella* 719 (Feb 2004): 6-13.

[12] Steven Spier, "Place, Authorship and the Concrete: three conversations with Peter Zumthor," *arq,* v.5, n.1 (2000): 19.

[13] Peter Zumthor, *Three Concepts,* 11.

[14] Juhani Pallasmaa, "An Architecture of the Seven Senses*," in Questions of Perception: Phenomenology of Architecture, A+U* (July 1994): 33.

[15] Pallasmaa, 29.

[16] Christian Norberg-Schulz, *Genius Loci: Towards a Phenomenology of Architecture* (New York: Rizzoli, 1979).

[17] Royal Academy of Arts, "Zumthor goes to the Essence of Things," (accessed November 19, 2007), http://www.royalacademy.org.uk/architecture/interviews/zumthor,267,AR.html.

[18] Juhani Pallasmaa, *The Eyes of the Skin: Architecture and the Senses* (London: Academy Editions, 1996).

[19] Peter Zumthor, *Atmospheres,* 29.

[20] Peter Zumthor, "Thermal Baths at Vals," *El Croquis* 88/89 (1998): 268.

[21] Peter Zumthor, *Atmospheres,* 35.

[22] Lisa Heschong, *Thermal Delight in Architecture* (Cambridge: MIT Press, 1979).

[23] Peter Zumthor, *Atmospheres,* 17-18. Also see Peter Zumthor, "The Hard Core of Beauty," *Thinking Architecture* (Boston: Birkhauser, 1999).

[24] See Christine Boyer, *Cybercities: Visual perception in the Age of Electronic Communication* (New York: Princeton Architectural Press, 1996); Peter Eisenman, "Visions' Unfolding: Architecture in the Age of Electronic Media," *Domus* 734 (Jan 1992): 20-24.