

PETER ZUMTHOR
THERME VALS

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Essays

Sigrid Hauser
Peter Zumthor

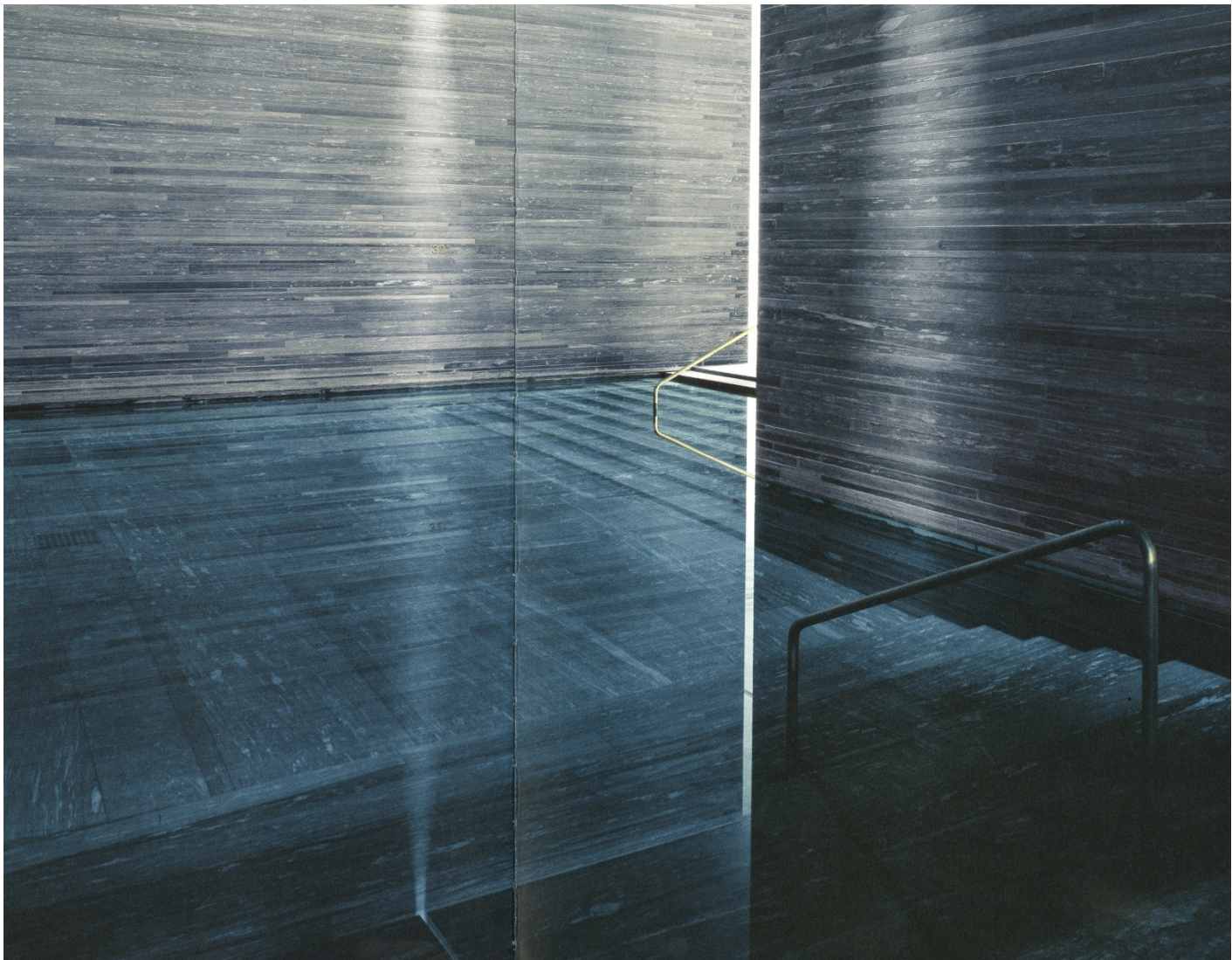
Photographs

Helene Binet



Scheidegger & Spiess

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VALS AND THE HISTORY OF THE BATH

Sigrid Hauser

In the beginning there is already the question as to the ends, i.e. the question of presentation and how this will adequately handle the different levels of concept and reality. Each level should elucidate a particular area: the development of the design, the architecture of the building, the biography of the materials, the history of the site, and the cultural history of bathing. The paths of approach are circuitous, the method seeks to trace these winding threads and make them visible. It is a method of taking apart and putting back together, the complexity of the subject matter is separated into themes and rearranged in a different order. In the never ending task of compiling their German dictionary, Jacob and Wilhelm Grimm referred to alphabetical order as a *healthy order*, perhaps because the system of presentation is ostensibly democratic, for all terms are given equal recognition and the sequence is not governed by hierarchical preferences. There is, however, interpretation involved in the selection, and it is certainly artificial in its construction. In European languages the order of the letters can be traced back to the oldest Semitic **ALPHABET**, the invention, to the Phoenicians, who more than 4,000 years ago were the dominant maritime trading culture across the entire Mediterranean for centuries. Using only two dozen characters it was finally possible to record all human thoughts and memories. In the eleventh century BC this system of characters is allegedly adopted by the Greeks, the names of the letters remain the same: *aleph* or *alpha* means ox, *beth* or *beta* means house. The first letters of the Hebrew alphabet *alef* and *bet* have the same origin. After that, the sequence varies in the different languages. Thus the Romans adopted the Greek alphabet, replacing some of the sounds with their own or adding new ones - after the conquest of Greece the *zeta*, which had been dropped, had to be readopted because more and more foreign Greek words were being written with Latin letters.

It was placed at the end of the Latin alphabet and became the Z, which, *in the expression from A to Z* - according to the Brothers Grimm - *signifies entirety*. In the Hebrew alphabet, the last letter is the *taw*, after the Ten Days of Repentance it marks the long awaited end on the Day of Atonement, when the *confession of sins* is recited – one sin is named for each letter of the Hebrew alphabet, twenty-two letters, twenty-two sins, in the *Tales of the Hasidim* by Martin Buber, a rabbi's comment on this prescription is that one finally knows *when to stop*, for *there is no end to the awareness of sin, but there is an end to the alphabet*.

Jacob and Wilhelm Grimm, Deutsches Wörterbuch (1854), Munich 1999.
Hans Joachim Störig, Abenteuer Sprache - Ein Streifzug durch die Sprachen der Erde,
Munich 2002. Martin Buber, Tales of the Hasidim, New York 1991.

In his *Metamorphoses*, Ovid writes about Actaeon and the bathing goddess, but unlike his Greek colleagues, such as Hesiod, Callimachus, Apollodorus, or Pausanias, who have addressed this theme before and after him, he does not imply clear intent on the part of his hero, but instead has the hapless hunter dash headlong and by mere chance into disaster. *Fortunae crimen, or for so fate would have it*. Man becomes the innocent victim of a malevolent god. In secondary literature, critics speak of the *fate of Actaeon*, cite the original sin for lack of a better interpretation. Actaeon is a huntsman, who after a successful day of hunting is wandering through the *unfamiliar woods with unsure footsteps* when he enters the *secluded grove*, which Ovid describes in great detail a few lines earlier. Here he finds a fountain, where the *goddess of the woods when weary with hunting* is wont to come with her nymphs to *lave her virgin limbs in the sparkling water*. Diana is the goddess of hunting and archery, protectress of animals, children, and the weak and feeble, guardian of the woods and springs. She is also often called the moon goddess or associated with the moon, and the moon is the source of all water. According to the original Greek myth, she is called Artemis, the meaning of this name is ambiguous, can signify *purity*, but also *having powerfull limbs* or *she who cuts* or the *supreme gatherer*, depending on the derivation of the syllables. She is the twin sister of Apollo, she has consciously chosen eternal chastity as a way of life, defends it vehemently, and demands her constant companions, the nymphs, do the same. It is likely that she embodies an older deity: virgin, mother, Amazon, one with many breasts, bountiful source of food and fertility. Ovid interprets this story as he sees fit, siding with the mortal/man, Actaeon, an innocent victim who is punished by the goddess/woman, **ARTEMIS / DIANA**, because he surprises her while she is bathing, a ritual religious act reserved in mythological times for nymphs and deities. To prevent him from telling of his experience, the wrathful goddess turns the hunter into a stag incapable of speech, who is chased and ultimately killed by his own hounds. This metamorphosis may refer to pre-Hellenistic cults, to the stag-god, who in Celtic mythology stands, along with other animal deities, for the gradual transformation from animal to human, in the Gaulish religion he survives as Cernunnos, the Horned God, he is the emissary of the god of the Other World, his appearance, a revelation of the divine spirit. In the oldest versions of the *Nibelungen Lied*, the golden stag is slain with an arrow because of the rivalry of two women. There are countless parallels of the cult of killing creatures who are half man, half stag in various European cultures, perhaps this age-old yearning to possess the image of a deity continues to live on in stag hunting.

The Christian religion has hallowed or damned the cultic symbols of the natural deities, swallowed up their sacred places. Thus the legend of the founding of the Fraumünster church in Zürich probably originates from the Helvetian cult of Artemis. Every morning an emissary of God in the form of a *beautiful white stag with burning lights on its antlers* guides two pious sisters, the daughters of King Louis the German, from their castle, through the dark forest, and down to the banks of the Limmat river, where it waits for them to say their prayers in a chapel, then leads them back home. The daughters ask their father to build a house of God and abbey at the place where the mystical stag waits each day. From the founding of the abbey in 853 until it is turned over to the secular leaders of Zürich in 1524, the abbess is always also the ruler of the city with market and coinage rights and the authority to levy duties. The stag with the illuminating antlers becomes the symbol of the Fraumünster church and the motif of the magnificent mural that still adorns the Romanesque-Gothic cloister as Paul Bodmer's portrayal of the founding legend painted from 1928 to 1938. In 769, another Frankish king and Roman emperor discovers the ruins of a Roman thermal bath named after Grannus, the Celtic god of mineral springs: *Aquae Granni*, a therapeutic bath and cultic site even in pre-Roman times. Charlemagne, as the legend goes, has gotten lost chasing a stag when he comes upon the steaming marsh, in other words, the stag has led him to a hot spring. The bath is renovated and the *Liebfrauenkirche* erected in honor of the Holy Mother. To this day - in what is now Aachen - one can still find some thirty hot springs with 70°C sulfur and saline waters.

According to legend, many springs and spas are founded when a prince is led to the site by a wounded and wondrous stag. History tells of ritual sites originally devoted to Diana being dedicated to a new patron, the Virgin Mary. In this sense, the stag in the legend of Saint Eustace is not only a messenger of God but it also assumes divine qualities. Saint Hubertus also takes on such attributes: as the Bishop of Lüttich he is wont to send missionaries into the harsh wilderness of the Ardennes forests, where the natives still sacrifice the first kill of each hunt to the goddess Diana. Hubertus forbids this pagan custom, later they start dedicating the first kill to him, after his death he is honored as the patron saint of hunters, in subsequent legends he is even portrayed as a passionate hunter.

To lead and be chased: At any late, man has used the chase scenes of the gods to justify his invasions: Alpheus, a river god, falls in love with the nymph Arethusa as she bathes in a river. Taking the shape of a hunter, he follows her, she flees across the sea to a little peninsula on the eastern coast of Sicily, in vain. Finally, Artemis comes to her rescue, transforming her into a spring that arises at the point where the nymph first steps onto shore. The story of the founding of Syracuse interprets the myth as it sees fit because without this spring the city would never have come to be. History reconstructs its own story: in the eighth century BC, Greek settlers from Corinth land here, they conquer the native people and drive them out, then settle and name the peninsula Ortygia in honor of Artemis' birth place near Delos. They call the town Syracuse after a nearby swamp that the native people refer to as *syrakka*. Today the Arethusa Fountain is a meeting place for young people and a must for tourists. Other religions twist the traces and traditional images, turning the woman into an innocent culprit: Susannah - Hebrew for *Lily* - is the main figure in an apocryphal addition to the Book of Daniel in the Old Testament. The two old men in the legend who secretly watch her bathe, use threats to seduce her, and betray and slander her in the end are the two village elders appointed by the people as judges, and thus the people believe them and condemn Susannah to death. Before the sentence can be enforced, however, the lie comes to light: a young man named Daniel - which means *God is my judge* - manages to convince the people of the truth and save the wretched woman, and her father, her husband, and all her relatives praise God, not because she was saved from execution, but because nothing dishonorable could be held against her. In the Second Book of Samuel the chosen one is named Bathsheba, *daughter of the oath*. During her prescribed monthly bathing ritual, she is observed by King David, he calls for her immediately and she consents, he sends her husband on a futile and fatal mission, and she becomes his wife.

Whatever the names of these bathing women, for their stories are rarely told, they have been portrayed countless times in art, the theme is the female nude in nature, sometimes it is also a portrait of the soul. Titian, Veronese, and Tiepolo show the naked Diana in various poses, Tintoretto's Susannah is the very image of seduction, Bathsheba is made the subject of self-complacent artistic observation from Memling to Rembrandt: with so many episodes the painting can satisfy a whole range of male fantasies. Heinrich von Kleist puts these fantasies not on canvas but in words: in his idyll, *Der Schrecken im Bade* [*The Shock While Bathing*], the protagonists are two

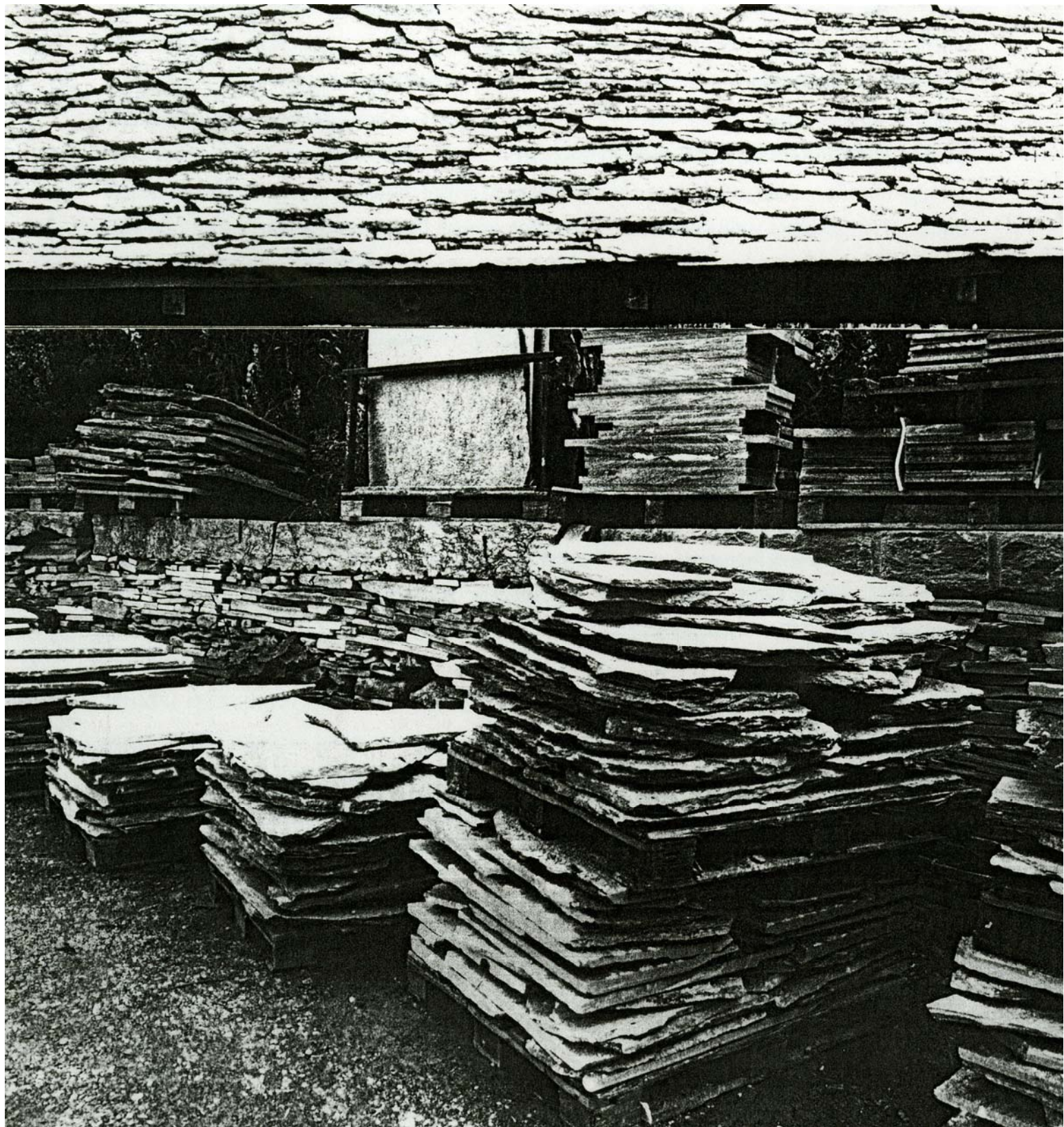
women, Margarete, who is bathing, and Johanna, the woman watching her. Fritz, Margarete's fiancé, is *faraway in the mountains hunting the stag that recently upset the corn fields*. The shock comes when Johanna intentionally lowers her voice, so that Margarete thinks Fritz is spying on her. Lurking behind these misunderstandings are the social orders we are brought up with and which still direct our desires and stage our seductions to the present day. In Pierre Klossowski's *Diana at Her Bath* the roles are switched, or in fact doubled: *Actaeon wears the head of a stag upon his own*, he goes to the spring and waits for Diana. *Meanwhile, the invisible Diana watches Actaeon, who is imagining the naked goddess*. The book's illustrations reveal Klossowski's opinion that *trying to approach the myth through the medium of language is hubristic and irreverent: one's very words become a mirage*. *Dianabad ist Erlebnisbad [Dianabad - where swimming is an adventure]*. Advertising has always made use of the language of art, and today it caters to the consumer-oriented leisure industry with its interchangeable images of naked female bodies in water. To follow and be chaste: The goddess wants to and should be left alone, but once disturbed, we hear the bellow of a stag and in its happiness the sound of desperation.

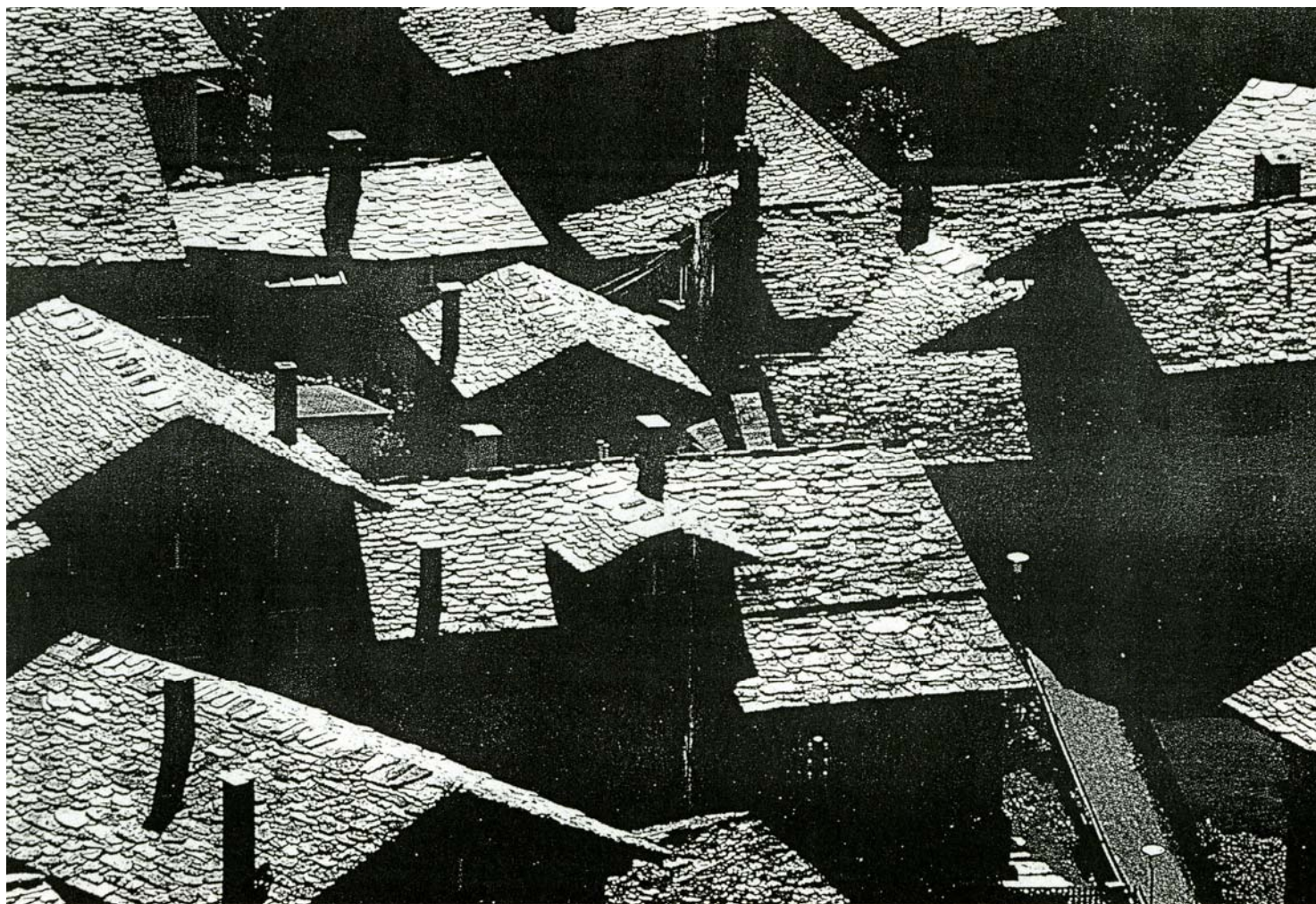
Publius Ovidius Naso, *Metamorphoses*, London 2004. Robert von Ranke-Graves, *Griechische Mythologie*, Reinbek bei Hamburg 1994. Lancelot Lengyel, *Das geheime Wissen der Kelten*, Freiburg im Breisgau 1994. Kurt Wemer Glaetli, *Zürcher Sagen*, Zürich 1970. Leander Petzoldt (ed.), *Historische Sagen*, Baltmannsweiler 2001. Nino Muccioli, *Leggende e racconti popolari della Sicilia*, Rome 1988. Martin Luther (trans.), *Die Bibel*, Stuttgart 1999. Heinrich von Kleist, *Sämtliche Werke*, Munich 1994. Pierre Klossowski, *Diana at Her Bath*, New York 1990.

The medieval bathhouse was where the *barber-surgeon* plied his trade, *trimming beards* and also *performing minor operations* as the name suggests. Thus Roman thermal baths integrated physicians' offices and operating rooms. In ancient Greece the therapeutic bath was both a place of healing and a cultic site, the physician as balneologist and balneotherapist, thus doctor and at the same time priest. Greek philosophers and doctors recognized and propagated the therapeutic benefits of springwater from the fifth century on, especially Hippocrates, the Father of Medicine, who was born around 460 BC on the island of Cos. After his death, an *asclepieion* was erected outside the city of Cos in his memory. This sacred temple built to honor **ASCLEPIUS / ASKLEPIOS** was located in a sacred grove at a sacred spring and was gradually enlarged into a rambling sanatorium with terraces, indoor athletic tracks, dormitories for the sick, and treatment rooms. This was the beginning of a cult that also spread in Rome due to an epidemic of the Plague in 293 BC. In Rome, the Greek god was venerated as *Aesculapius*, by the Late Roman Empire allegedly *over 300 sacred temples with therapeutic springs* had been dedicated to him, the Romans called them *aquae*. Aesculapius was the god of healing and the son of Apollo and Coronis. The legends about his birth diverge, but what 'seems clear is that he received his medical training from the Centaur Chiron. At an asclepieion, healing was achieved through ritual washing at the spring, consumption of the water, and sleep, which was called *incubatio* and took place in a closed room, the *abaton*: *visions during incubatio were interpreted by the priests and converted into therapeutic measures*. The sacred temples grew and evolved, becoming mass pilgrimage sites in a modern sense.

Asclepius' symbol is the snake, the periodic shedding of its skin symbolizes rebirth, eternal youth, and immortality, a cult probably adopted by the Greeks from earlier civilizations in the Ancient Near East. For this reason the Romans kept Aesculapian snakes in their baths, this harmless species, indigenous to southern Europe, was transported to the occupied territories in the north as well, where it can sometimes still be found today.

Robert von Ranke-Graves, *Griechische Mythologie*, Reinbek bei Hamburg 1994. Marga Weber, *Antike Badekultur*, Munich 1996. Hans Egli, *Das Schlangensymbol - Geschichte, Märchen, Mythos*, Solothurn-Düsseldorf 1994.





FIRST IMAGES The beginning was easy. Actually it was a new beginning. Having won the competition in 1986 for the expansion of the hotel with integrated thermal baths and therapeutic facilities, in the late 1980s we had to revamp the design completely. The upshot was a huge project, nicknamed the 44-million-project by the locals in Vals, which proved impossible to finance. For us architects it was a relief not to have to build the revised proposal. The project was loaded down with program requirements and operational specifications. The project management, in charge at the time, wanted just too much. We had not even finished drafting the final plans before realizing that the vision underlying the building program for the Thermal Baths in Vals would need serious rethinking for us to come up with a good proposal. And that's what happened. In 1990, the community of Vals, represented by the "Hotel und Thermalbad AG," commissioned us to design what has become today's thermal baths: a free-standing building, a so-called "solitary" structure, plus wellness center, built into the slope in front of the hotel and only loosely connected with it. In contrast to the earlier project, which would have had to rely on outside investment, the new building would be smaller, a self-contained thermal bath and purely a project of the community, as an important contribution to the tourist infrastructure. The new building would replace the old thermal baths of the hotel, built in the 1960s, attracting new guests for both the hotel and the village.

The beginning was easy. Going back in time, bathing as one might have a thousand years ago, creating a building, a structure set into the slope with an architectural attitude and aura older than anything already built around it, inventing a building that could somehow always have been there, a building that relates to the topography and geology of the location, that responds to the stone masses of Vals Valley, pressed, faulted, folded and sometimes broken into thousands of plates - these were the objectives of our design. But wasn't there something before that - ideas, images, fragmented and less connected than this summary, written from memory, of the intentions that lay behind the design at the time?

Which ideas came first and how did they acquire shape? Were there actually ever any unshaped abstract ideas, as I like to think we might have had for the baths in Vals, or did an image inevitably accompany every idea?

Recollections. We observed the place, its surroundings. We were interested in the stone roofs, their structure reminiscent of reflexes on water. We walked around the village and, suddenly, everywhere there were boulders, big and small walls, loosely stacked rough plates, split material; we saw quarries of different sizes, slopes cut away, and rock formations. Thinking of our baths, of the hot springs pushing out of the earth behind our building site, we found the gneiss in Vals more and more interesting; we started looking at it in greater detail - split, hewn, cut, polished; we discovered the white 'eyes' in what is called augen gneiss, the mica, the mineral structures, the layers, the infinitely iridescent tones of grey.



Das Valsertal vor 80 Millionen Jahren.



Schöngedächte Massener beiderseits der Meer. Die im Bild zu hoch nach Parosier mit ihrer sieben Meter langen Kluft liegt die erste schwebende Felseninsel.

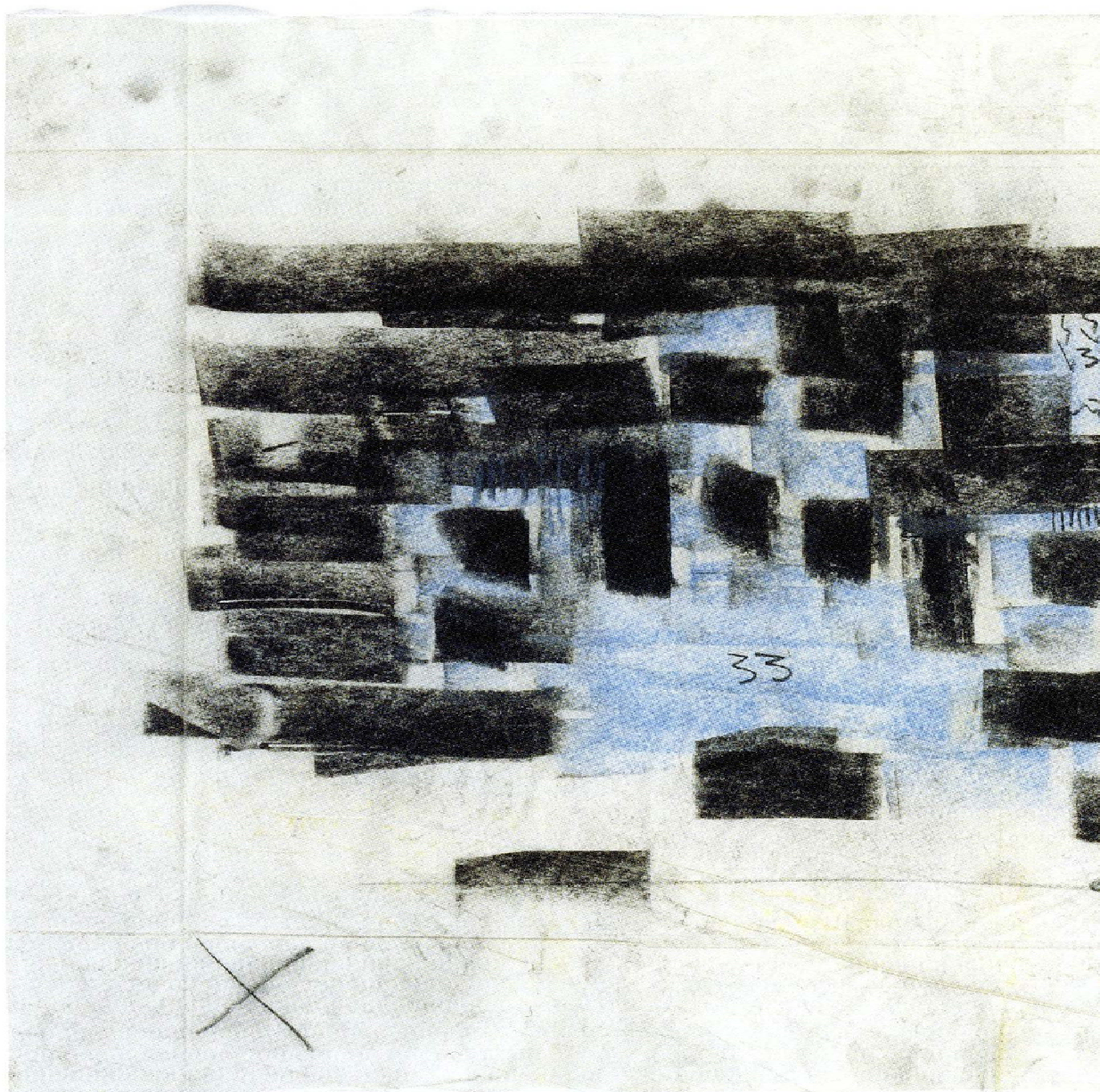
Als der Bohrer Andromed und Metamorphose Alfred Wagner am 4. Januar 1912 bei der Gesteinigen Verschiebung im Flank der von Mann seinen Vortrag über die »Verschiebung der Kontinente« hielt, war die Fachwelt empört oder atemlos. Erst in den nächsten Jahren fand die Theorie Wegener weltweit wissenschaftliche Bestätigung und Anerkennung. Auch die Dichtung der Alpenanordnung war durch endlich klar. Aber wie kann sich das wirklich verändern? Vor 100 Millionen Jahren richtete Alfred auf Europa wie ein halbes die Kammhöhe, die ist aber, wie sich heute die Berge des Valsertales aufbauen, wurde durch die Gletscher zusammen und zerlegt. Welche ragen nur dem Meer, heute mit spärlichem Leben. Inseln, die in Jahrmillionen wieder verschwinden: Inselgruppen über, die heute an Bändermacher die Pl. Aus nicht nur bei der Meeressenkung des Valsertales im Valsertal, sondern auch bei der Senkung des Valsertales im Valsertal.

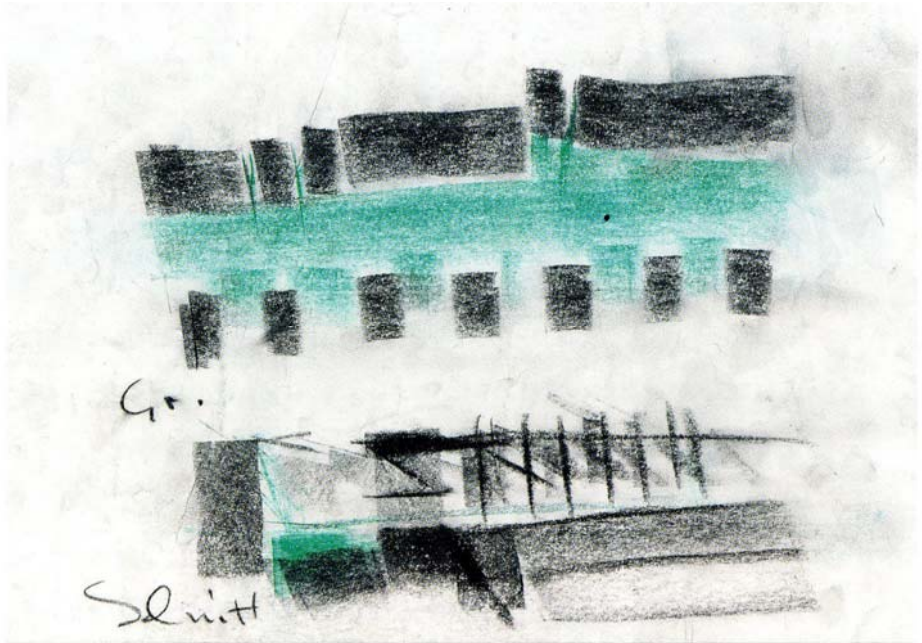
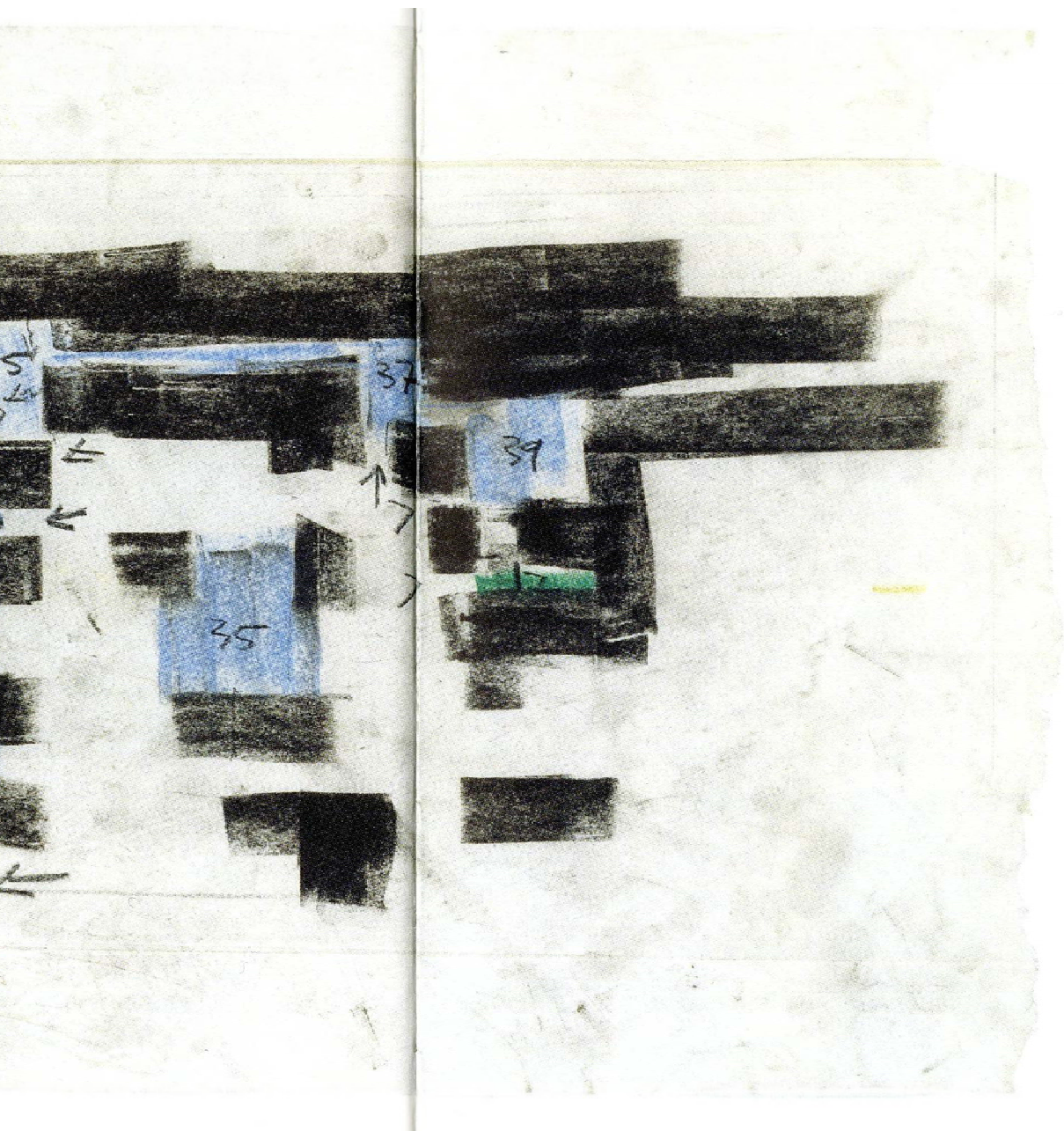
Foto per. G. V. Valsert.

And we began to see Vals through the eyes of the advertisers who launched a huge campaign for sparkling water from Vals with a double-page spread in the newspapers, showing a primordial landscape of water with towering, jagged mountains and the heading: "The Vals Valley 80 Million Years Ago." The ad hung on the wall of my studio for a long time.

While looking for an architectural idiom to express our "underground" baths, we noted several parallels close by: the many tunnels and galleries constructed between Ilanz and Vals to protect the road from rockfall and avalanches, and the dam of the Zervreila reservoir way back in the valley: all powerful and impressive architectures, tests of civil engineering built into the mountains to keep them in check but also testifying to their might. And the interiors of these structures are essential, quintessential. Sometimes they are like cathedrals, as shown in the picture taken inside the Albigna dam.







Raised in the spirit of classical modernism and besieged by fashionable postmodern designs, we were cautious about models. But there was a color photograph of the Rudas Baths in Budapest dating to the days of the Turks, which I had copied from a book and stuck on the wall. The rays of light falling through the openings in the starry sky of the cupola illuminate a room that could not be more perfect for bathing: water in stone basins, rising steam, luminous rays of light in semidarkness, a quiet relaxed atmosphere, rooms that fade into the shadows; one can hear all the different sounds of water, one can hear the rooms echoing. There was something serene, primeval, meditative about it that was utterly enthralling. The life of an Oriental bath. We were beginning to learn.

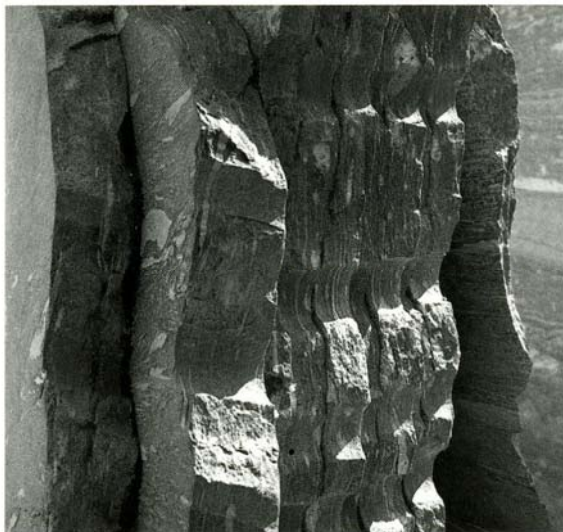
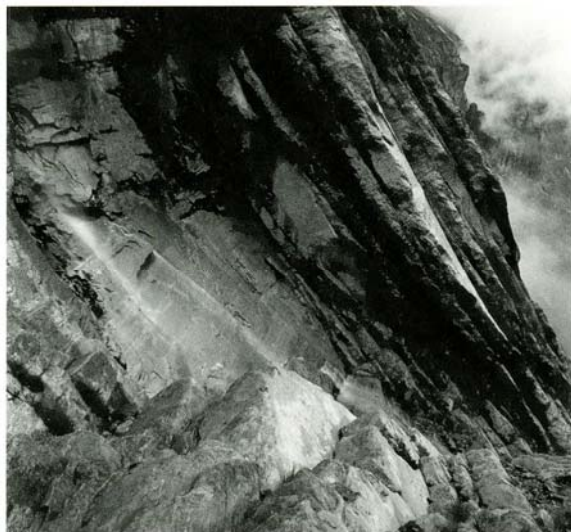
"Boulders standing in the water": as I recall, that was my remark about the first sketch for the baths, reproduced below. It became a driving force: stone and water. I took it along to a design meeting. "Like a quarry" somebody must have said at some point. We ended up drawing many quarry sketches.

The special advantage of the Vals stone roof is that it is fire- and weatherproof. In the 1950s Albin Truffer founded his own quarry company in Vals, *providing a one-hundred-year guarantee* for his roofs. They are still considered *indestructible, impervious to frost, and absolutely watertight*. Originally, anyone could quarry rock *by hand* from any *extraction site* if it was for his or her own house. Division of labor gave rise to individual professions like the *slab maker* and the *stone roofer*. *All buildings except for the church, all houses, stables, alpine cabins, are roofed with gneiss or mica slate slabs*, wrote Johann Josef Jörger in 1913, and added: *These stone roofs have been built relatively flat and constructed so solidly that you can run upon them like on a paved road*. The *split* product used for this traditional building method is called *broken* or *natural-broken*. The next generation of the Truffer AG *purchased the company's first milling machine*, says Pius Truffer, the milling of Vals rock into slabs was once considered as *inconceivable* as what was later constructed with these slabs. *Diamond-tipped circular saws are used to cut into the layers*, producing different lineations and marbling patterns. Slabs of different thicknesses are stacked in front of the production hall to await further processing, specially selected slabs are prominently displayed against the walls of the *Drinking Stone* of the Therme Vals. The petrological classification of this Vals rock is gneiss, which is a *metamorphite* that is, rock produced *through changes in temperature and pressure*, it can also be referred to as *orthogneiss*, or depending on its particular structure **AUGEN GNEISS / AUGENGNEIS**. Its principal constituents are feldspar, quartz, and mica. The geologist Peter Eckardt estimates the age of the original rock to be *roughly 300 million years*, the *formation of the Alps*, which began approximately 50 million years ago, altered it or *metamorphosed it: the thrust to the north and the stacking of rock units produced temperatures of up to 500°C and pressures of up to 15 kilobar*. The *augen - lenticles of individual minerals surrounded by the rock matrix - were deformed, stretched, and flattened*, thus it is *presumably possible to recognize movement patterns from the Stone Age* in them.

Vals gneiss, also called Vals quartzite, is an exceptional, very versatile building material due to its outstanding *flexural and tensile strength* and its *resistance to frost and mechanical abrasion*. The masonry stones are categorized according to their method of processing - *milled, broken, cleft* - the surface finishes of the slabs include *roughly ground, bush-hammered, sandblasted, finely ground, polished*. Today this stone is exported throughout the world, the construction of the Therme Vals made it famous:

60,000 individual stone slabs were utilized. But it has also had to endure being transformed into *items of a very different sort: tables, bowls, dinner plates, Röteli drinking cups, egg cups, bottle coolers, storage vessels, wash basins, oil-burning lamps, candle holders, vases, quick-change picture frames, palisade fences, birdbaths...*

Johann Josef Jörger, *Bei den Walsern des Valsertales* (1913), edited and expanded by Paula Jörger (1947), 51h edition, Basel 1998.
Peter Eckardt, *Der Steinbelag im Kontext*, in: Bundesamt für Bauten und Logistik Bern (ed.), *Neugestaltung Bundesplatz in Bern*, Bern 2004.
Hans Murawski, Wilhelm Meyer (ed.), *Geologisches Wörterbuch*, 11th edition, Munich 2004.



In her photographs of the *young Valserrhein in the wake of a retreating glacier* taken in the *Länta Valley* at an altitude of 2,300 meters, tangible proximity and unapproachable distance converge in the same image, and in her photo series of the *Therme Vals* Hélène Binet also depicts the building from a perspective of both near and far. The architecture frames, divides, centers the landscape and its distinctive features, what the building's structure allows one to experience on site, becomes the theme in the photograph: the view of the steep slope vis-à-vis, the stone roofs of the village, the mountain peaks on the horizon. In the **OUTDOOR POOL / AUSSENBAD** the building method of *tables* and *blocks* is clearly visible, while acoustically the overflow gulleys integrated into the built-up system of stone masonry call attention to themselves like gurgling voices from the depths. The direct line of sight to the *Indoor Pool* is impeded by the arrangement of the *blocks*, the surroundings are integrated - extrovertedness within protective bounds. The water as a *material* in which one can *immerse* oneself: a postcard motif by Hélène Binet shows the horizontal lines of the masonry disappearing into the water near the bottom of the picture, the heads of four women mark the line of intersection. Otherwise, one rarely encounters people in her architectural photographs, that would produce a *different picture*, she says, would *immediately imply a narrative, an episode, a story*, it creates a different focus that would distract from the building and its distinctive features.

Different photographers have portrayed the *Outdoor Pool* from different angles: there is a lot of stone in the picture, the *broken* surfaces of the *Stone Island*, the cantilevered concrete slabs atop layers of stone, the elegant lines of the chaise lounges, steps into the water, bodies in the water. Vertical accents don't appear in the pictures at all, or only rarely: in the morning the brass stanchions of the railings on the *Rock Terrace* cast their shadows on the stone wall, in the foreground three fountains rise out of the depths, their golden necks bending downward: early in the morning, when the church bells in the village strike seven, the water starts to flow from the brass pipes into the pool.

Hélène Binet (photos) in: Peter Zumthor, *Works Buildings and Projects 1979-1997*, Baden 1999.

Hélène Binet (photos) and Peter Schmid (captions) in: *Hotel Therme Vals* (ed.), *Stone and Water - Culture and Events Winter 2005/06*, Vals 2005.

Between the hotel and apartment buildings from the 1970s, the lengthwise projection of the **STRUCTURE / BAUKÖRPER** runs parallel to the slope lines and the north-south alignment of the valley, embedded, as it were, in the slope of the terrain, its roof an extension of the topography, forming a nine-meter drop at its front edge. Peter Zumthor speaks of a *solitary building* or a *large, grass-covered stone object set deep into the mountain and dovetailed into its flank*. The east façade presents itself in its full length, the light-colored edge of the concrete slab roof forms a striking horizontal line against the stone masonry, the large and small openings seem to be composed according to a mysterious rhythm, they gaze out at the alpine cabins on the steep slope across the way, at the treetops, rows of balconies, and roofs immediately before them. Among the haphazard cluster of lower and tower-like structures, this building creates a certain degree of order and affiliation, it defines points of reference which direct the eye, cuts an impressive figure at the center without dramatizing itself, and lets its neighbors appear in a new light, shine in new glory.

Peter Zumthor, Thermal Bath at Vals, London 1996.

Peter Zumthor, Works Buildings and Projects 1979-1997, Baden 1999.

Several models in varying scales and constructed from different materials give a three-dimensional visualization of the individual stages of the design process. They have accompanied and explained certain planning phases and have been photographed frequently, sometimes for publications, sometimes for the archives, but also to assist in planning: like diagrams, these photographs anticipate certain spatial impressions without trying to define them precisely. As a supplement to the sketches and drawings, they capture very specific motifs and criteria of the design process. One detail that is stressed over and over in various photos of models by a special form of illumination is the use of daylight, which enters the room from the ceiling. The 1:50 scale, building-block-style stone model from the year 1991 - the so-called *Vorprojekt [Preliminary Project]* - already clearly demonstrates the aesthetic principle which was determined by the choice of building materials and the corresponding structural demands: it consists of Vals stone and uses a module system of *blocks* arranged at right angles, with each block supporting a cantilevered slab, Peter Zumthor calls it a *series of adjacent tables*. The gaps between the individual *table tops* form a network of lines across the entire roof surface. They are slits through the roof and ceiling, and as a source of light they play a special role in the photos of the stone model: like an endoscope, the camera peers into the interior spaces of this *geometric cave system* and discovers the light streaming in along the walls, emphasizing the corners of the room, tracing bright stripes down to the floor, and glinting off the simulated water surface. Despite the fact that there have been many fundamental changes since then, these photographs anticipate some very basic aspects that determine the spatial atmosphere in the finished building and which are created by the space-defining and load-bearing *blocks* with their roof slabs the illumination joints in between. From an engineering point of view, these illumination joints are also the building's **EXPANSION JOINTS / BEWEGUNGSFUGEN**, which are required to allow for the expansion of various building parts due to temperature changes and horizontal and vertical movement. *Illumination joints along the ceiling, water joints along the floor*: some expansion joints along the floor accept water, but not all the floor joints conduct water, some are lined with bitumen, all ceiling joints, by contrast, are illumination joints. The joints were *tested* in the different models and further developed to meet structural requirements, they are the primary motif that has remained constant along the entire design Journey. The intended idea and the achieved effect seek to define spaces with stone, water, and light. In addition to this, there are individual

series of sketches dedicated specifically to the system of joints, which are, for example, highlighted in yellow and orange: *here water or light moves* along the floor or along the ceiling.

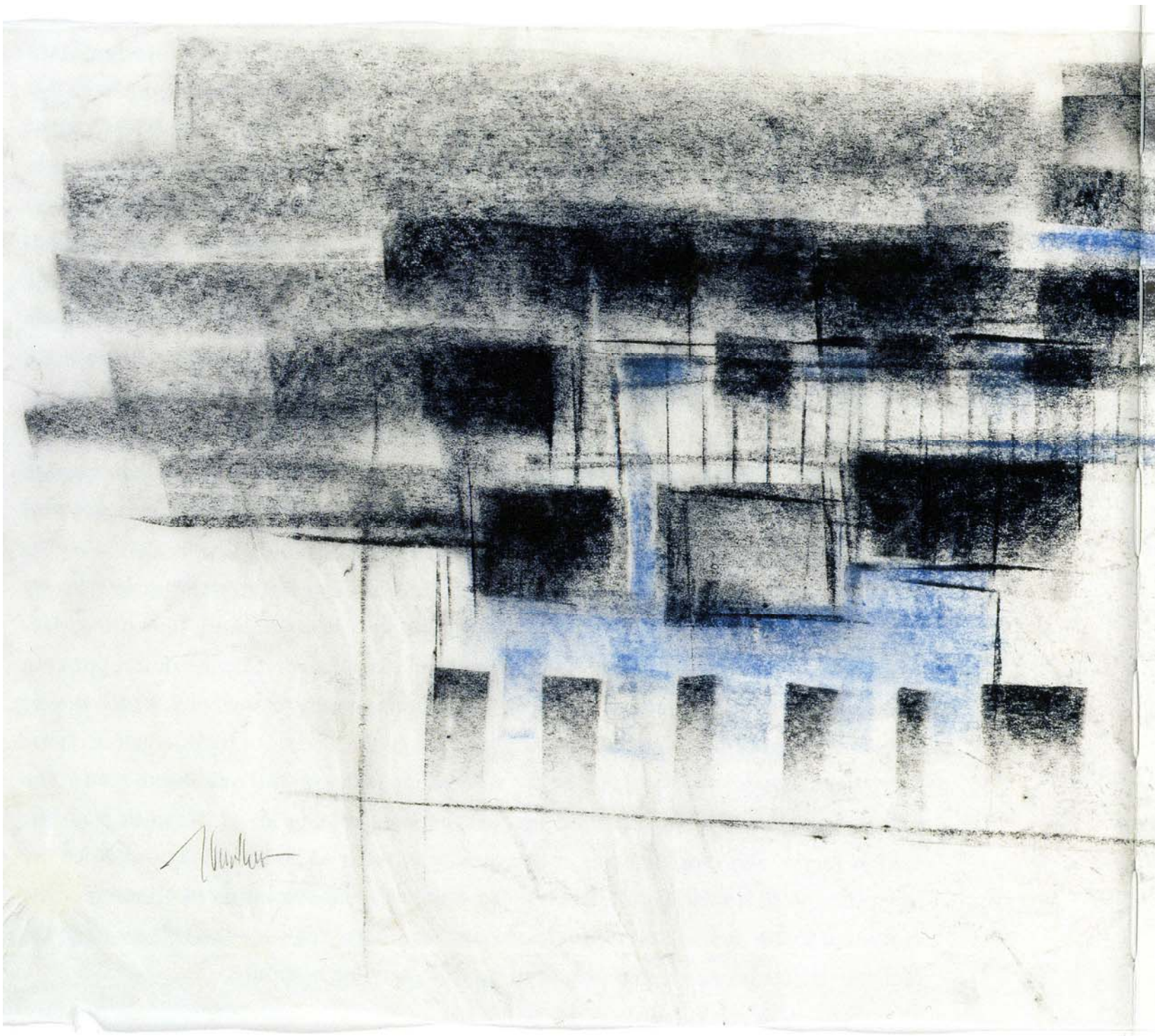
Slits in the model, dashes of color in the sketches, joints in the building: along the floor, water flows out via the joints, along the ceiling light flows in via the joints, emphasizing the corners of the *Indoor Pool*, tracing bright stripes down to the floor, and glinting off the water surface. In the grass-covered roof the structure of the joints is indicated by 28-centimeter-wide, horizontal glass covers that conceal beneath them a complex insulating mechanism for the six-centimeter-wide joints between the roof slabs. These glass covers frame the individual slabs, which have been planted with grass. Thus the illumination joints along the ceiling, the water-conducting and bitumen-lined joints along the floor establish essential aesthetic guidelines in the interlocking spaces and are at the same time the expansion joints in a complex building that is subjected to extreme temperature changes, whose walls in the wintertime may be exposed to temperatures of minus 15°C on one side and water temperatures of plus 42°C on the other. In the *Outside Pool* a vertical distance of only ten centimeters may separate wall segments exposed to temperatures of plus 37°C below, and minus 15°C above, the water level. This complex system of separation with insulation strips, sealing, and other measures was planned in numerous detailed drawings in order to prevent heat or cold bridges which could produce cracks and fissures in the masonry.

Peter Zumthor, *Thermal Bath at Vals*, London 1996.

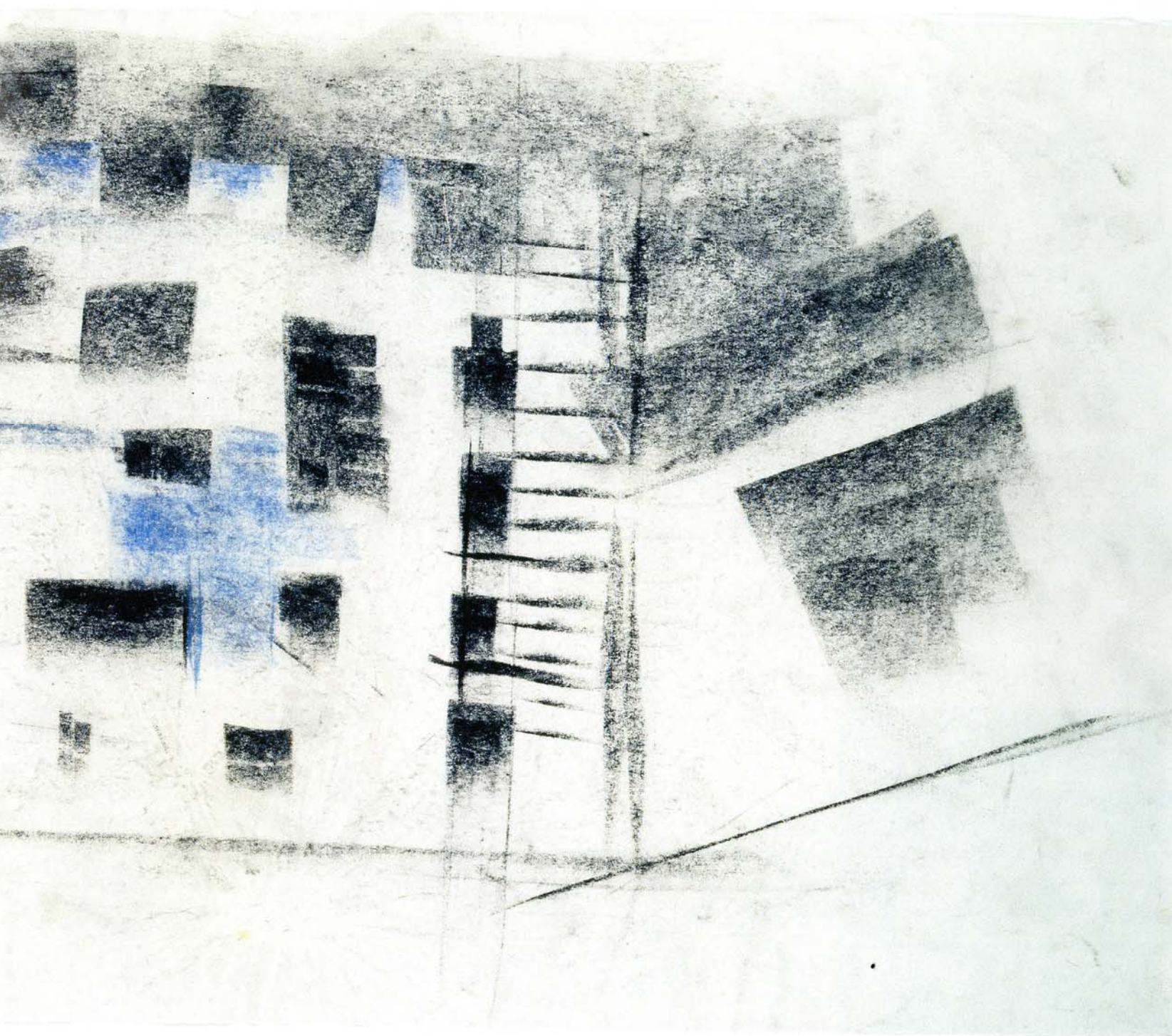
Martin Tschanz, *Das spezifische Gewicht der Architektur - Ein Gespräch mit Peter Zumthor*, in: *archithese* 5/96, Zürich 1996.

The amount of petals added as part of water treatment after the daily cleaning of the filter is up to the on-duty bath attendant, either two or three handfuls. The underwater illumination in the **FLOWER BATH / BLÜTENBAD** creates a special aura of magic: above the water level the concrete wall is black, below it white, the floating marigold petals shimmer golden yellow in the backlight. The fragrance that fills the room doesn't come from the water, it is in the air, filters in from behind a small metal cover on the wall, the administering of lavender oil in the vaporizing mechanism also takes place downstairs. Petals and pleasant aromas in public baths were common in the Middle Ages: the sweat bath was combined with bathing vessels, *rose blossoms and a fragrant smelling infusion of elder blossom, rosemary, chamomile, and sweet clover were added to the warm, clear water.* From the twelfth century on, bathing in the West experienced a kind of *renaissance* that lasted until the fifteenth century: just one of the pleasurable things the crusaders brought back with them from the holy wars. The *Flower Bath* has its own showering area integrated into its *block*. beyond this, the hallway leads around the bend to the pool of 33°C water. When one emerges from the *Flower Bath*, the petals shouldn't necessarily cling to one's body and swimsuit.

The sketches for the *Vorprojekt [Preliminary Project]*, already show faint lines along the mountain side of the structure, lines that in subsequent plans and the presentation drawings manifest themselves as a long tunnel, and somewhere in the middle it is cut off by the right edge of the page: this is the underground link to the main building of the hotel complex whose basement level serves as the entrance to the thermal bath. Thus there is no doorway leading into the building, the **ENTRANCE/ EINGANG** is hidden, the approach is a tunnel low, narrow, and black, a turnstile marks the point where the hallway begins, the so-called *Fountain Hall*, where along the wall on the mountain side warm springwater flows from five brass pipes, the wall opposite it is punctuated at intervals by five doorways. Inside the changing rooms, which are clad in dark, shiny wood, the path continues through a doorway vis-à-vis the entranceway, a heavy, black leather curtain separates and connects the areas. By now the act of undressing has become a theatrical experience, as if one were entering a stage - we are the actors and at the same time the audience: a long, narrow gallery overlooks the bathing level reveals walls and *blocks* of stone, allows certain lines of sight and denies visual access to the exterior, but the increasing daylight on the stones promises an opening toward the outside. The gallery is bounded along its outward edge by a brass railing, delicate stanchions are secured to the stone floor by cast bronze fixtures and held in place above by a flat brass handrail, they are in vertical contrast to the dominant horizontality of the stone layers. Like an outcropping in the mountain wall, the gallery lets the guest experience the topography, which is why it is referred to in the plans as the *Felsband*, or *Stone Ledge*, a parallel set of *Stone Steps* leads down to the bathing level - stanchions and handrail guiding the way. The *entrance sequence* is documented image for image in a series of sketches from the design phase, the cross section of the facility is reduced to the dark tunnel, to the *Stone Ledge* as a raised audience gallery, and to the steady outward opening of the mountain to the light. *I don't want to see any wet footprints yet* - the first guest in the morning hopes he or she hasn't gotten up this early for nothing.



M. B. ...

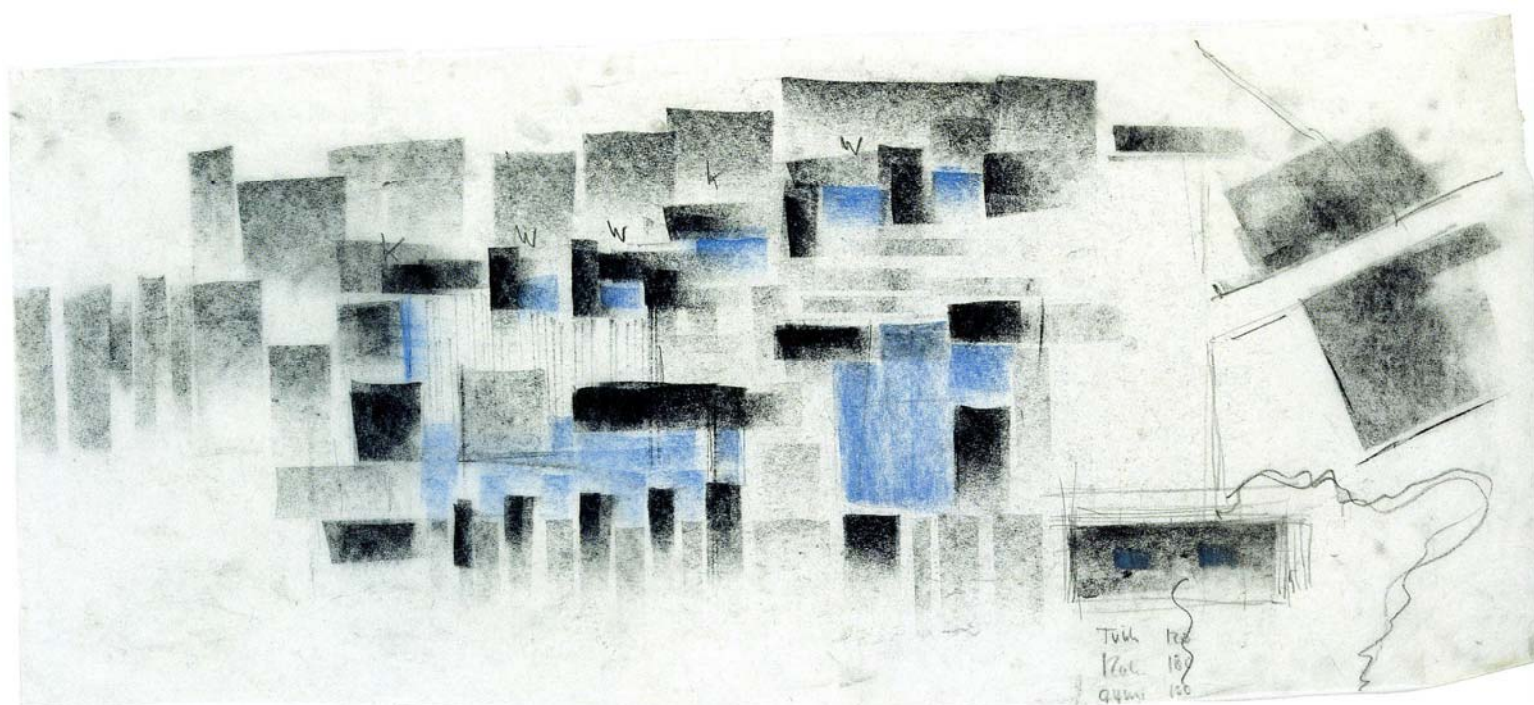


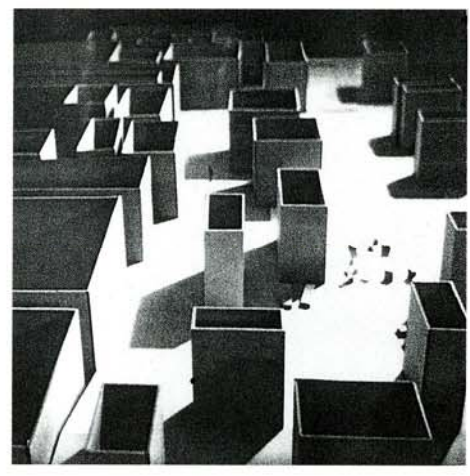
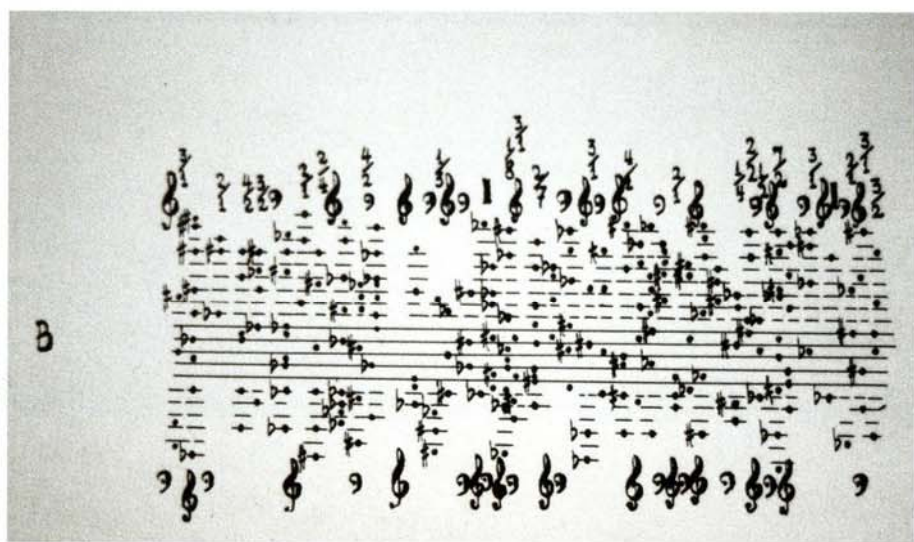
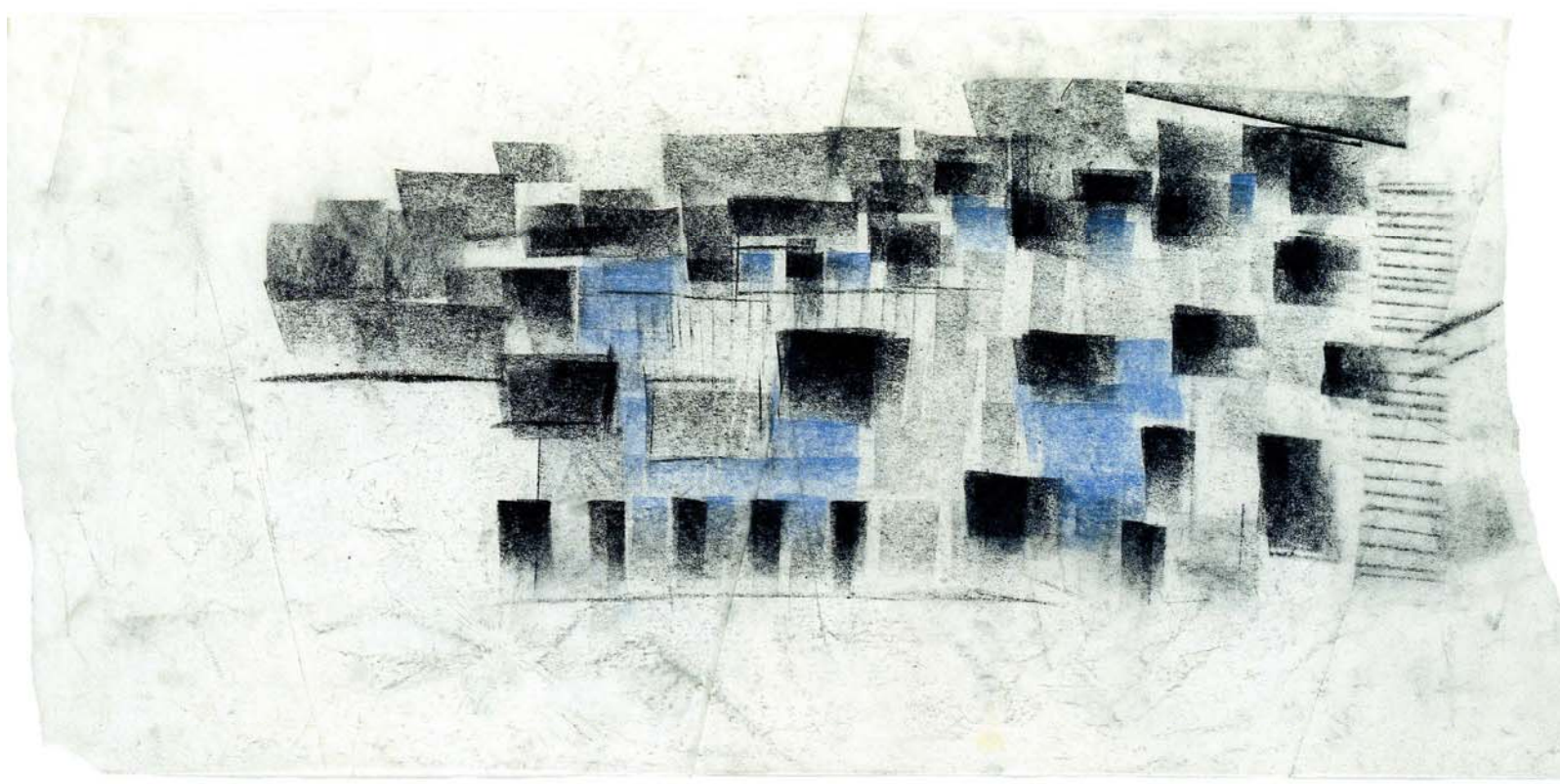
BLOCK STUDIES Quarry sketches: later we called them block studies; we drew many of them. Sketching was a playful form of research without architectural models. I remember feeling great - freedom in pursuing issues of composition, working them out on the basis of these block studies, giving them shape in spontaneous drawings and trying to understand them by talking about them.

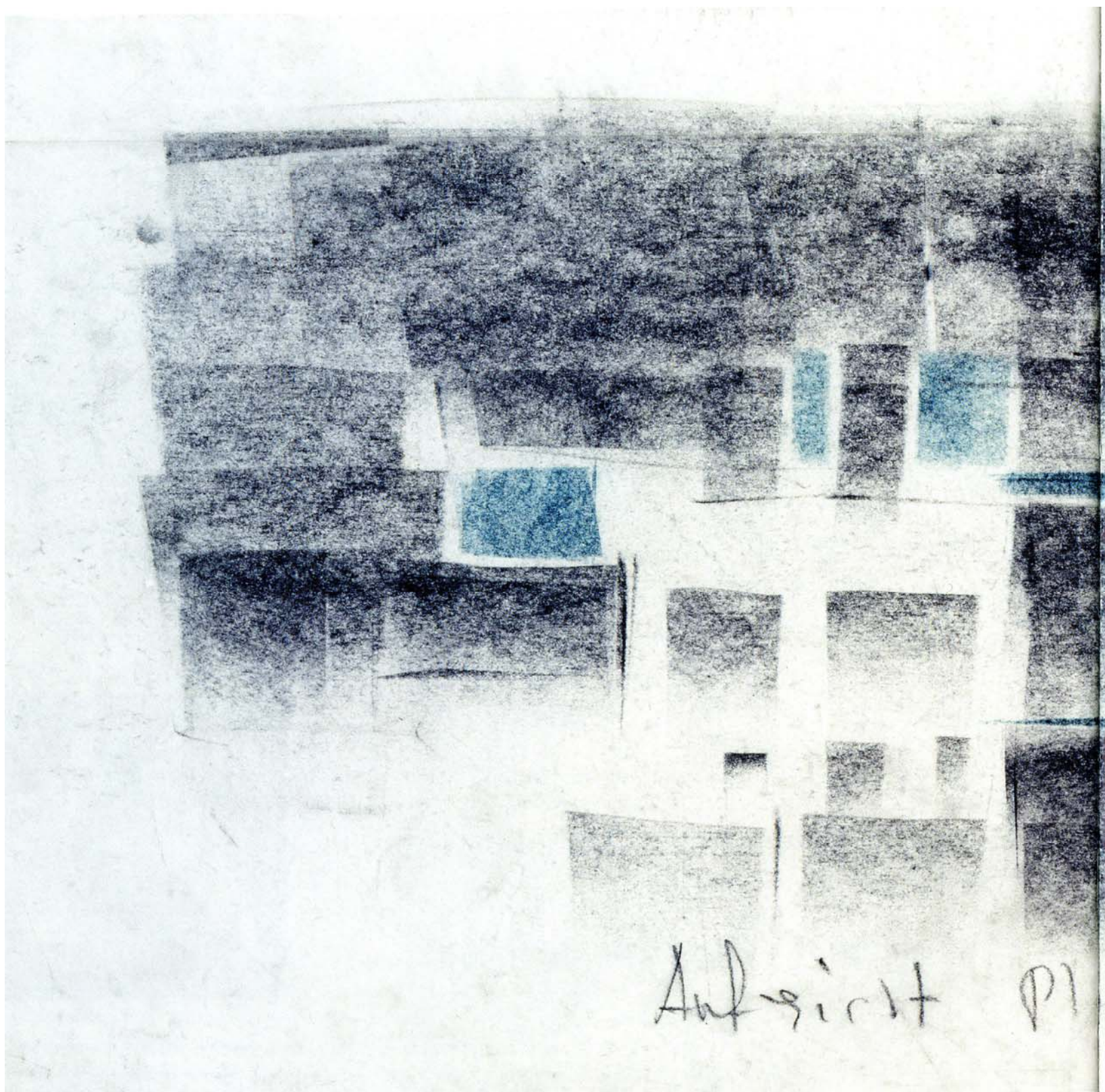
In spirit, we had started to break up our construction site, the slope in front of the hotel, as if it were a quarry, carving huge blocks out of it and adding others. Water began flowing and collecting in the crevices, cavities and gullies that emerged. Mass and hollow, openness and compactness, rhythm, repetition and variation - those were our concerns while drawing the quarry sketches. And in the process of mentally hollowing the mass, a large in-between space emerged, a vast, interconnected context, a spatial continuum that became more and more fascinating. Our bath, a huge spatial continuum, a room that I walk into and instantly experience as a whole even though I can never see it all at once. I have to walk through it, discover it step by step. I experience it as image upon image, as a sequence of spaces.

Similarities. Part of a score by John Gage shows the structure of a musical event on the temporal axis of notation: rhythms, compressions, intensities. The clipping reproduced here comes from a Sunday's reading matter.

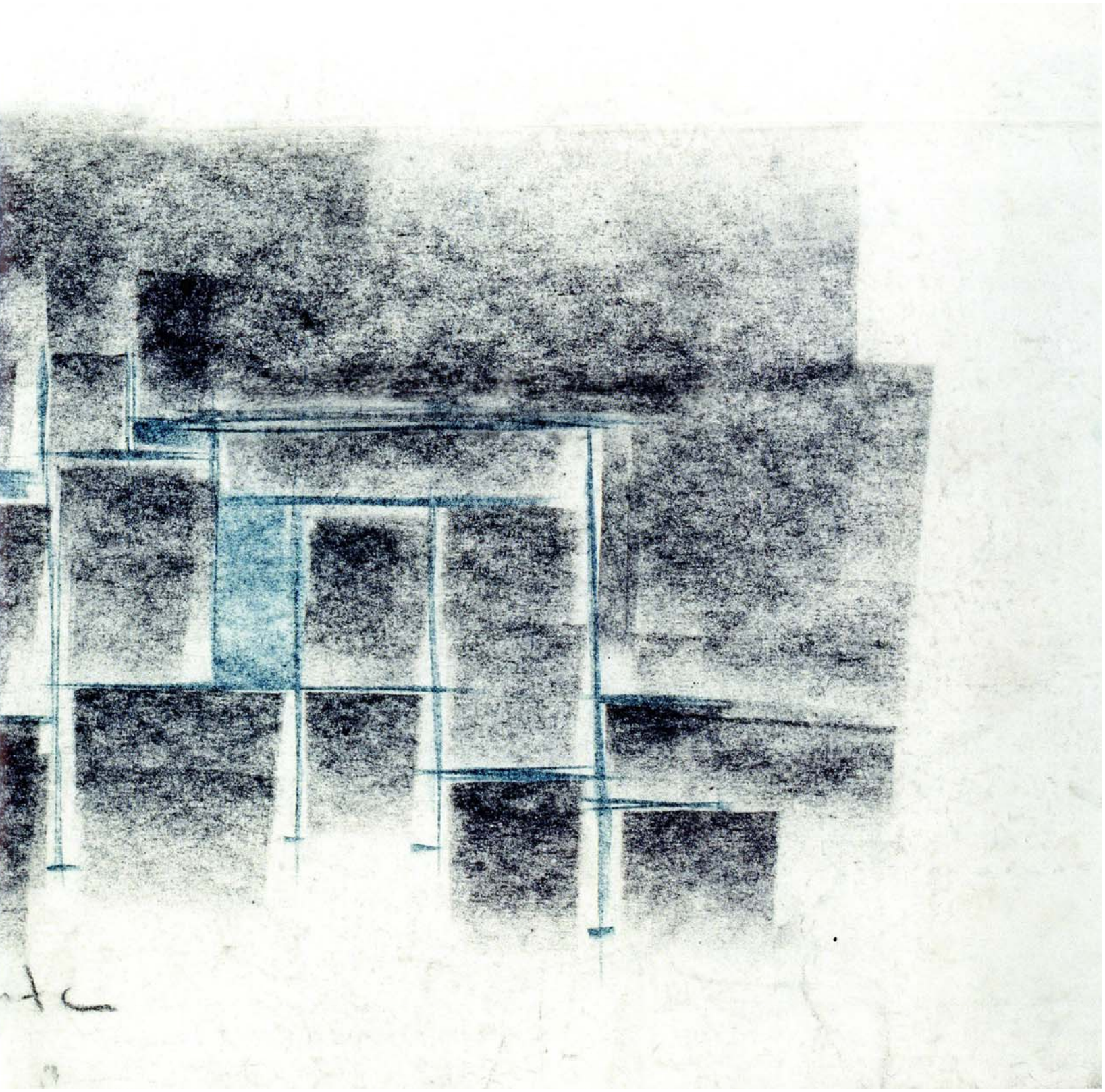
The thermal baths are actually built on loose material. You would have to dig much deeper to reach the bed rock. We knew that when we drew the quarry pictures. But two kilometers farther into the valley there is a quarry in operation, and in the same position. It fired our imagination although we did not know at the time that the thermal baths would end up being constructed entirely out of stone from the valley. Unlike our block studies - they knew.



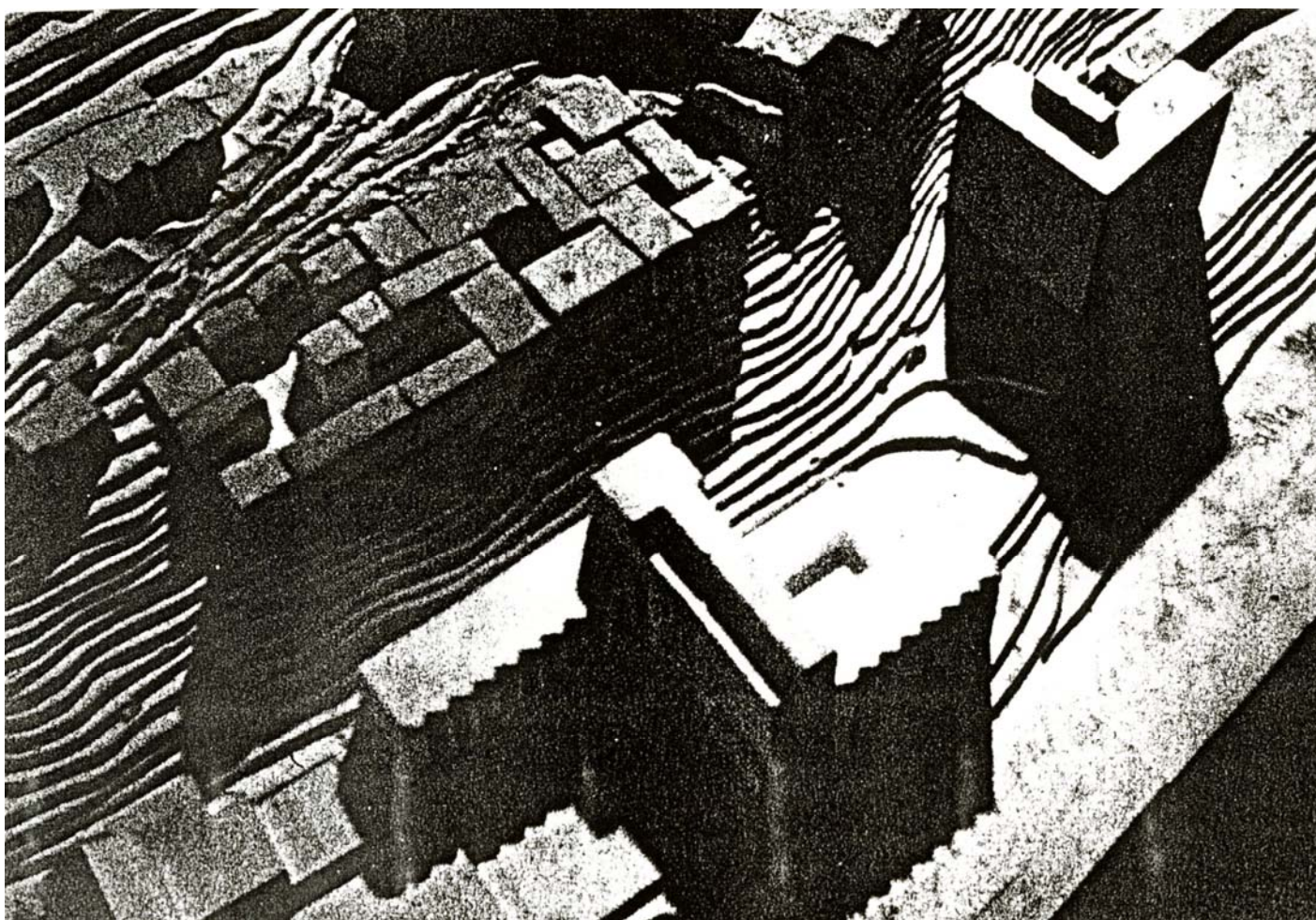




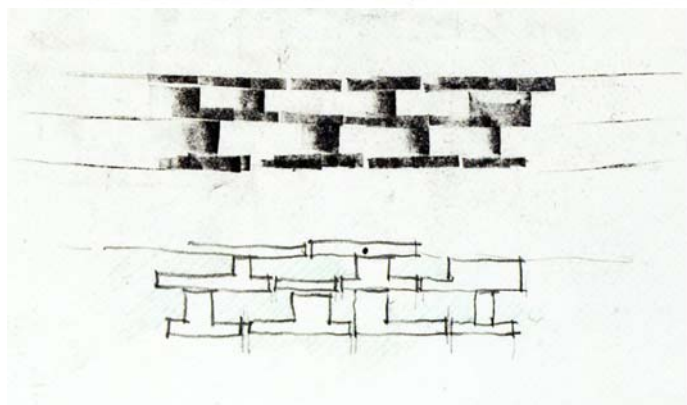
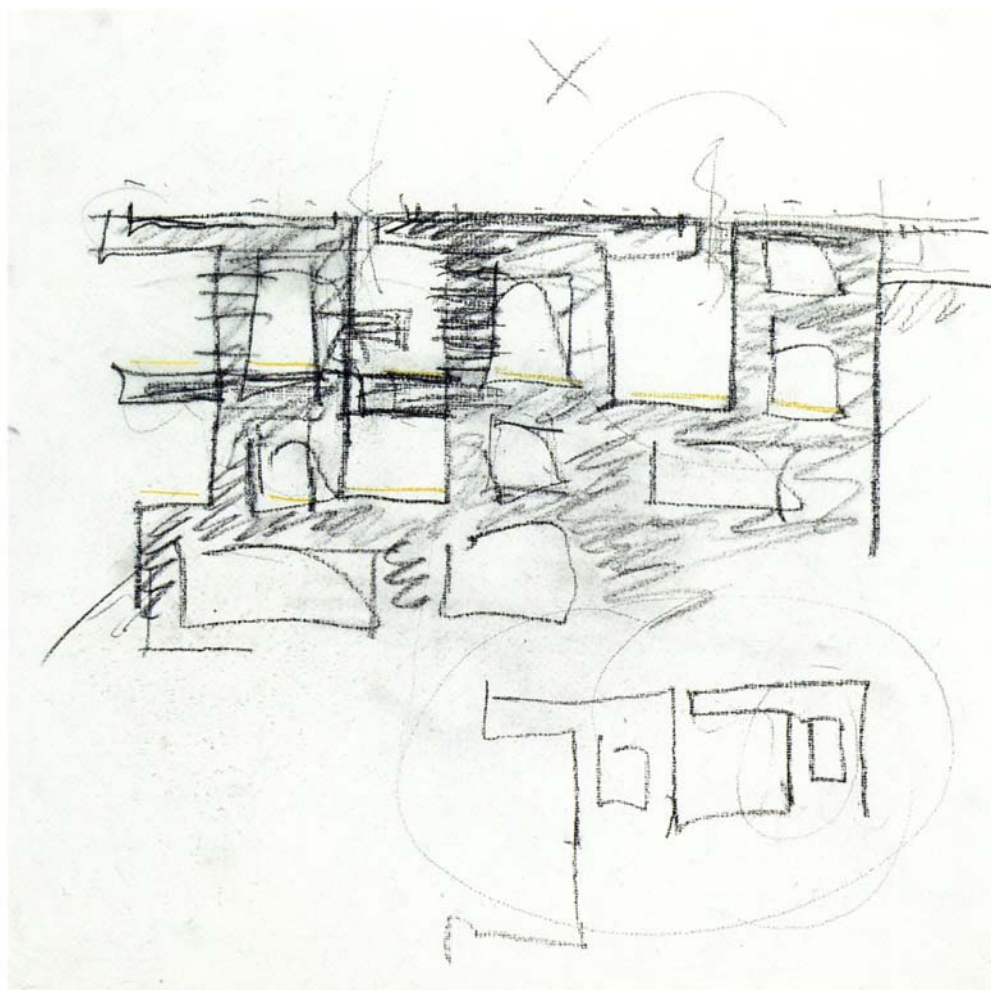
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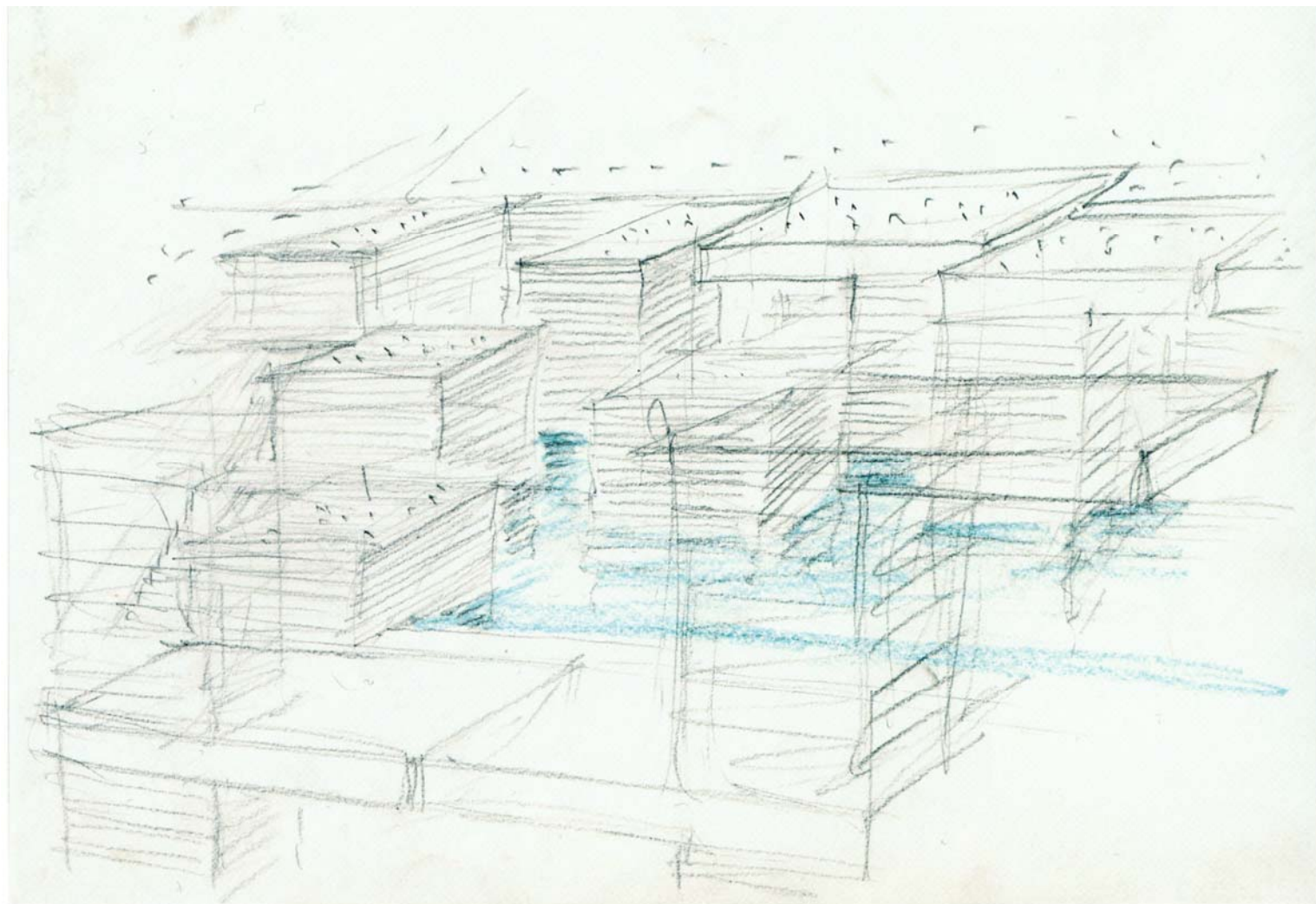
THE SECTION GROWS: STONE TABLES AND CAVERNS From the image of a quarry to the image of a building made out of stone. As seen in the small sketches to the right, the first idea consisted of cutting gigantic tables out of the blocks of our quarry, then joining them together and stacking them on top of each other in order to get the building that we envisioned. But then the image of a great monolith began to take hold, as shown in the top sketch to the right. Many cross sections, like this one, were sketched in the course of design meetings. Endless variations on the same principle: a gigantic monolith growing out of the slope, one single mass of stone, hollowed out from the front, from the top, from inside. What emerged were enclosed caves, cavities open from above or in front, processes of hollowing that led to mighty "tables of stone," great stone columns with cantilevered tops.

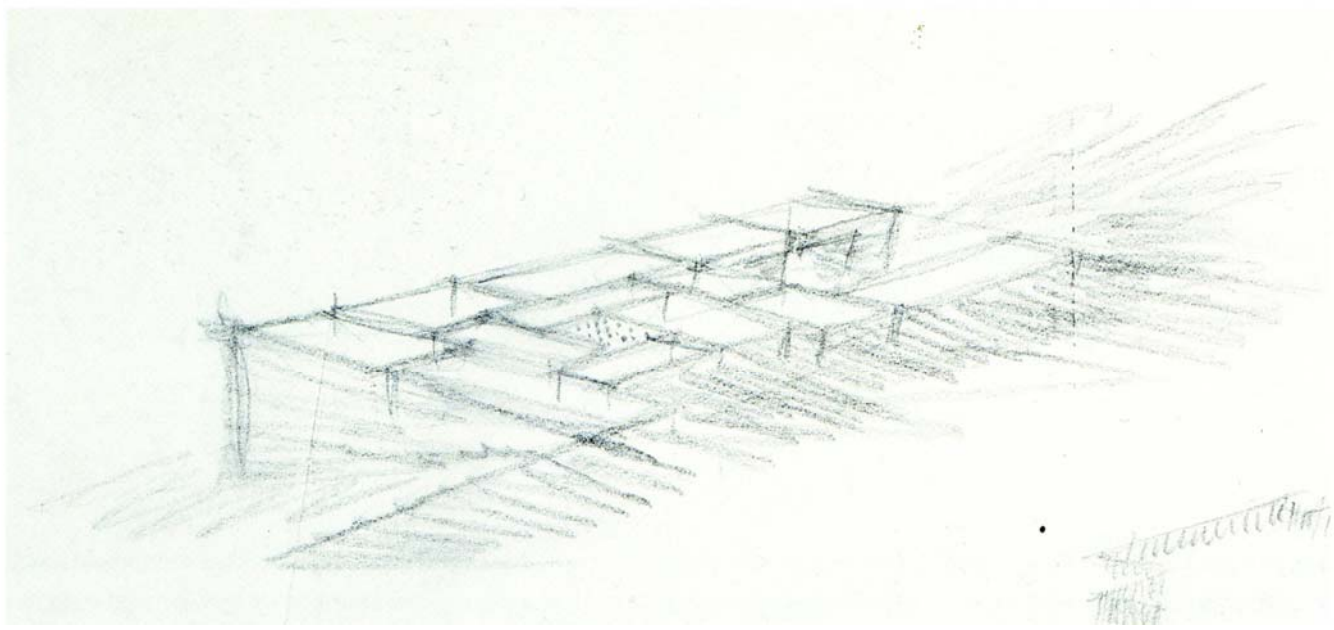
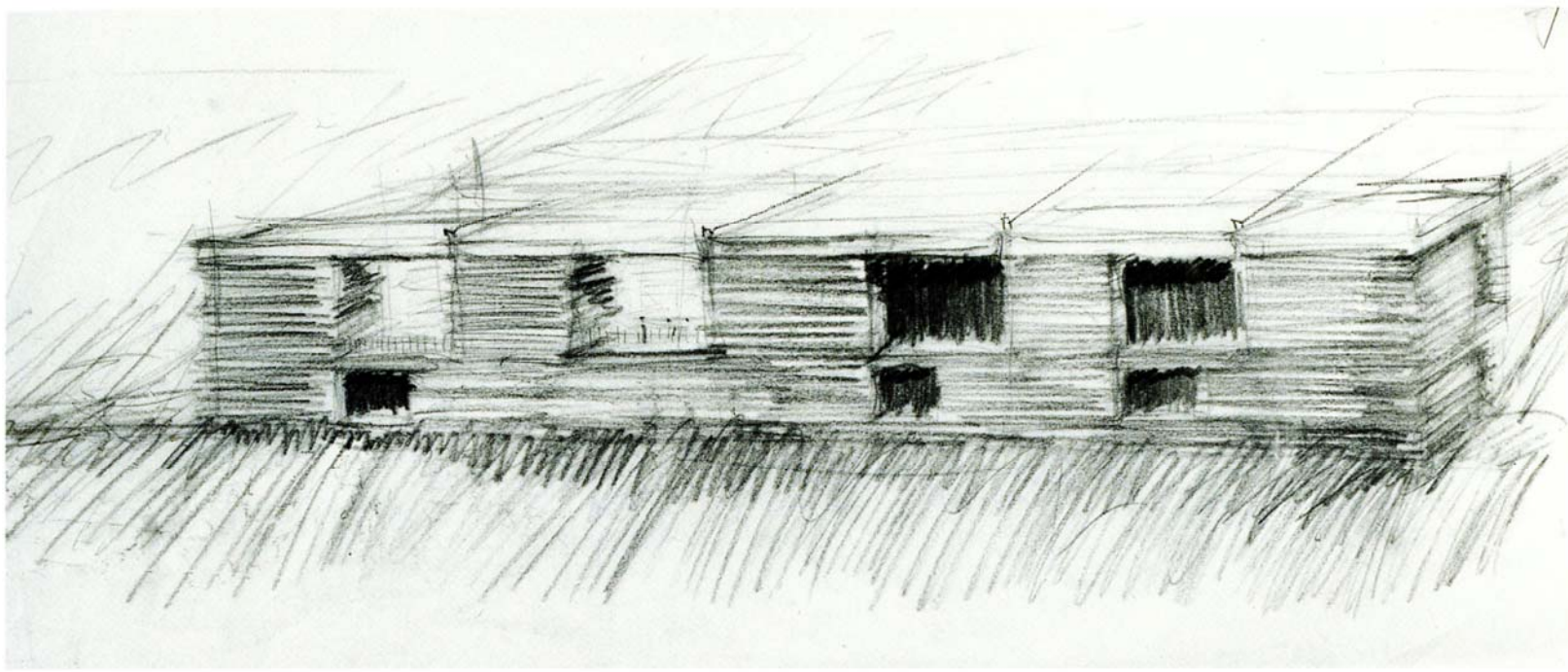


Stone tables, closed caves and a great hollow between the tables, open to the skies and the panorama view - these three elements are the basis of the spatial repertoire that we worked out for the baths. The quarry pictures underwent change; they began to acquire the shape of architectural structures and usable rooms.



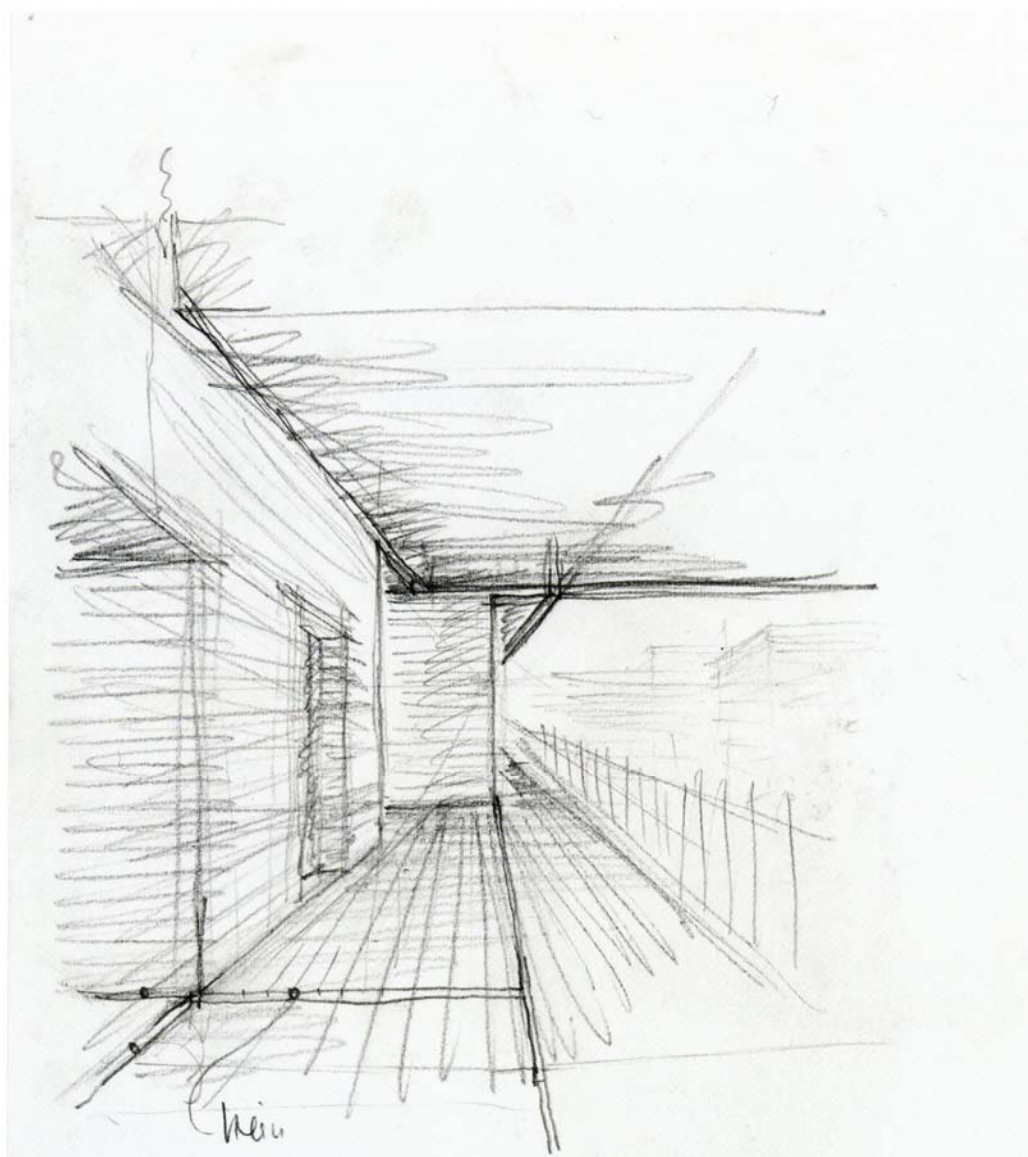
In the end, the back of the building retained forms reminiscent of quarries and caverns, a structure of blocks that looks as if it had grown out of the mountain into which it is interlocked. Seen from the valley, the building takes the shape of geometrically structured architecture, of a large cube set into the slope. Seen from above, the slabs of the stone tables present the picture of a precisely assembled mosaic, covered with the soft carpet of the rough, wild flower meadows of the valley slope. Grass grows on the slabs of stone.





In the structures later developed for the building, we took great care to articulate details that would express and reinforce the underlying theme of hollowing out and cutting up a great monolithic mass: allowing it to appear large and whole, emphasizing hollows, clearly articulating separations and cuts in ceilings or floors! The atmosphere inside the baths is faithful to the theme that had been chosen: mighty pillar blocks, large stone floors, vigorously cantilevered roof slabs, all placed side by side, heavy masses cheek by jowl but not touching. Next to them, cavities in the monolith, which one enters through narrow openings.

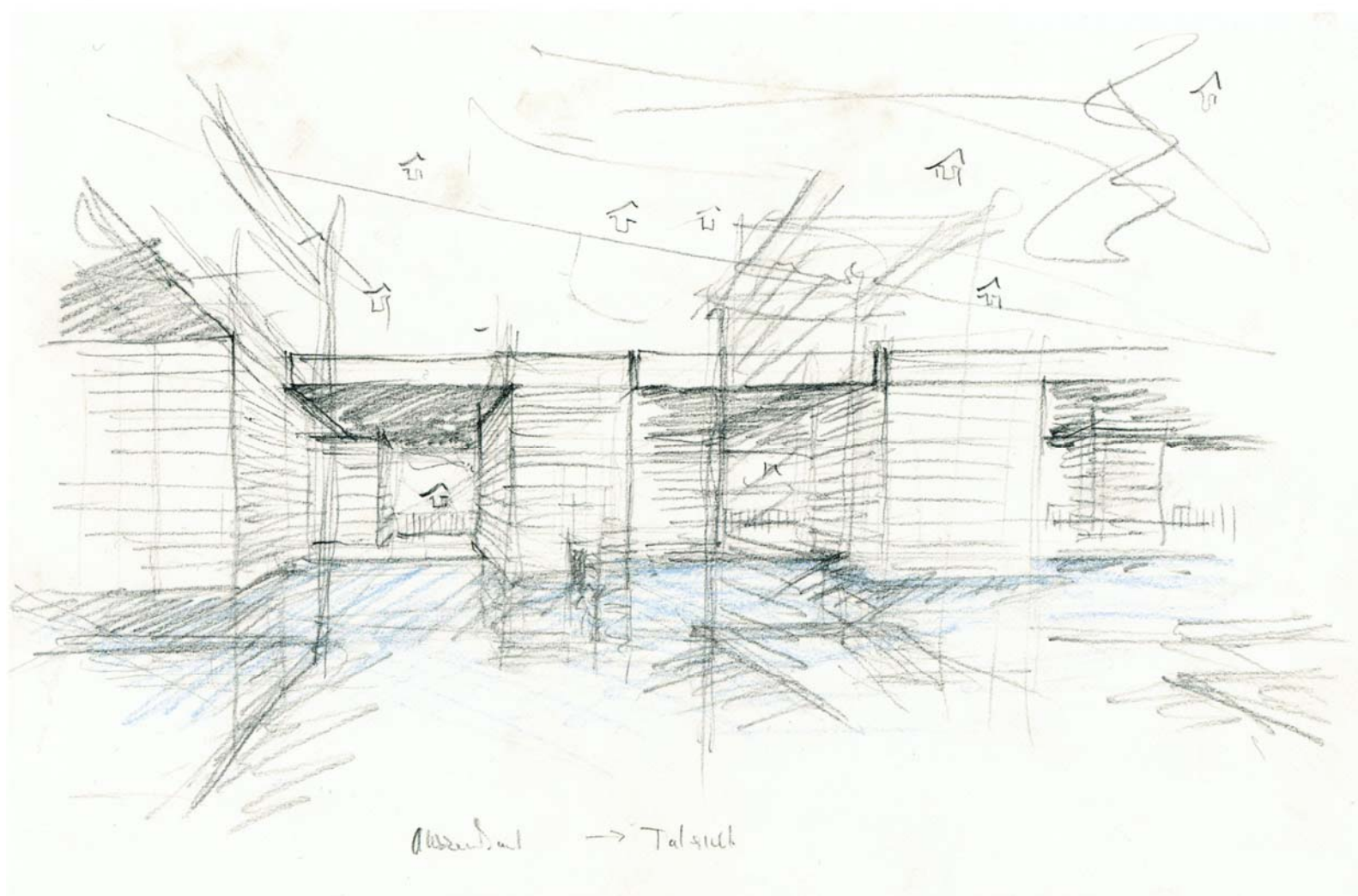
The sketches reproduced here show the detailing and the orchestration of the interior. The drawing at the top, a study of the access gallery, describes a typical situation within the configuration of large stone tables: a heavy ceiling slab stops just short of the solid block containing the showers, light filters down from above, the ceiling is supported by a pillar block to the right, not visible in the sketch and therefore indicative of the extreme cantilevering, while the floor in front of the doors of the block to the left is obviously the foot slab of this very same block; it protrudes and reaches back to the block of changing rooms in the background, whose narrow



canopy covers the access gallery where the roof slab of a pillar block, standing farther down in the baths, ends, creating a long crack of light, which ... and so on).

The description is telling: ceiling slabs, pillar blocks and foot slabs form a three-dimensional configuration in space: mass, lighting, cantilevering, loads. The masses are big and heavy, the spaces in between and the cantilevering enormous. And the meandering space between the blocks keeps pushing towards the light, seeking the view where the blocks frame the landscape and create vast pictures of the slope of the mountain on the other side of the valley.

The flank of the valley opposite the thermal baths, an immense, sweeping slope with small barns to store hay; rectangular pastures, some mown, some for grazing, full of boulders, scored and inscribed with paths and fences. The meadow carpet is lumpy. It covers the stony flank of the mountain.

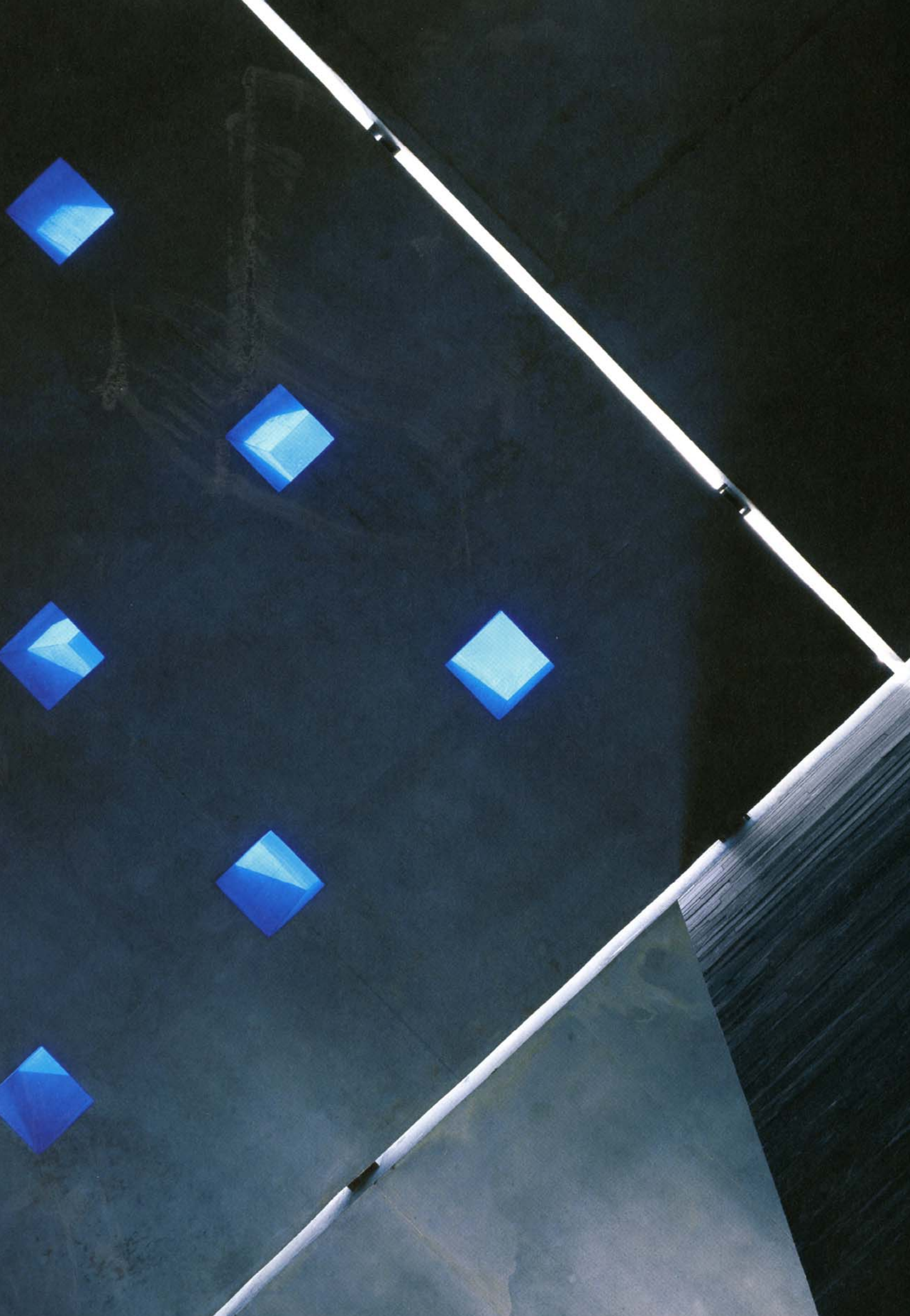


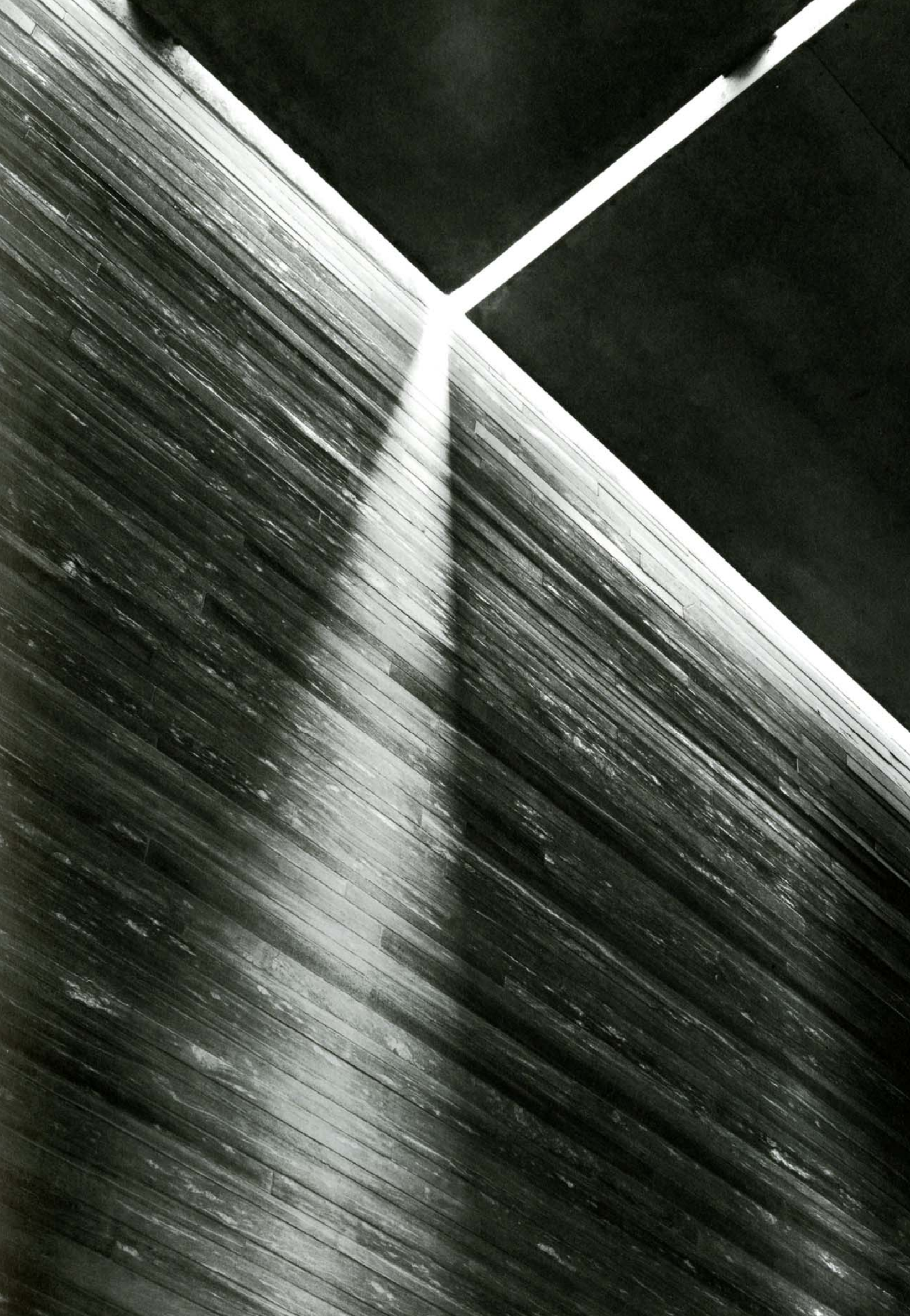














At a certain point during the course of a given design process there comes the *moment of truth*, says Peter Zumthor, it is the moment where the project *becomes real*: you pull out the first sketches again, question all your ideas up until that point, go back to the drawing board and virtually start *from scratch*, even if you already have detailed drawings. During the planning phase there were several design variations for the *Therme Vals* project: what in the end seems self-confident and unshakable on paper and in reality, wasn't necessarily part of the conception from the start, only revealed itself along the way, was discussed, discovered, and defined in the process of realization. The first sketches show a spatial fabric that indicates or suggests certain intentions that don't become clear until the final **DESIGN / ENTWURF**, as if the drawings had sensed or anticipated subsequent thought. Step by step, in countless sketches, the ideas of black, grey, and colored planes are subdued and are changed and varied in different areas - at times the transformation is nearly imperceptible.

Filed in the archive are a number of *reference pictures* intended to illustrate design ideas to the clients on the one hand and to show later at lectures about the design process of the *Therme Vals* on the other. To some extent they have simplified or spurred on the design process: a gateway motif by Ulrich Rückriem inspires *basic* types of stone processing - *drilling, cleaving, breaking, cutting, sawing, grinding*, the inside of a dam conveys the architectural power of this functional construction, avalanche sheds *brace themselves against the mountain*, the impressive thing about the Stonehenge complex is the stacking of monoliths, compositions by Piet Mondrian *dissolve solid planes into geometric abstractions*, a score by John Cage shows *the density of a field and the density at the edge*, grass grows between rocks, Vals stone slabs stacked and ready to be used to cover roofs: *Look at these roofs, that's how the water glistens in the pools*. And among this series of *reference pictures* there is also a place for the ad photo, the large-format black-and-white image (or is it a montage) of rocky islands engulfed by a sea - some twenty years ago this was how the *Vals bottling plant* called attention to itself with the caption: *The Vals valley 80 million years ago*, and the dark mountain ridges in the sea of fog are reminiscent of an *archaic landscape, like in Antarctica*.

The design process thus becomes a transformation process, the so-called idea continues to evolve by being transferred to different surfaces, using different materials: the

sketch assumes different colors on different types of paper, the model takes on different forms in different scales with the help of different materials: clay, Styrofoam, plaster, cardboard, wood, stone. For the visualization of the *Vorprojekt* [Preliminary Project] at the presentation before the town council in Vals, not only did he prepare a variable 1:500 scale study model with its environs but also a variable 1:50 scale stone model of the bathing level made of Vals blocks. The stone blocks were arranged *in a steel basin filled with water*, the bright blue of *the antifreeze* added to the water gleaming from the pools and joints. This model of the *Indoor Pool* has been shown internationally many times and photographed for various publications. Despite all subsequent alterations, these photos anticipate the spatial atmosphere: *stone, light, and water*, reflections and patterns of color. Usually the best *received* presentation models are those made of wood, in Vals, too, where prior to this, gneiss had only been a common building material as far as roofs were concerned. This meant that confidence in this building material had to be won on all sides and then strengthened.

In the phase of translating the first ideas into initial sketches and in the subsequent phase of transforming drafts into models and plans, the key words were *mountain, stone, water*. In this context Peter Zumthor writes: *Building in stone, building with stone, building into the mountain, building out of the mountain, being inside the mountain – our attempts to give this chain of words an architectural interpretation, to translate into architecture its meanings and sensuousness, guided our design for the building and step by step gave it form*. The topography of the location and the character of the surrounding landscape are the most striking factors influencing the journey, as well as the demand that the new building should communicate the feeling of *being older than its existing neighbour, of always having been in this landscape*.

There are numerous, clearly distinguishable design phases: the initial drawings from 1986 and 1987 document a *completely different project*: in conjunction with the construction of a new bath, the plan also called for expanding the main building of the hotel facility. The *Vorprojekt* of 1991, developed in countless sketches and presented as color, silk-screened plans, concentrates on the bath alone, the so-called *solitaire*. *And so the new design is born: stone blocks and tables*, the supporting piers gradually become room boxes. The organization of these rooms, however, continues to reflect the facilities of conventional baths and the specifications of the project manager at the time - *warm water grotto, cold water grotto, grotto with natural water jets*,

Kneipp treatment, whirlpool, massage jets, solariums - until the client decides to build the bath according to the architect's ideas and let him design the rooms as he sees fit, *at which point the project manager leaves*. In early 1994 the room sequence becomes fixed in a north-south direction along the contour layers. Toward the mountain, the composition is demarcated by black, block-like planes, which define the borders of each of a series of blue areas which are arranged at light angles and which push outward one block at a time like a series of steps: the letters representing the German words for warm, cold, water, and caverns alternate, producing a series of six Ks and Ws: *Warm-Kalt-Wasser-Kavernen-Rücken* - as this design phase is called.

Peter Zumthor refers to the first series of sketches for the final design as *Steinbruch-bilder [Broken Rock Sketches]*, they are almost monochrome in black and grey, thick marks at right angles made by shorter and longer sections of broken pastel crayons on paper, pushed, arranged, set. After this series come more *block studies* in blue and black, in most cases the blue symbolizes the water surfaces, the *blocks* are load-bearing piers. In an earlier variation, three piers were to have formed the boundaries of the *Indoor Pool*, in subsequent stages and ultimately in the final building, they become four rectangular piers approximately twice as long as they are wide and arranged in a *pinwheel* pattern. Gradually spaces emerge that will end up in the built project: an *Indoor Pool*, an *Outdoor Pool*, and the *Stone Steps*, a long stairway that runs parallel to the ledge in the rock face. The stairway connects the *Indoor Pool* with the changing rooms, in the first design phase the latter are connected to the entry zone in a conventional way, forming a comb-like entrance into the continuous spaces between the piers and pool. Only gradually are they pushed up against the mountain wall, upgrading them to an important element at the back of the building, and now the room sequence also extends in a west-east direction. The building grows *out of the mountain and into the light*.

More elaborate sketches create a linear order between the *blocks*, use color to emphasize lines, give more information through words, concepts, or numbers, go into detail without revealing too much, here different functions of the design are examined and indicated through color coding. Yellow and orange, for example, highlight the joints: *here water or light moves* along the floor or along the ceiling. Yellow high-lighted outlines and corners indicate what is referred to in one sketch as *Ordering Lines - multiple definitions*, in parentheses the comment: *vanishing point repeats*

itself. The yellow marks in his sketch signify borders that apply to various levels, they are intended to *streamline the composition and hold it together*. The yellow color also emphasizes the structural *principle*, piers stress the direction: *Principle/Rule* - the blocks are arranged like a *pinwheel*, the dynamic surfaces in between are *interlocked in a staggered pattern*, the *spatial interlocking* of the structure is like a *zipper system*, the *network of open spaces* resembles *woven fabric*, the *large continuous space between the blocks* is *built up sequentially*, it either *ensures or denies the view*. The *spatial continuum* is intended to *emphasize each space* differently: the small, intimate rooms in the load-bearing, stone *blocks*, the large open areas in between. Peter Zumthor calls this an *orchestration of spaces*. In the course of this process, the *blocks* have been given a role in addition to their primary load-bearing task, they are meant to contain spaces, thus in the plans and final building some of them have the word *stone* in their names along with a reference to their purpose: *Drinking Stone, Sweat Stone, Sounding Stone, Shower Stone*. In the end, the design is reduced to the materials stone, light, and water. Using charcoal and pastel crayons, pencil and colored pencils, these *blocks are drawn and rearranged a thousand times*. Some sketches combine the floor plan and plan view, show the structural organization of the supporting piers and at the same time *how meadow and roof merge*, show the *roof lines along which daylight enters the indoor space below*. The joints are tested in the models, *water joints* in the floor, *illumination joints* in the ceiling. In the indoor space the blue color symbolizes the water, on the roof, the light, numbers in blue water indicate the temperature of different pools. One series of sketches documents spatial studies and the *interiors of the blocks*: variations of individual areas are visualized in black pencil, drawing by drawing the staging of entry situations and path configurations are tested, like a frame-by-frame graphic version of a screenplay. A few touches of color convey something of the mood to be expected, of the intended atmosphere, others mark the placement of artificial lighting.

And though much has changed in the course of the long design phase, what was present from the start was the *table construction* with the blocks and their slab roofs and the *special slab suspended above the Indoor Pool*. And from the start as well, the supporting structure addressed its material, the local stone - slabs of Vals gneiss. *It's always the same stone, but the longer you look at it, the more differentiated the individual stones become: fine-grained, schistose, sometimes glimmering, shifting from a greenish to a bluish hue*. From time to time during the design development there

were plans to use other, *foreign* stones, and it took awhile before the design was able to focus completely on the local stone, on the diversity of this stone, and on the diversity of its surfaces, which vary depending on how they are processed and reveal an ever-changing character: *broken, cleft, or ground*. It took some time - Peter Zumthor says - *before I could convince myself, and ultimately the others; that an entire bath could be built with this stone*. Many series of sketches document the planning of how to layer the stones - for the final version this is specified in a 1:20 scale diagram, the so-called *Steinschichtenplan*, or *stone-course-laying scheme*.

In 1995 detailed *execution plans* and *publication plans* are completed - the noble versions of the all-knowing *block studies*: grey represents the water in the pools, black is for the concrete and stone walls, black also stands for the mountainside from which the building emerges, from which it seems to have been carved, an interaction between positive and negative. *The meandering internal space with its sunken springwater basins and gulleys, must appear, we imagined, as if it had been chiseled out of a homogenous stone mass* - Peter Zumthor writes. He calls a series of sketches done at the time of the *Vorprojekt* the *Birth* of the design: the structuring of the different areas using load-bearing *blocks*, the flow of spaces (or is that light, or is it water?) in these zones, a drawing reduced to two colors with a grid and a few numbers. Any text can only trace this thought process by taking a circuitous route.

Peter Zumthor, Thermal Bath at Vals, London 1996.

Peter Zumthor, Works Buildings and Projects 1979-1997, Baden 1999.

Peter Zumthor, Thinking Architecture, Baden 1998.

Peter Zumthor, Das Mauerwerk der Therme Vals, in: Hotel Therme Vals (ed.), Stein und Wasser - Kultur Winter 2003/04, Vals 2003.

Peter Zumthor, Atmospheres - Architectural Environments - Surrounding Objects, Basel-Boston-Berlin 2006.

The spatial arrangement of the bathing areas does not prescribe any particular course, the continuous space allows the guests to look around and explore on their own. Each individual *block* contains *its own world* hardly discernible on the outside, the entrance usually leads around at least one bend, thus the curiosity of the guest determines the course he or she chooses. Only the **FIRE BATH / FEUERBAD** gives itself away on the outside, the color glows from within, filling the entranceway and promising to do justice to its name: the concrete wall is red, the temperature of the water is 42°C, the glowing red illumination inside the glittering grey stone seems to know the secret of the hot zones deep within the mountain. In all cultures hot baths are associated not with cleansing but with relaxing, or actually their cleansing is not of a physical but of a mental nature, one usually practiced as a communal ritual, for example in the *alveus*, a hot water vessel in the caldarium of a Roman bath, or in the Japanese *o-furo*, a room-sized tub meant to accommodate a group of people, in public baths it is called *sentō*. The water temperature is 45°C, washing the body takes place in an anteroom prior to entering the tub. Some aspects of this tradition can be found in the *Fire Bath* as well, *it relies on the silent, primary experiences of bathing, cleansing oneself, relaxing in the water; on the body's contact with water at different temperatures and in different kinds of spaces; on touching stone*, writes Peter Zumthor. Every perception inside the bath seems intensified, one's sense of hearing as well, or do higher temperatures amplify sounds? Or is it that they heighten the mood?

Marga Weber, *Antike Badekultur*, Munich 1996.

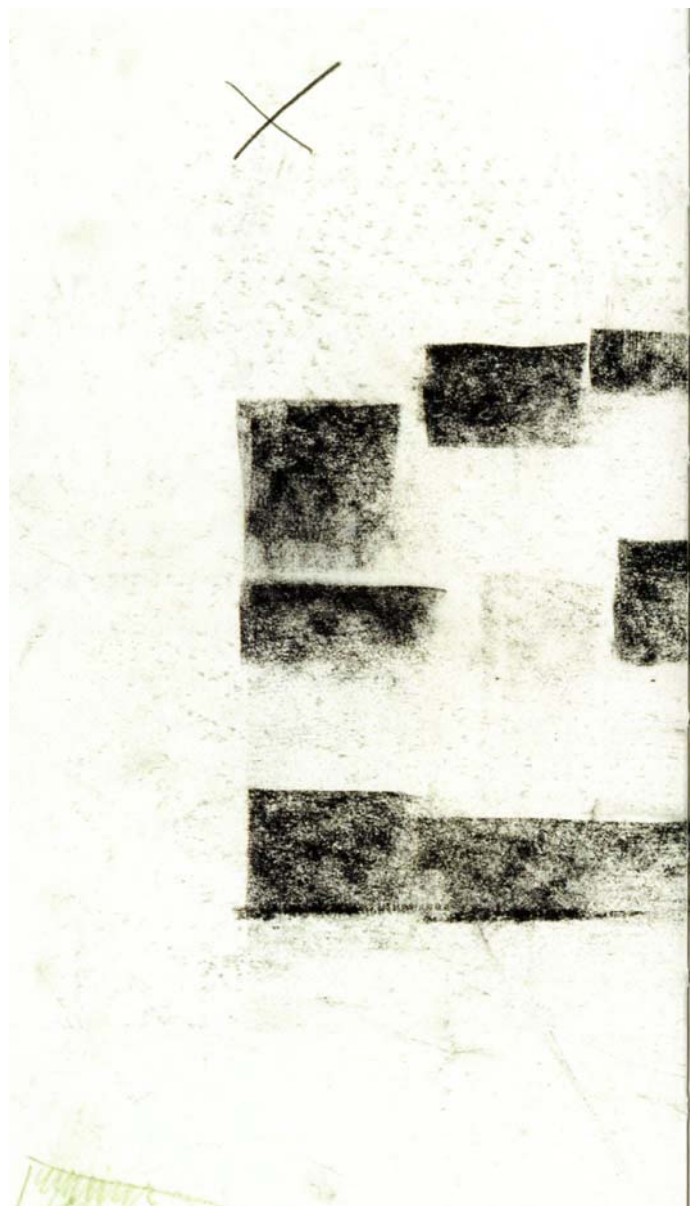
Norbert Honnuth, Manfred Bobke (ed.), *Japan*, Hamburg 1992.

Peter Zumthor, *Works Buildings and Projects 1919-1991*, Baden 1999.

THE FLOOR PLAN GROWS: GEOMETRIES You can see it in the first drafts: in the beginning there were blocks. But the space in between them was there as well, creating many places where certain functions instantly nestled: pools of water, hot and cold baths, runnels, waterfalls... The work on this space - we call it a meander - played a substantial role in shaping the blocks. But the blocks owe their shape not only to the spatial wishes that the meander had to fulfil. The bath is also conceived in terms of the blocks. Above all, as a construction. But also as a composition.

A feel for the weight and distribution of the blocks on our site takes its cue from the block studies and early models: large blocks, closely placed with narrow interstices, merge into the imagined rock cliff of the mountainside; on the side facing the valley, the stones weigh less and the spaces between the blocks become larger. The black plans show the outcome on pages 100/101: large, longish volumes of stone linked to the mass of the slope form the back of the baths. A pattern of smaller blocks, interwoven and balanced in scale, faces the valley.

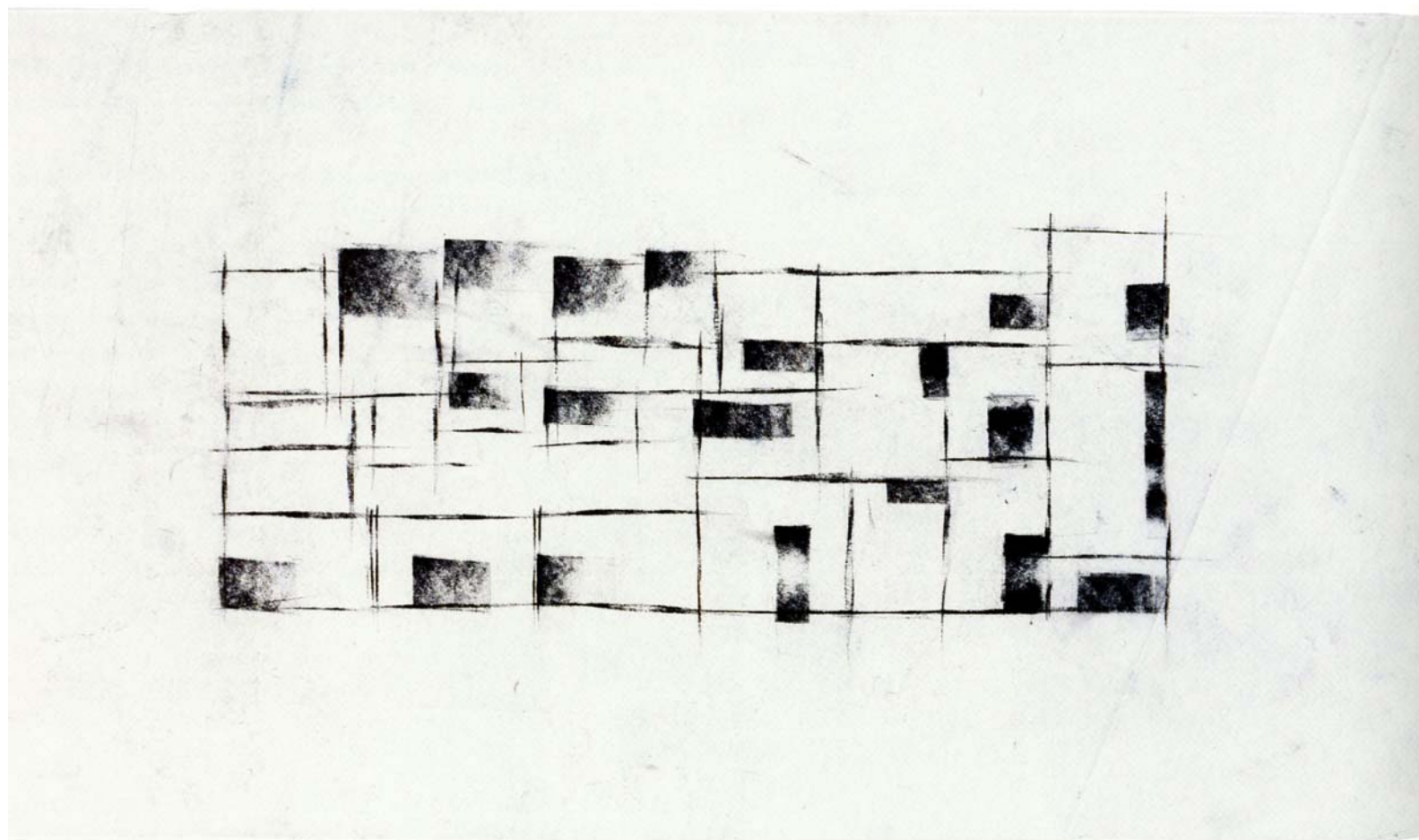
While working on the design, we devised geometrical rules for the configuration of the blocks. The initially free placement of volumes began to obey certain laws.



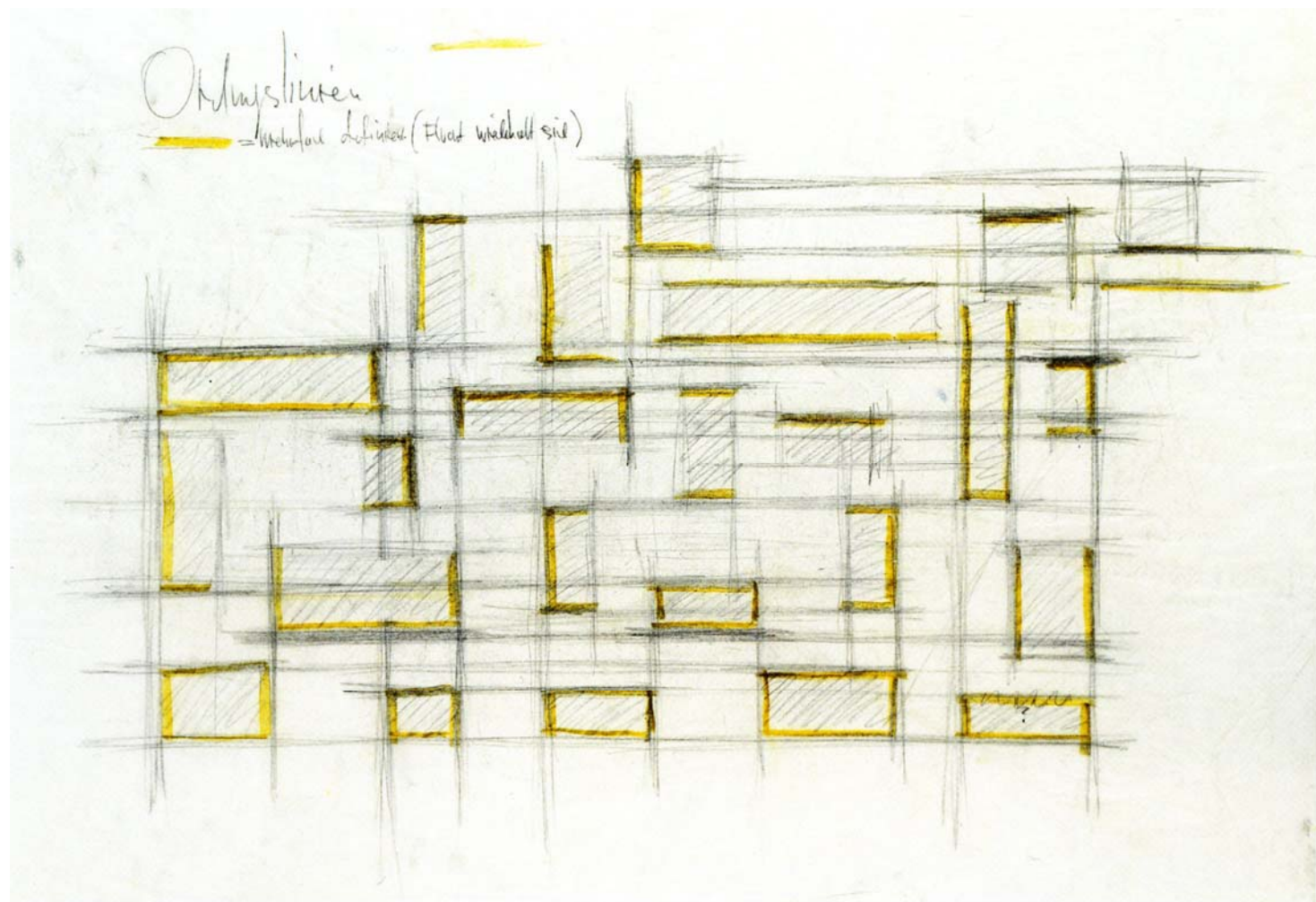


One important rule is seen in a sketch by Thomas Durisch, pictured above. It defines the relationship between ceiling slab and pillar block: the ceiling slab of a stone table must always be placed flush with the pillar block on one side or at a corner. Since daylight penetrates the joints between the tables, those blocks that are flush with the edges of the ceiling have direct daylight from above: twice a day - if the sun is shining - light at different angles washes the wall of a block all the way down to the floor.

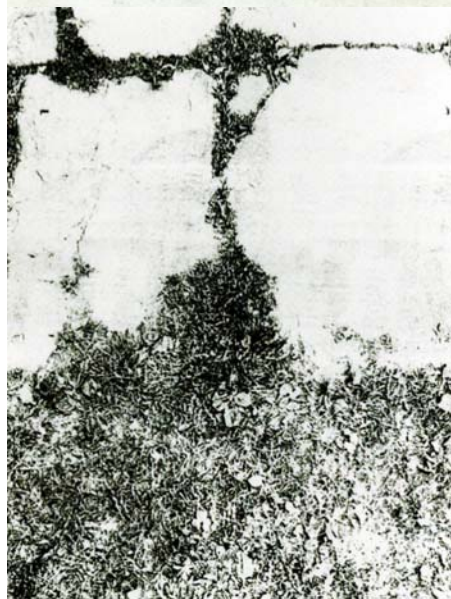
The sketch pictured to the right works with an invisible system of ordering lines that run at right angles to each other and lend cohesion to the composition of the floor plan: every pillar block marked yellow on one side in the drawing is aligned with the side of at least one other block. In order to determine the lines of cohesion in the composition of the final floor plan, we started with the free-hand studies of the blocks, looking for places of spontaneous correspondence and reinforcing them by shifting single blocks or walls to the



lines we had discovered. When we did that, we noticed that there was a slight jolt in the tension of the composition that went through the entire field of blocks. But not everything is arranged in this way. We tried to find the right balance between relaxation and tension, between freedom and system. At one point, I remember taking a renewed interest in the composition of Piet Mondrian's paintings.

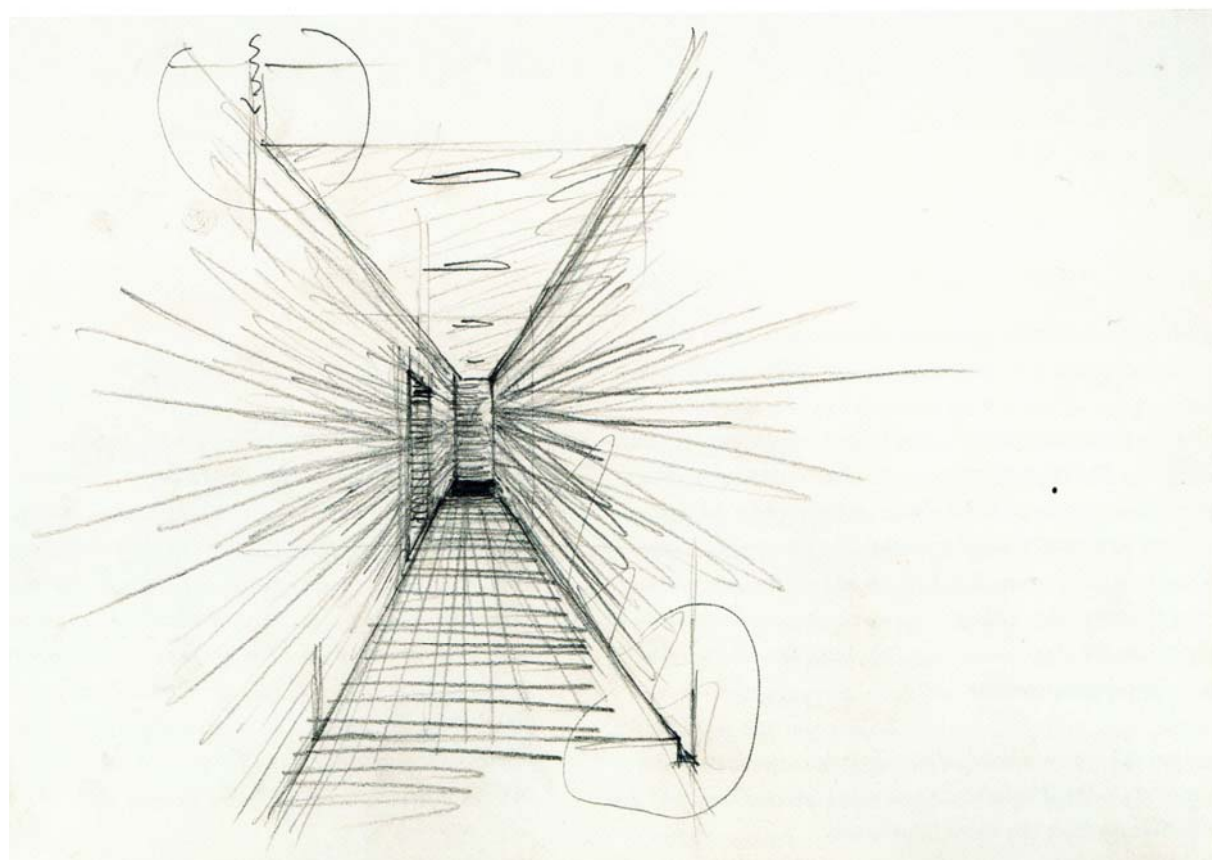
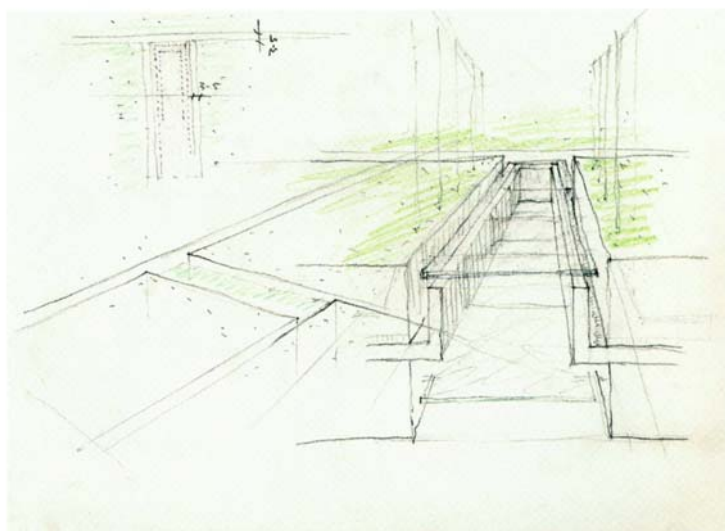


THE JOINTS Grass grows in the cracks between the stones. The joints were a concern from the very first draft. There were joints on the ground in the earliest quarry pictures and block studies: notches, runlets and depressions, grass growing in them, with water from the slope and water from the spring. And the first sections we envisioned already had seams of light, cuts in the stone through which light penetrates from above, light filtering through thin cracks.



Seams of light. Gradually, in the process of shaping the stone, we learned to distinguish between *lateral light* entering the building from the valley, which is not specifically perceived as daylight but rather as a panorama view; points of light from traditional *skylights*, which we reserved for the indoor bath; and a special kind of *atmospheric illumination* created by slits in the ceiling, through which shafts of light wash certain walls. Since the slits are a mere 6 cm in width, the ceiling joints between the tables are not conventional skylights. Very little light is visible in these joints themselves. The light is perceived primarily as an illumination of the walls and the floor, which, like a sundial, traces the course of the sun.

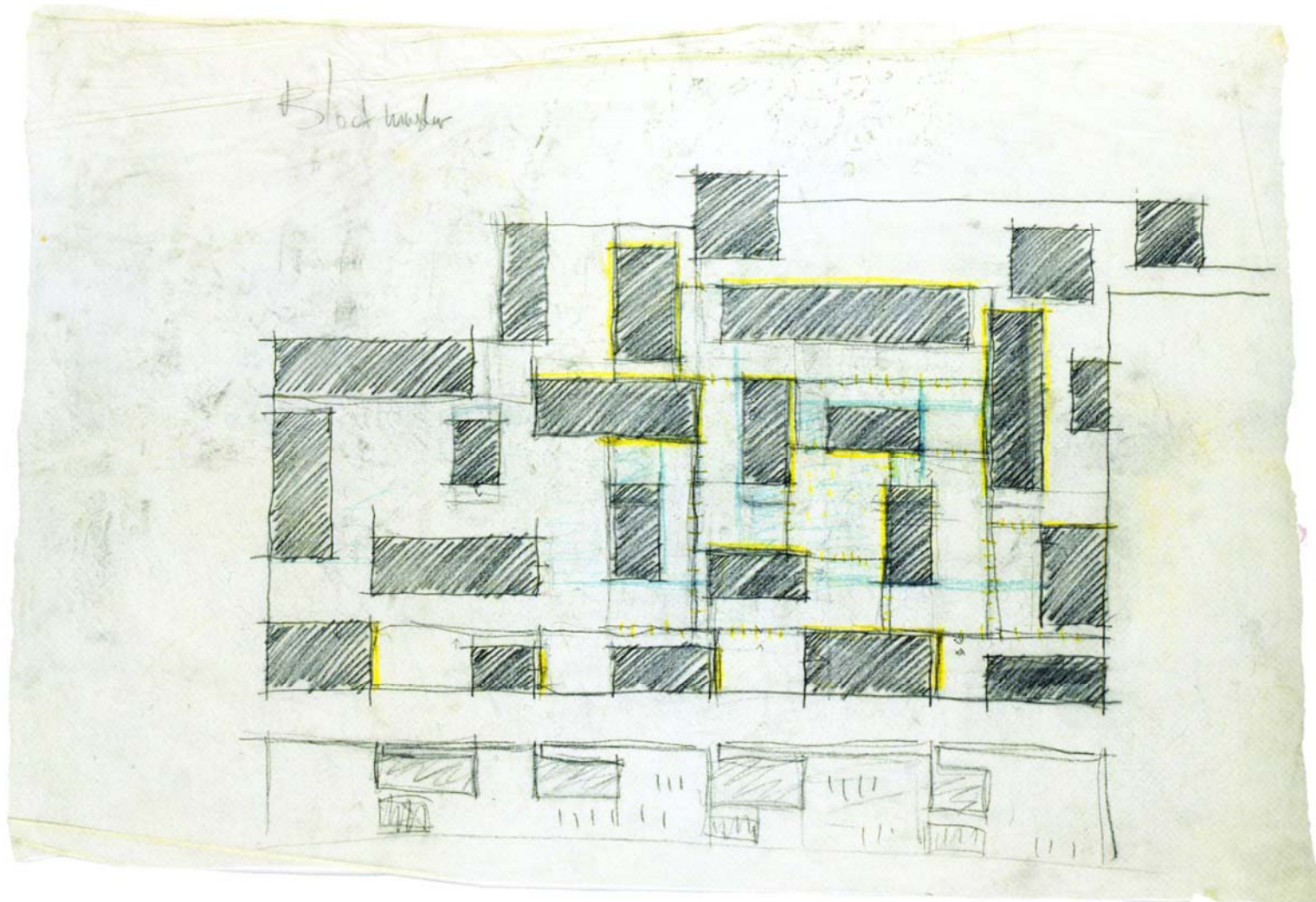
The study to the right shows a glazing detail for a still relatively wide gap between the ceiling slabs. Only later was this gap reduced to the atmospherically right width (see detail on page 111, top).



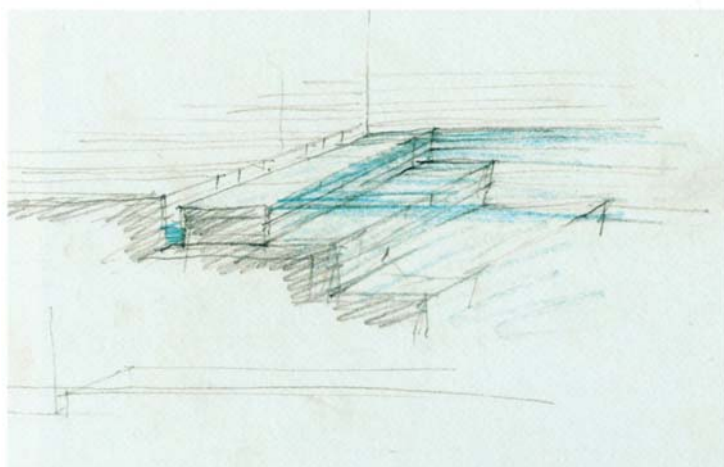
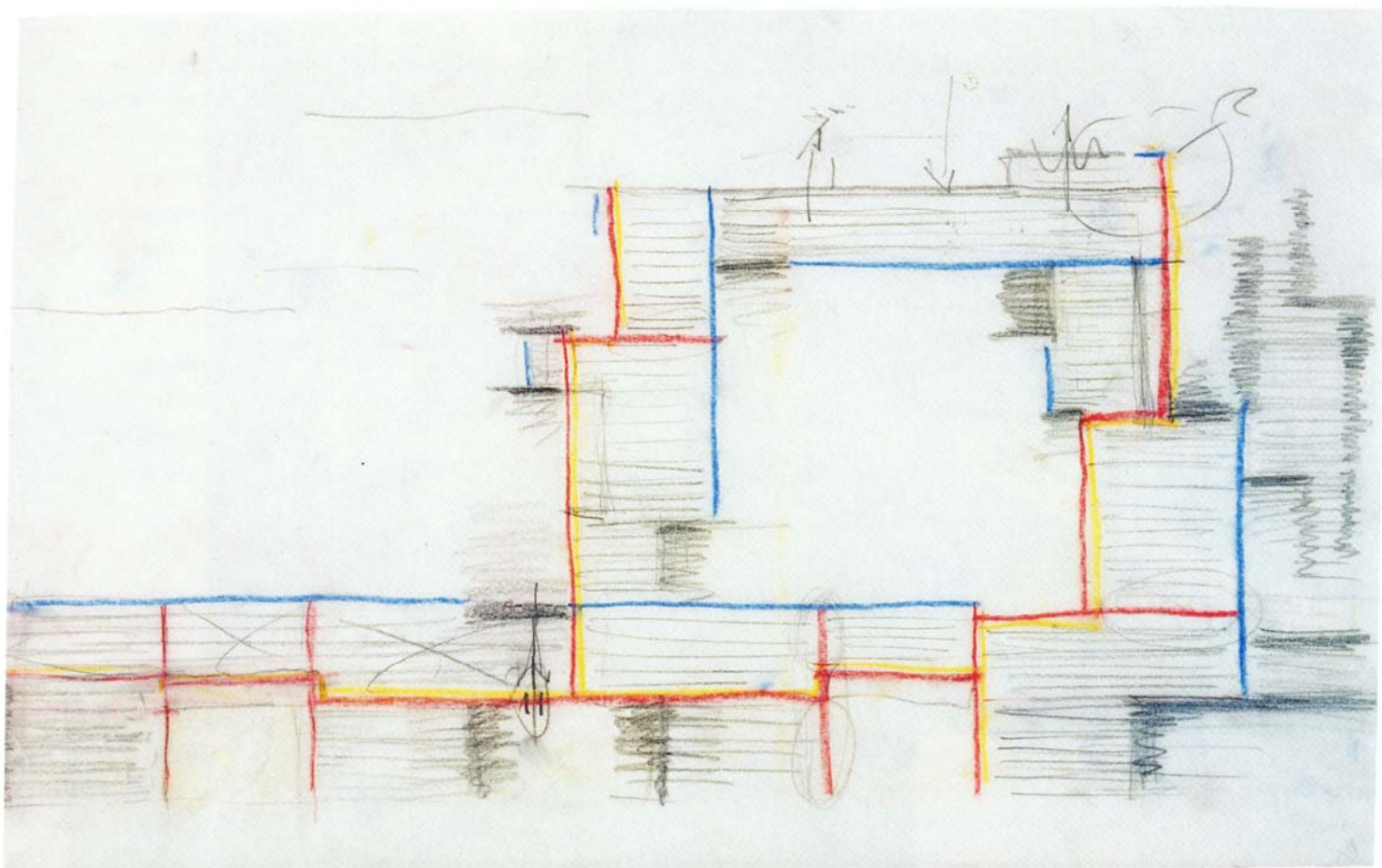
Floor patterns. Each block not only has its own ceiling slab but also its own foot slab. The "foot slab," as we call it, consists of a rectangle of stone strips of varying width. They are lying on top of the concrete floor. The pattern of these rectangles, their geometry, is not identical to that of the ceiling slabs; it is made visible on the floor by changing the direction of the stone and varying the patterns from field to field (see the black plan, page 100): large fields separated by joints, a right-angled mosaic.

The floor plan above studies the relationship between the ceiling joints that cast shafts of light on certain walls (yellow lines) and the floor joints that conduct the water (blue lines).

Water flows in the joints of the floor. All of the drains and overflows required to operate the baths are worked into the linear pattern of the floor mosaic, including the overflow of the pools. The early sketch to the right shows the basic idea: the water flows over onto the top step of the stone stairs leading into the pool. The resulting film of water laps over into a joint in the stone floor from which it runs off (see the detail of a built drain on page 110). Thanks to this overflow detail, we were able to fulfill a long-cherished wish, one that had arisen while we were still working on block studies and stone models: pools filled with water up to the rim and flush with the floor, no shadow frames around the water's edge!

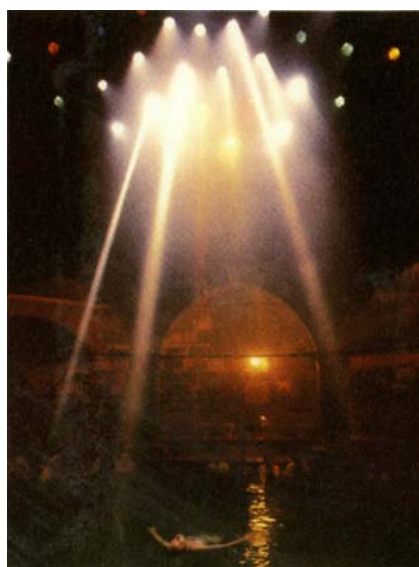


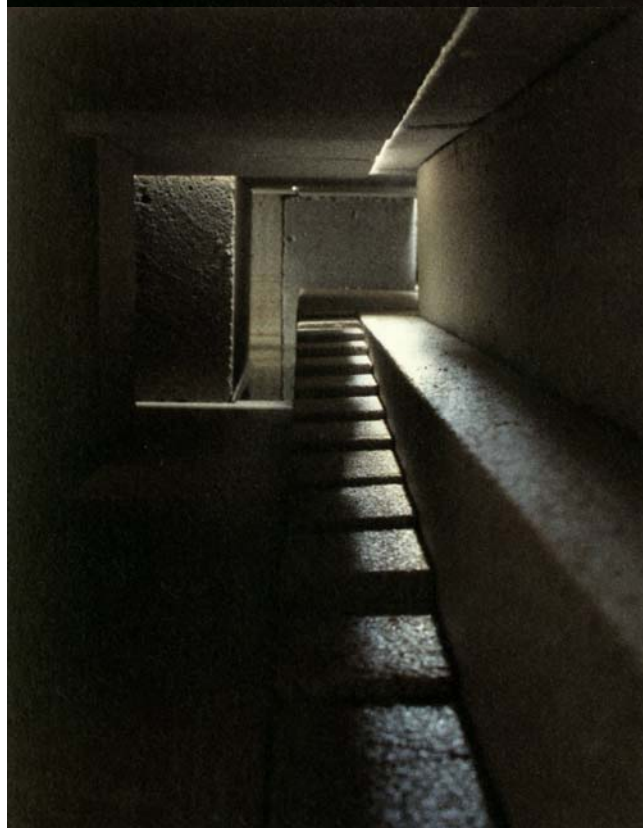
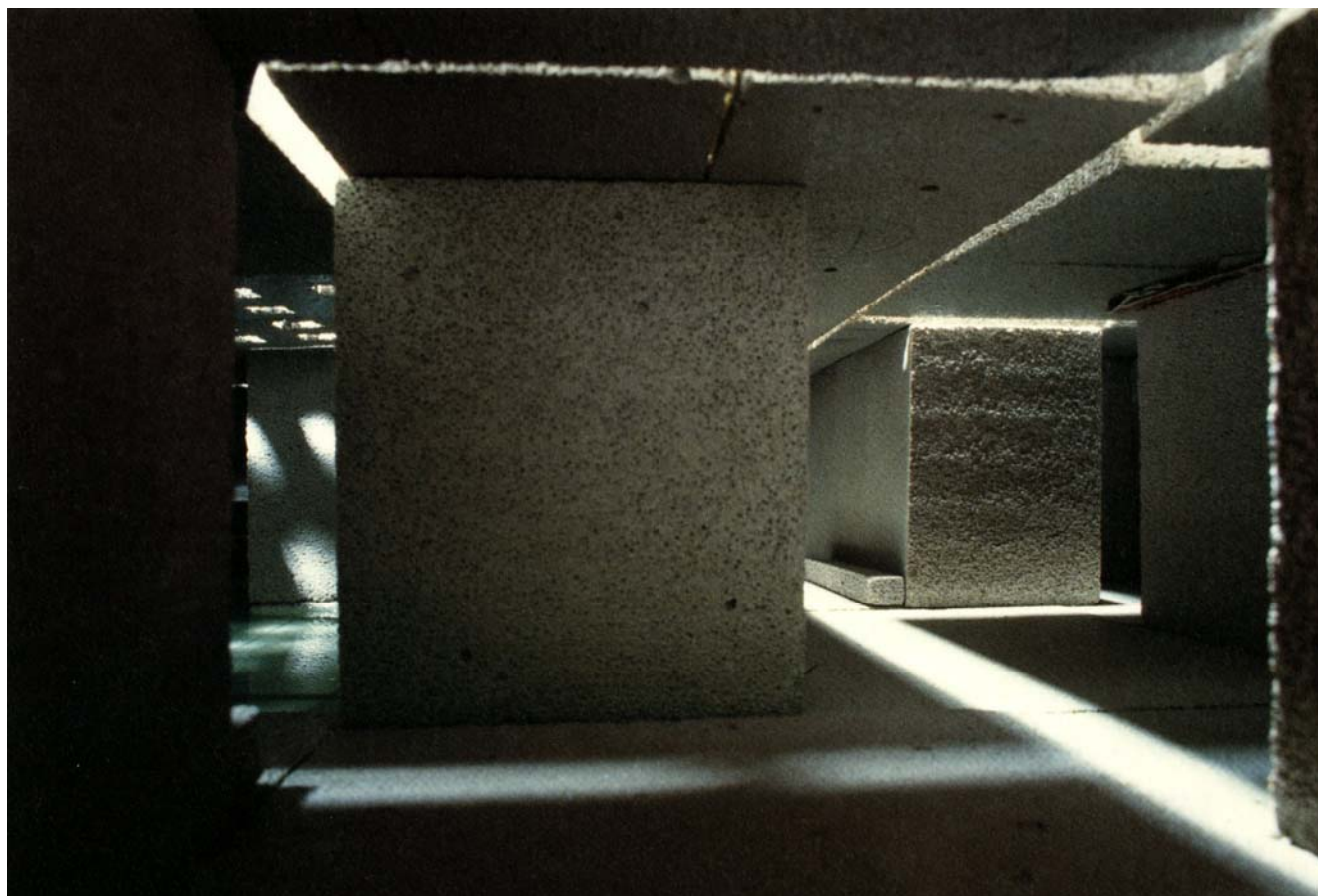
Joints in the floor. The joints that subdivide the large fields of the floor pattern fulfill various functions. The sketch was drawn at a point in the design process when we were trying to integrate the joints required for drainage and expansion into the linear structure of the pattern. The blue lines indicate the joints in which the water runs off the stone floor. They are absorbed in the floor pattern. The red lines indicate the joints in the floor pattern, in which no water flows. Most of these also have a parallel yellow line representing the expansion joints of the building. The construction necessitates cutting along these lines through the stone floors and the concrete slab underneath, which means that, in this case, the floor pattern is identical to one of the building's expansion joints. The red lines without a parallel yellow line indicate those parts of the floor pattern that could not be integrated into the geometry of the technical joints. They are lightly circled in pencil.



Using large outdoor models, we studied ways in which the combination of daylight, coming in through the joints in the roof, and the water below could create a specific atmosphere in the rooms; we wanted to learn how to stage the effects in a meaningful way. And because we imagined that the air in the shadowy mass of meandering hollows in the baths would always be humid and the floors of stone would always be wet, we built our models out of stone or out of aerated concrete and filled them with water in order to observe the effects created by daylight under those conditions: stone and water, shadow and light.

We staged the daylight by cutting small openings into the ceiling slab suspended between the pillar blocks of the indoor pool, an idea inspired by the cupolas in Turkish baths. In the Rudas Baths in Budapest the points of light are multi-colored; in Vals they are of blue glass.







Public baths were equipped with heating long before Vitruvius' time, but in the tenth chapter of the fifth of his *Ten Books on Architecture* he was the one to introduce the concept of *hypocaustis*, and since it derives from the Greek, the origin of the invention seems clear, despite equivocal documentation. Archeological excavations prove that there were elaborate floor heating systems in ancient Greece by the third century BC. *Hypókausis* means *heating from below*.

HYPOCAUSTS / HYPOKAUSTEN are therefore a form of heating in which warm air is distributed via spaces beneath the floor. According to Vitruvius they involve a system of underground pillars upon which the floor rests and function, from an engineering perspective, in much the same way as a radiant heating system: the hot air spread out among the pillars, a furnace - the *praefurnium* - was constantly fueled with dry wood. This furnace was also used to heat the water for the warm and hot baths. Later developments produced *tubuli*, earthenware pipes which were installed vertically behind the walls and through which the warm air was able to rise upward. Vitruvius never learned of this wall heating system, archeology dates its first occurrence at around 100 AD. Technological progress and the increasing size of the public baths throughout the Roman Empire led to an enormous consumption of wood, already in the antiquity *ecocritics like Pluto and Pliny* warned against *soil erosion and forest decline*, according to Marga Weber in her in-depth book about antique bathing. As time went on, the necessary firewood had to be transported from more and more distant provinces, where some of the forests still haven't grown back to this day.

Vitruvius (Morris Hicky Morgan, trans.), *The Ten Books on Architecture*, Cambridge 1914.
 Heinz-Otto Larnprecht, *Opus Caementitium - Bautechnik der Römer*, Cologne 1984.
 Marga Weber, *Antike Badekultur*, Munich 1996.

She won't photograph the interiors of the Therme *without water*, says H el ene Binet, adding that in this case water is a *material essential* to the *architecture*, it is a material one can *immerse* oneself into. There are various photo series of the **INDOOR POOL / INNENBAD** and its surrounding spaces taken by a number of photographers, in color or black-and-white, printed in many publications or available as postcards. A comparison of these images reveals not only the different methods in which the camera can be used to make the space and the material experiential and how this experience can be depicted, it also reflects the architecture's shifting character. Margherita Spiluttini photographed the bath in 1997, the year after it was inaugurated, her space-conveying images frame blue-green and brown-red colors, giving a feeling not only of mood but also of temperature. She builds her compositions according to classical rules, the light-dark values are balanced, the lines and contours are parallel to the edge. She looks for a frame in the picture, creates depth by ordering levels and planes, concentrates on a vertical axis, which does not necessarily correspond to the central axis of the frame, this produces a symmetry in the original sense of balance. Like *jewels*, the handrail and supporting brass or bronze stanchions descend with the steps into the water.

In a manner of speaking, each photo series shows a different aspect of the design concept. For Peter Zumthor, one idea in thinking about architecture has been present *from the beginning*, namely, to *plan the building* as a pure *mass of shadow*, then to add light as *if it were a new mass seeping in*. The next step is to go *about lighting materials and surfaces systematically and to look at the way they reflect the light*. H el ene Binet made these reflections the theme of her black-and-white compositions, she too photographed the building in 1997, in one of her first photo series of the Therme Vals, its spaces, and its surroundings. In her walk she looks for detail and depth, proximity and distance, she seeks to combine bath in one photograph. She makes the daylight pouring in through the joints and openings her primary design element, she lets the light glisten deep below the surface of the water and trace stripes and conical patterns on the high stone walls. Her camera moves in close and closer, eye to eye with the stone, shows what man has tossed aside, like towels, or left behind, like the dark traces of wet footprints: *bathers take the water with them when they leave the pool and in this way produce temporary, unexpected patterns on the floor*.

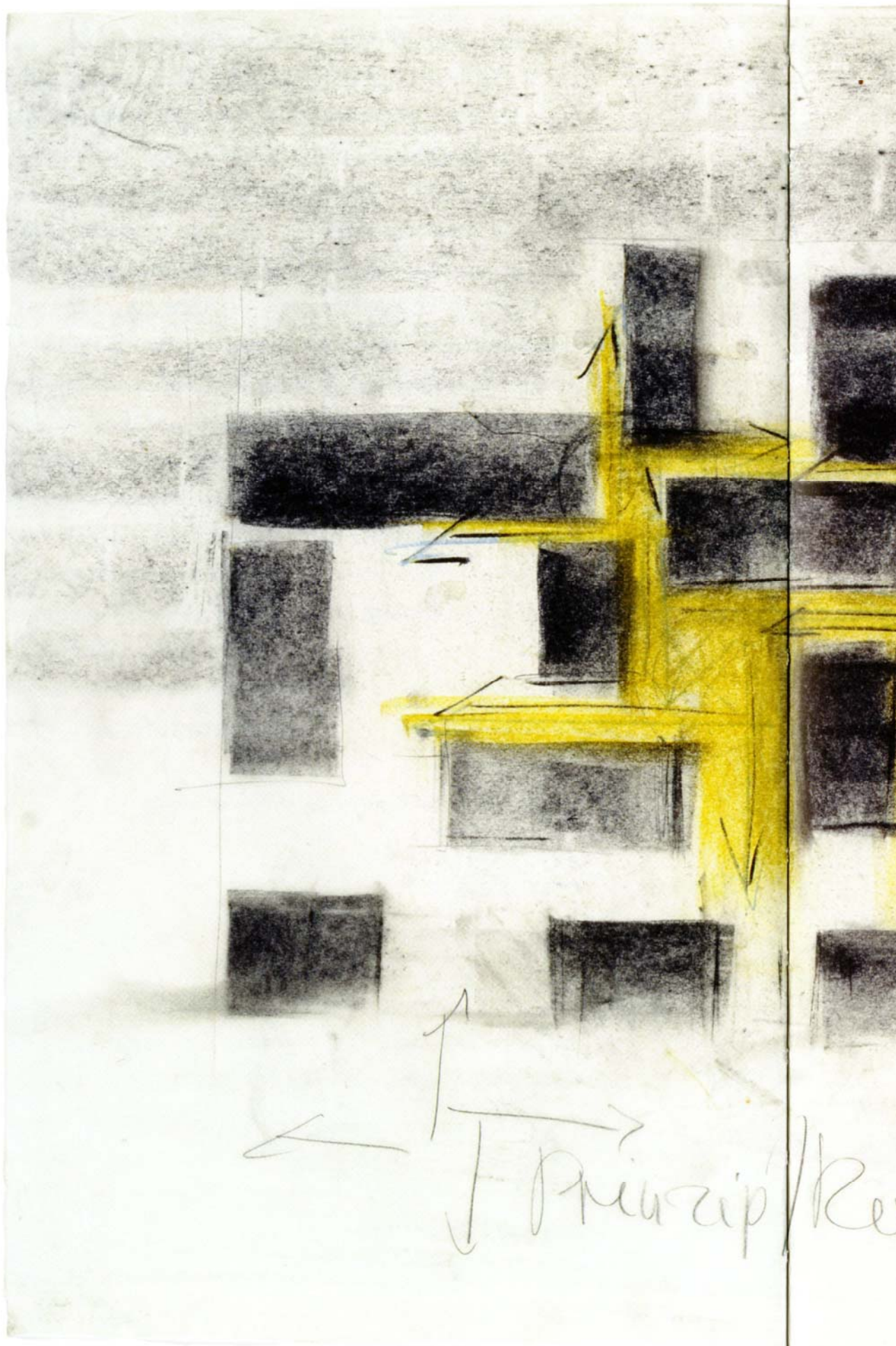
The photos inform: about the mood, about the lighting, even about the sound. *Interiors are like large instruments, collecting sound, amplifying it, transmitting it elsewhere* - writes Peter Zumthor. Hans Danuser captures an aspect of this sound in his photo series from 2000, Vals-stone-grey, he seems to portray the room in its role as a resonance chamber, here, in a sense, it becomes clear that the room reverberates: to the rhythm of the walls, in unison with the square apertures in the ceiling, in three-part harmony with the stairs. This photo series presents the *Indoor Pool without water*, the space looks like an empty stage, like a backdrop, stairs step up and step down, corners leave narrow cracks open, the room plays itself, shows what it is capable of. Several times each season musical evening events are organized at the Therme, on these occasions the circulation and ventilation systems are switched off: *Without water the Indoor Pool is transformed into a concert hall with four sets of steps as seating. Here the sound of string instruments merges with that of the empty basin, accents ricochet from wall to wall, from floor to ceiling* - writes Annalisa Zumthor. As the director of the *Hotel Therme* since 1999, she organizes a diverse cultural program for her guests and edits a semiannual in-house publication entitled *Stone and Water*. During regular bathing hours, the Therme seems to adapt to the conduct of its occupants: if they are loud, it amplifies their excited cries in all directions, if they are quiet, it radiates contemplative tranquility from every surface.

Peter Zumthor, *Atmospheres - Architectural Environments - Surrounding Objects*, Basel-Boston-Berlin 2006.
Annalisa Zumthor, in: *Hotel Therme Vals* (ed.), Stein und Wasser - Kultur Winter 2004/05, Vals 2004.

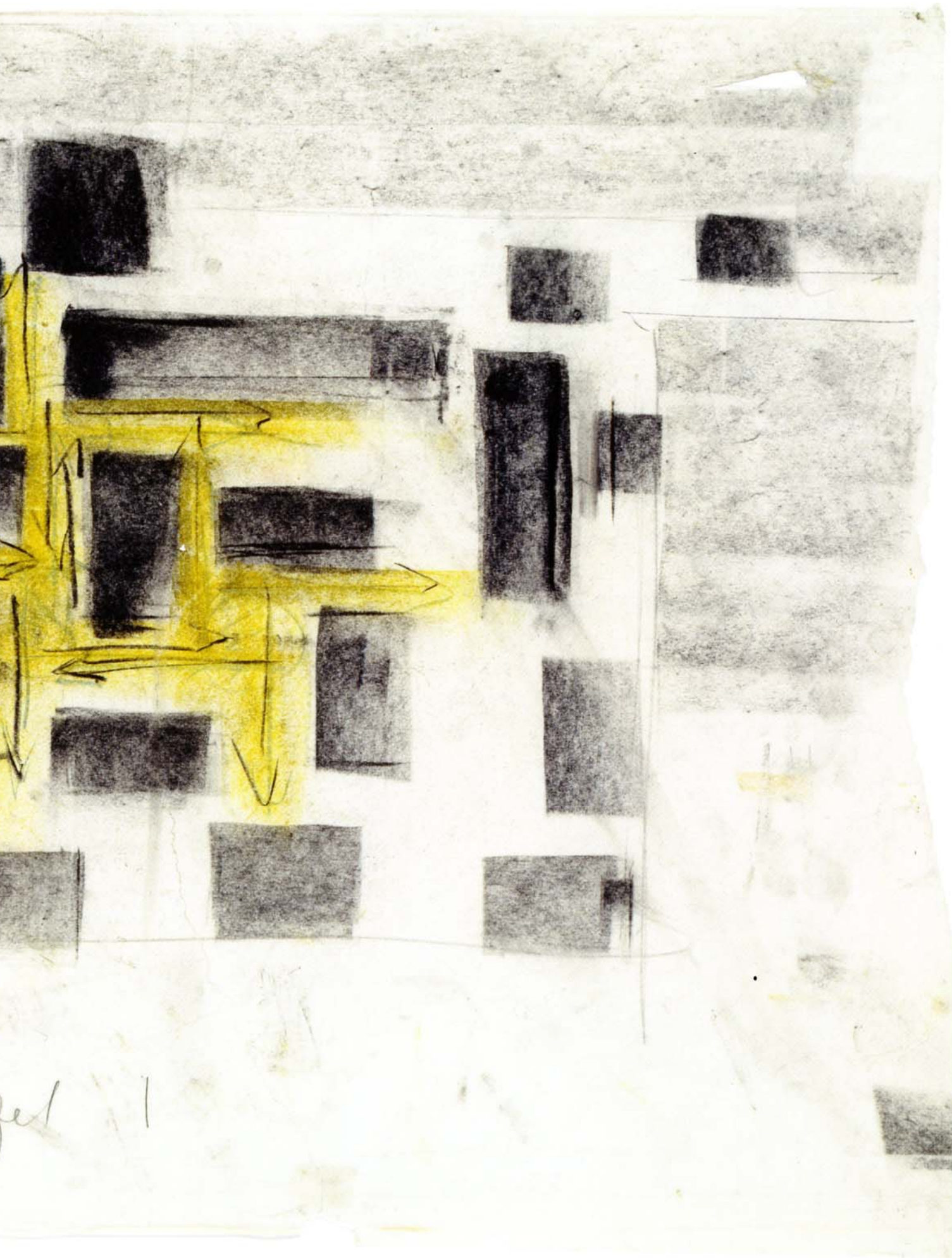
The temperature of the water inside each bathing area is written on the wall beside the entrance of the individual blocks in graceful brass numerals. As one emerges from the *Fire Bath*, the inscription 14° seems to beckon from across the way, the entrance to the **ICE BATH / KALTBAD** leads around a bend, one descends seven steps and plunges into the pool, the room is narrow and high, the concrete wall, blue, the gravel texture of the floor, multicolored. Blue symbolizes cold, water, air, and the infinite. In the Roman bath the abrupt temperature change from the hot waters of the caldarium to the cold waters of the frigidarium was considered the acme of health and pleasure, of communal relaxation and refreshment. Immersion in the flowing water of the Jewish mikvah, by contrast, is purification as a requirement for recurring life. The legendary medieval fountain of youth is water from which a person, assuming he or she has grown old, emerges rejuvenated. The *Ice Bath* at the Therme Vals, by virtue of its interior dimensions, lets one partake of this invigorating experience alone, the icy shock can thus be expressed freely and individually, as if in reciprocation aloud gurgling issues from the overflow gulley, which, as in the other pools, is integrated into the top step.

Marga Weber, *Antike Badekultur*, Munich 1996.

Françoise de Bonneville, *The Book of the Bath*, New York, 1998.



↑
← →
↓ Prinzip/Re

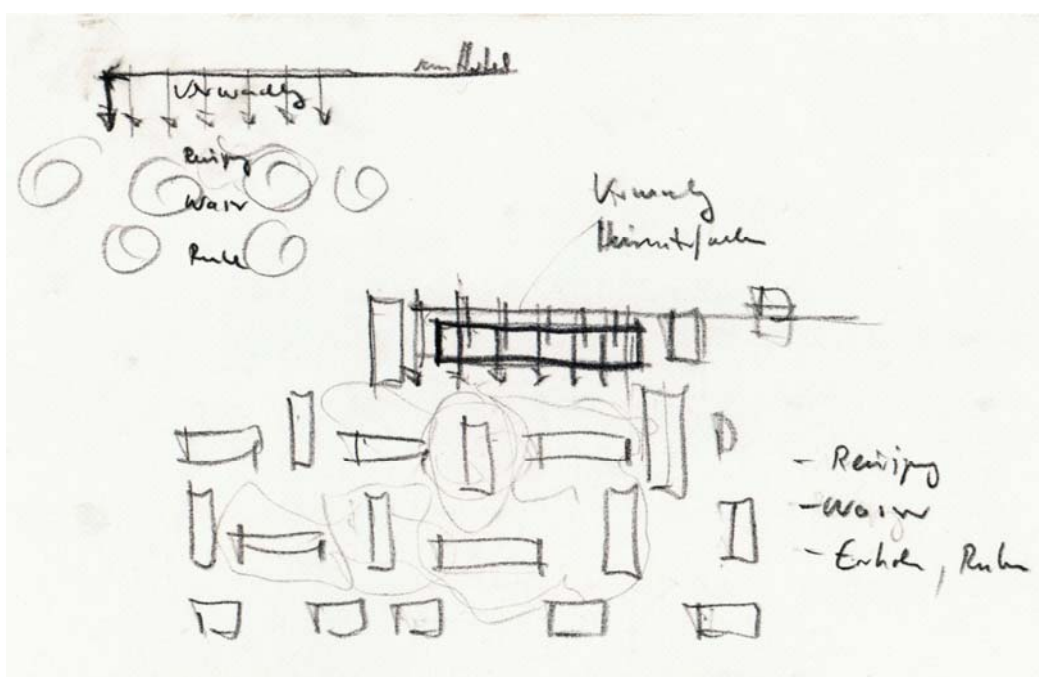


THE FLOOR PLAN GROWS: THE MEANDER The large field of stone blocks defines the floor plan of the baths. Between the blocks there is a meandering open space. The blocks themselves are hollow. They contain cavities, they accommodate rooms that can be used. This basic idea was there from the outset. It means that the architectural composition offers users of the baths two types of spaces: the meandering, interconnected space between the blocks and the introverted rooms within the blocks themselves. The latter are intimate, almost like hiding places, a little bit clandestine. Distributing the weight of the blocks and weaving the spatial structures were guided and inspired throughout by the underlying idea of using the rooms for the rituals of bathing.

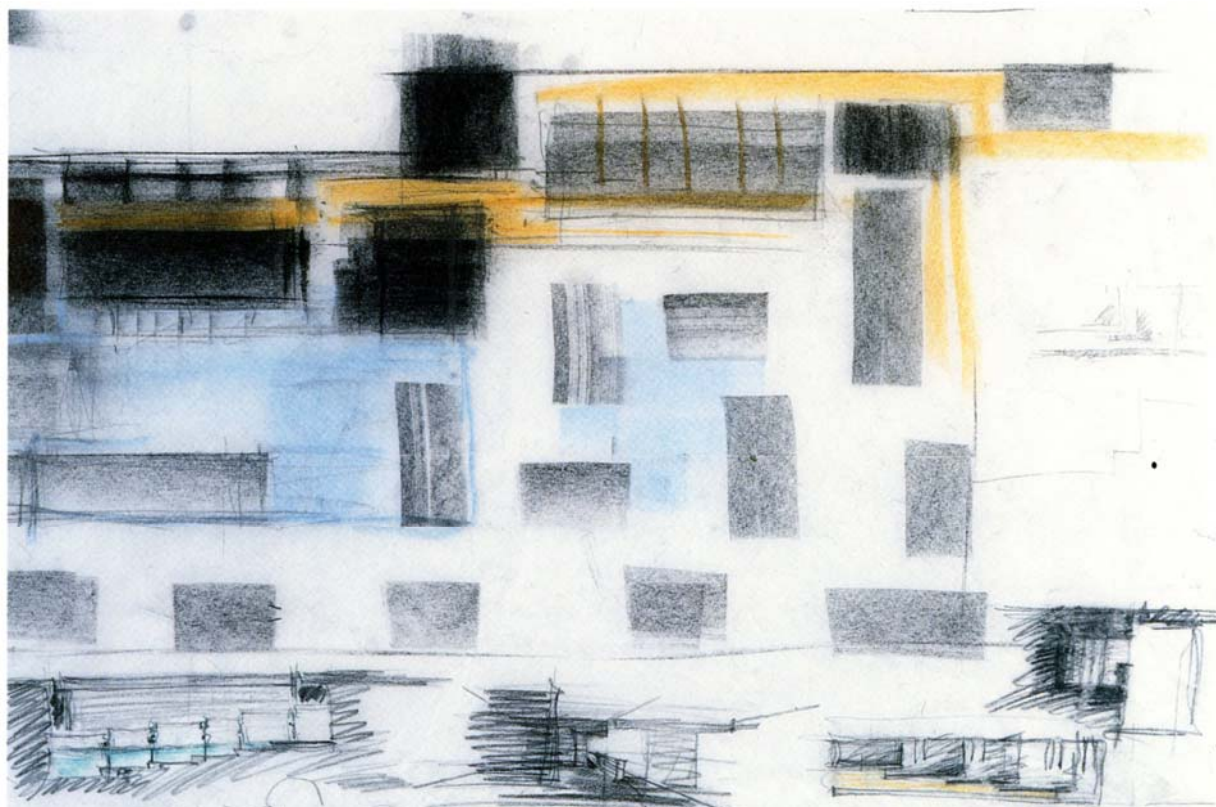
Between the blocks there is a space that connects everything as it flows throughout the entire building. The meander, as we call it, is the empty space between the fullness of the solid stone blocks; it is a designed negative space. Working on the shape and arrangement of the blocks always meant working on the course and shape of the meander.

For the guests in the thermal baths the meander is a large, shared space in which to circulate. The structure of this space is like a fabric. The passages branch off every which way and are intertwined. Moving around in this space means making discoveries. You are walking as if in the woods. Everyone there is looking for a path of her own, of his own.

It is in the meander that I experience the baths. The meander receives me in the narrow passages built up against the mountain slope; it leads me into the wood-paneled antechamber where I leave my regular clothes behind and become a bathing guest; it takes me out onto the stone gallery where I curiously muster what spreads out before and below me; it invites me to stroll around and discover the landscape of blocks and basins. I then move from the mountainside to the valley side, from the shadows into the light, from introspective passages to the great vistas facing the valley, where the blocks are aligned in a long sequence offering me both a view and an overview. A framed landscape. The slope on the other side of the valley, the landscape, reaches into the building. We see large, silent images.

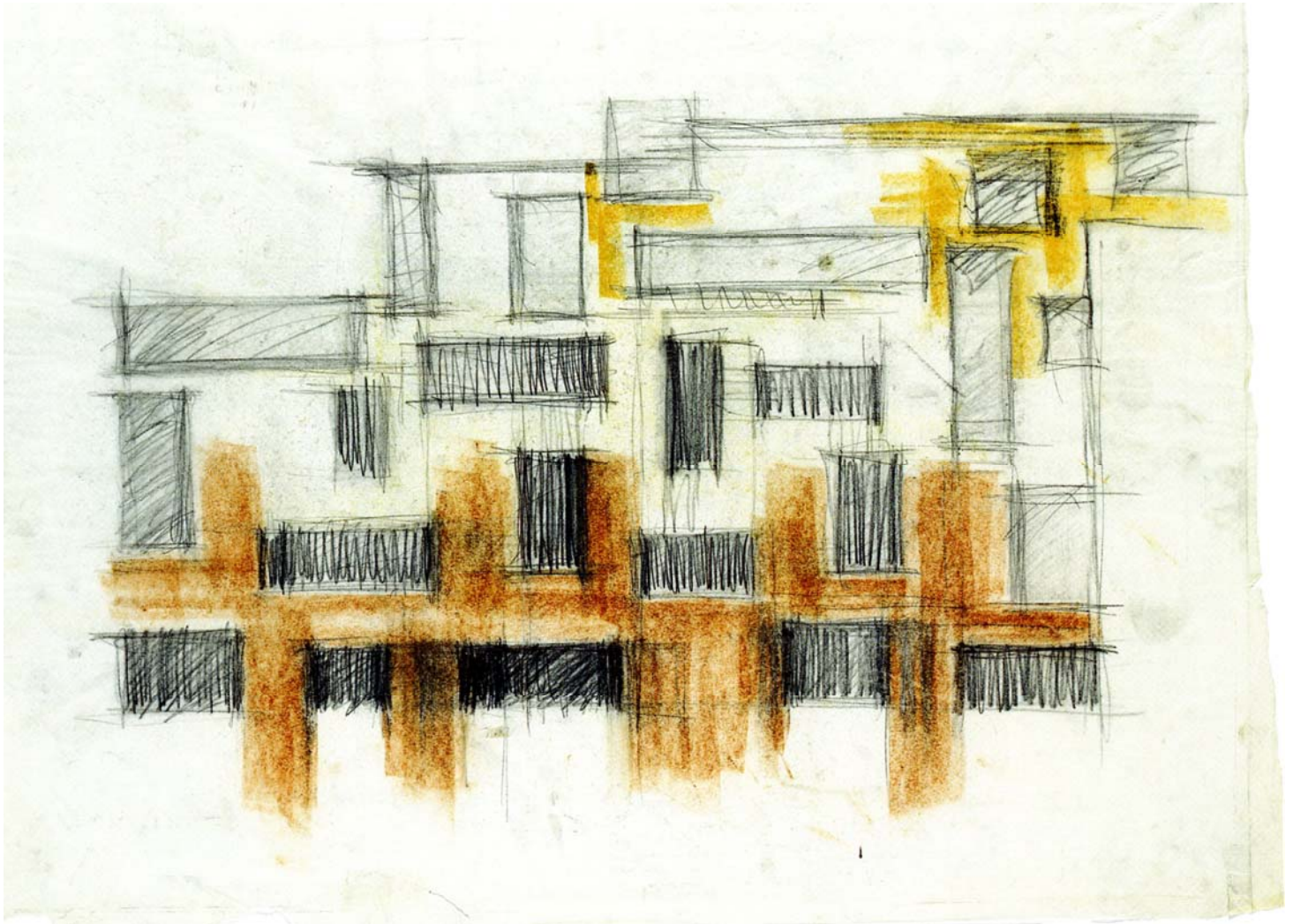


Rainer Weitschies' sketch pictured to the left shows the idea behind the sequence of movement: a narrow corridor marks the entrance on the mountainside, sets the mood. Then comes the transformation: I walk into a block, into an antechamber clad in red wood and walk out again as a bathing guest, out onto the gallery and my first view of the baths. This is followed by a zone where I can stroll around in the landscape of basins and blocks accessed by a long stone staircase. And finally, at the lower front edge of the building, I reach the quiet areas for resting and gazing.



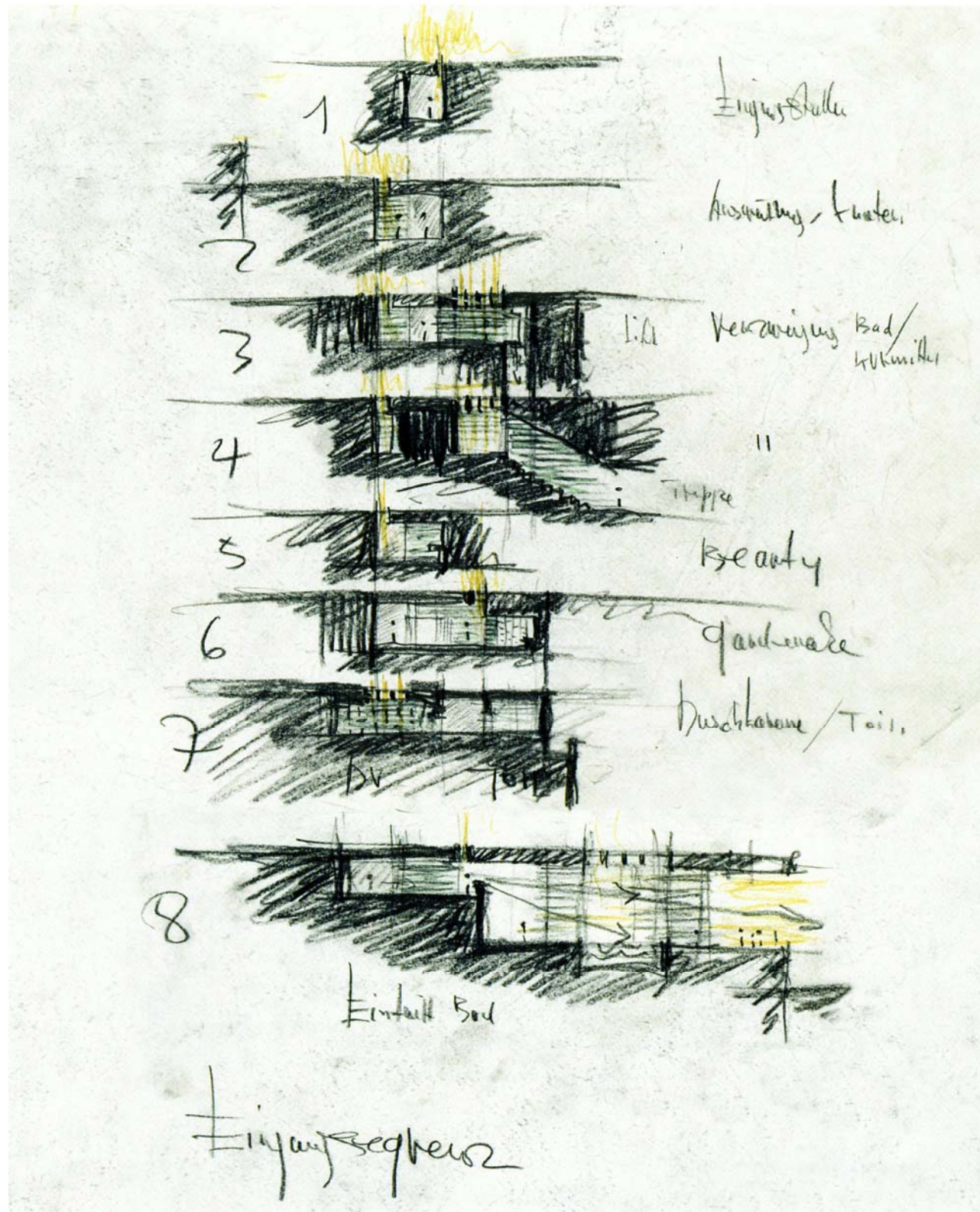
The drawing on pages 78/79 shows a woven web of spaces between the blocks based on the "pinwheel principle"; the study pictured above the "zipper principle": interlocking spaces between the blocks along the axis of movement that closes off the front edge of the building.

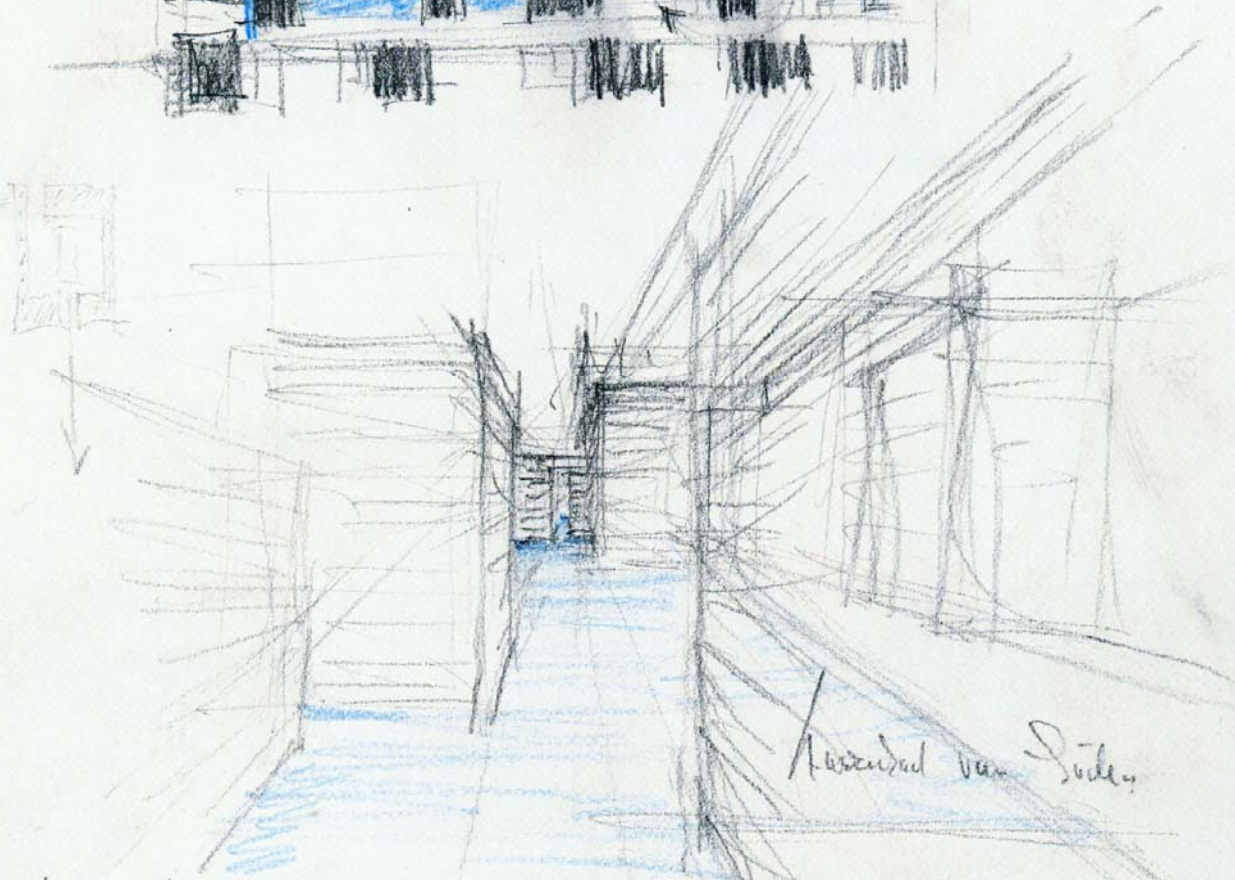
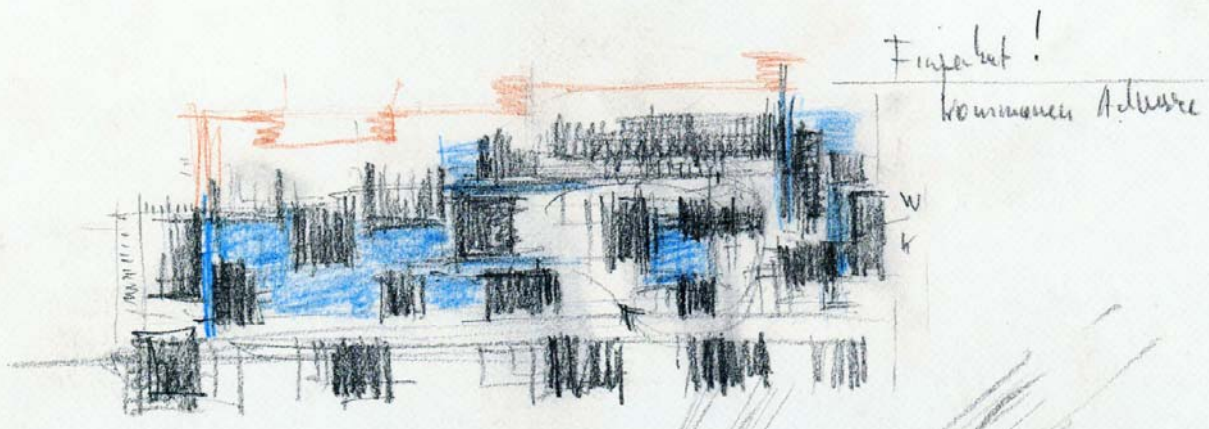
The empty space between the blocks, a varied, meandering continuum of spaces with a peacefully pulsating rhythm, invites bathers to stroll and tarry. Spaces close, spaces open.





The series of sketches on this page explores the sequence of spaces, from entering the baths to the first point on the gallery that affords an overview. Guided movement through masses of stone, changing light from above.



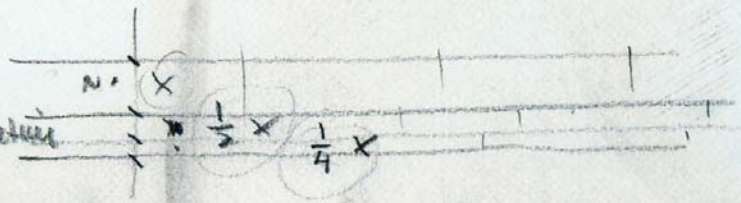


Wand, Kamin

Die Wandformen sind die schönsten! Heute bin ich in St. Moritz
 (Parschkehaus etc). ca um 17-18⁰⁰ zurück. Ihre Wohnung
 möchte ich anzusehen, den quadratischen Vorkammern bzw. -Ecken nicht
 zusammensetzen, sondern ein gutes Bild aus einem grossen
Quadrat entstehen. Mein Gefühl ist gut. Schön Anblick. Schaut Ihr und mir?

Die obige Skizze zeigt, dass man sehr wehrselbster das mit
 einer langen Treppe verbinden sollte (~~das~~ Abstand gross zeigen)
 Abstände: Wie breit ist die breiteste Bodenplatte, die triften
 herstellen kann?

Bodenstruktur →
 bestimmt die quadratische geometrie
 in Längsrichtung



"Orwell"
Kalt-
Wasserball 18°

Whirlpool 37°
12 Reih.

Whirlpool 37°
12 Reih.

Schlucht →

Luft →

Liegebecken

Kneippgang
glaube

Liegebecken

Massage
becken
Kneipp
becken
Aussied 200m² 37°

Ruhe

Wechselbäder

Wannwasserbäder 32°/36°

Kaltwasserbäder
mit Becken 18°, 4m

Thermostat

Wasserbad 32-34°
110 m²

Grand

Solario

Dampfbad 47°/100%

Solario

Sanna

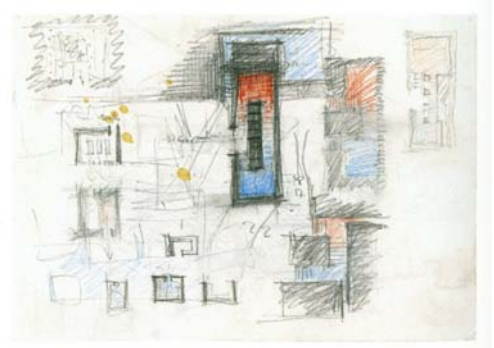
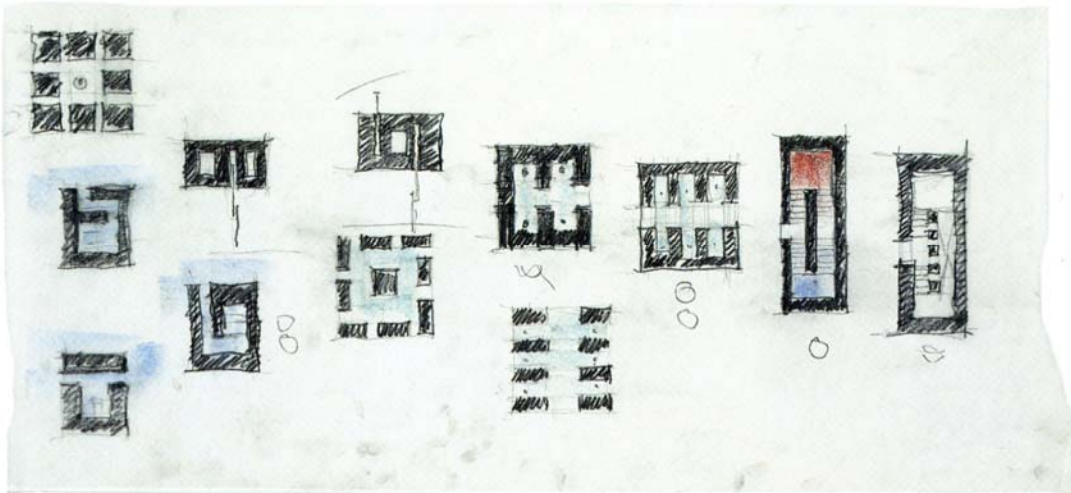
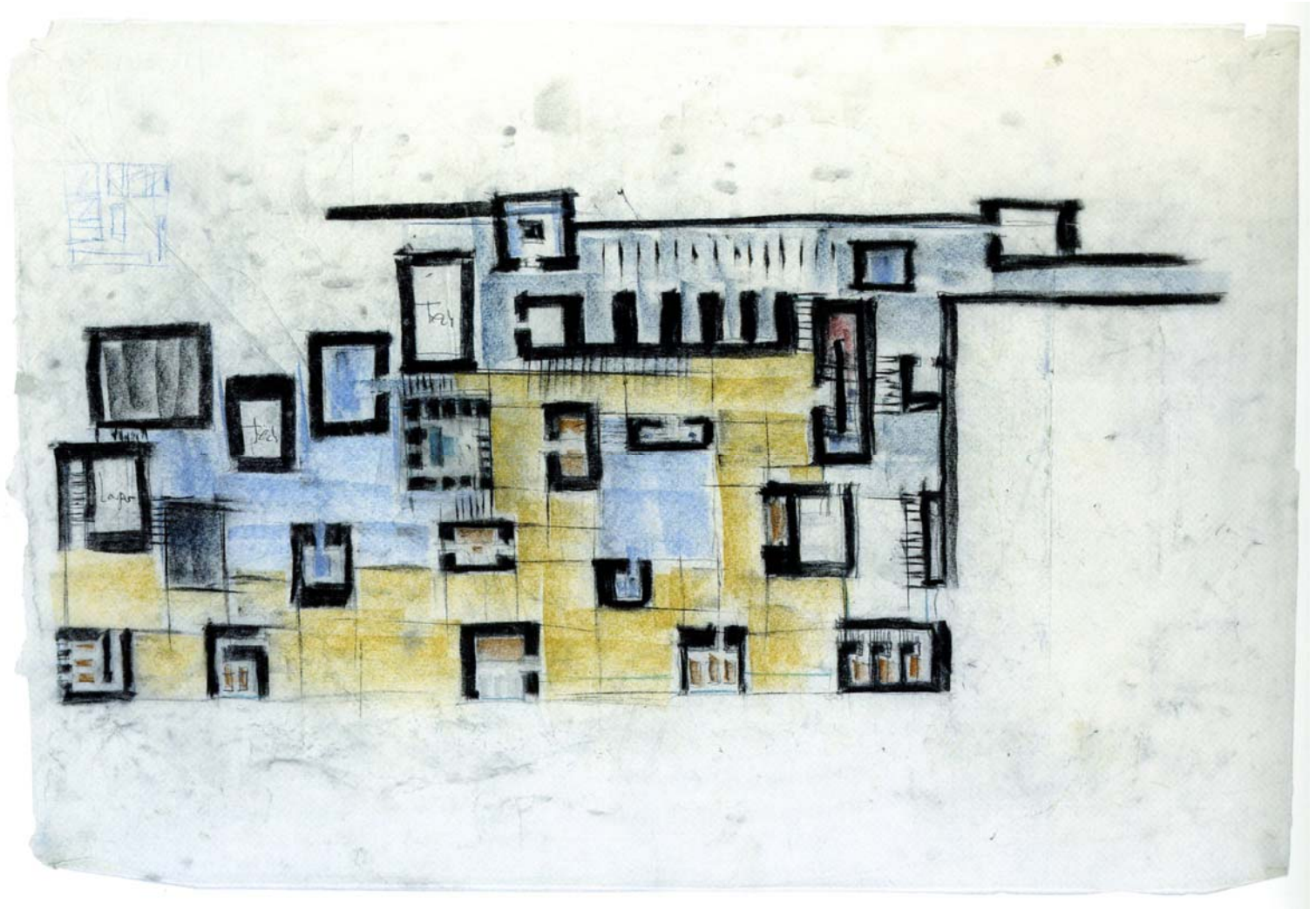
Wasserbäder, kalt 18°

Küche

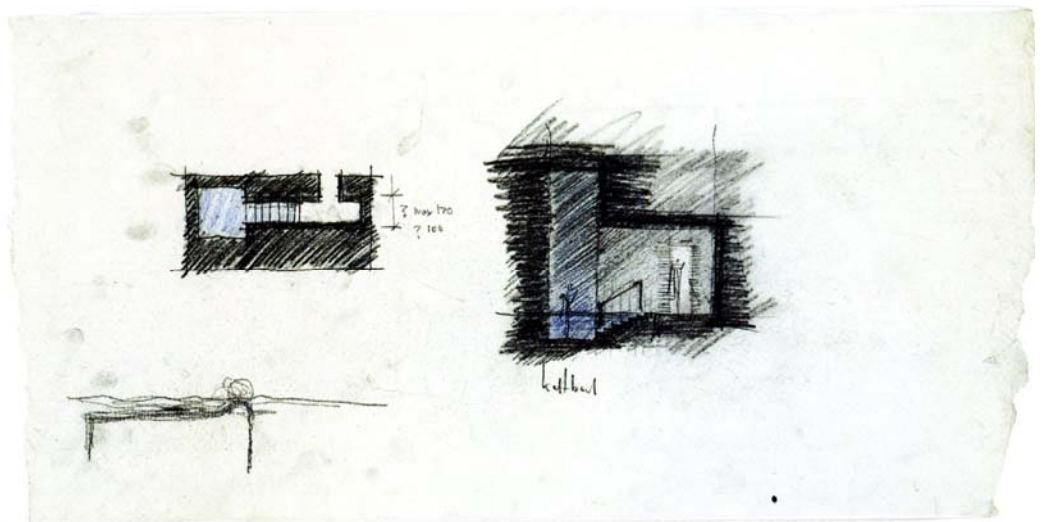
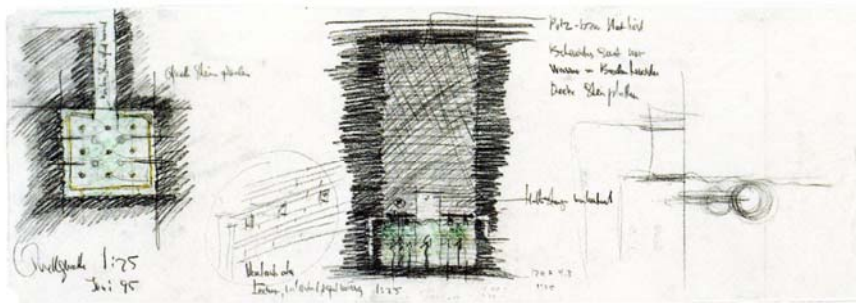
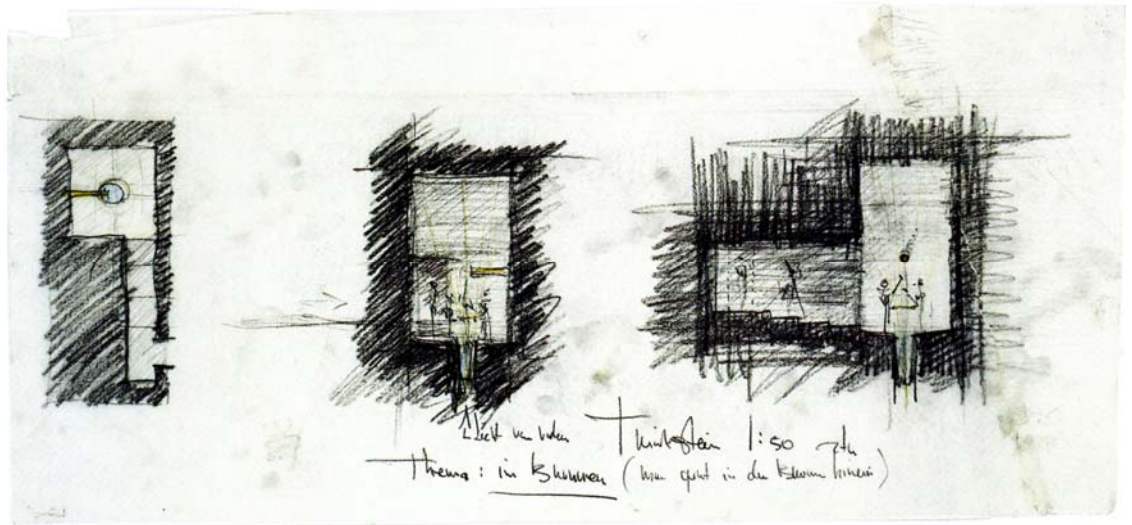
Küche

THE BATHING From the beginning our design philosophy was also a bathing philosophy. In the earliest sketches, facilities and resources were already experimentally embedded in the landscape of blocks: pools of water, warm and cold gushing waters for contrast bathing in the slope at the back, waterfalls, rivulets...

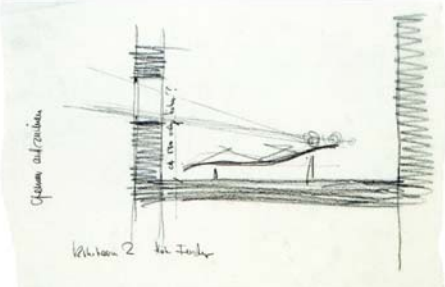
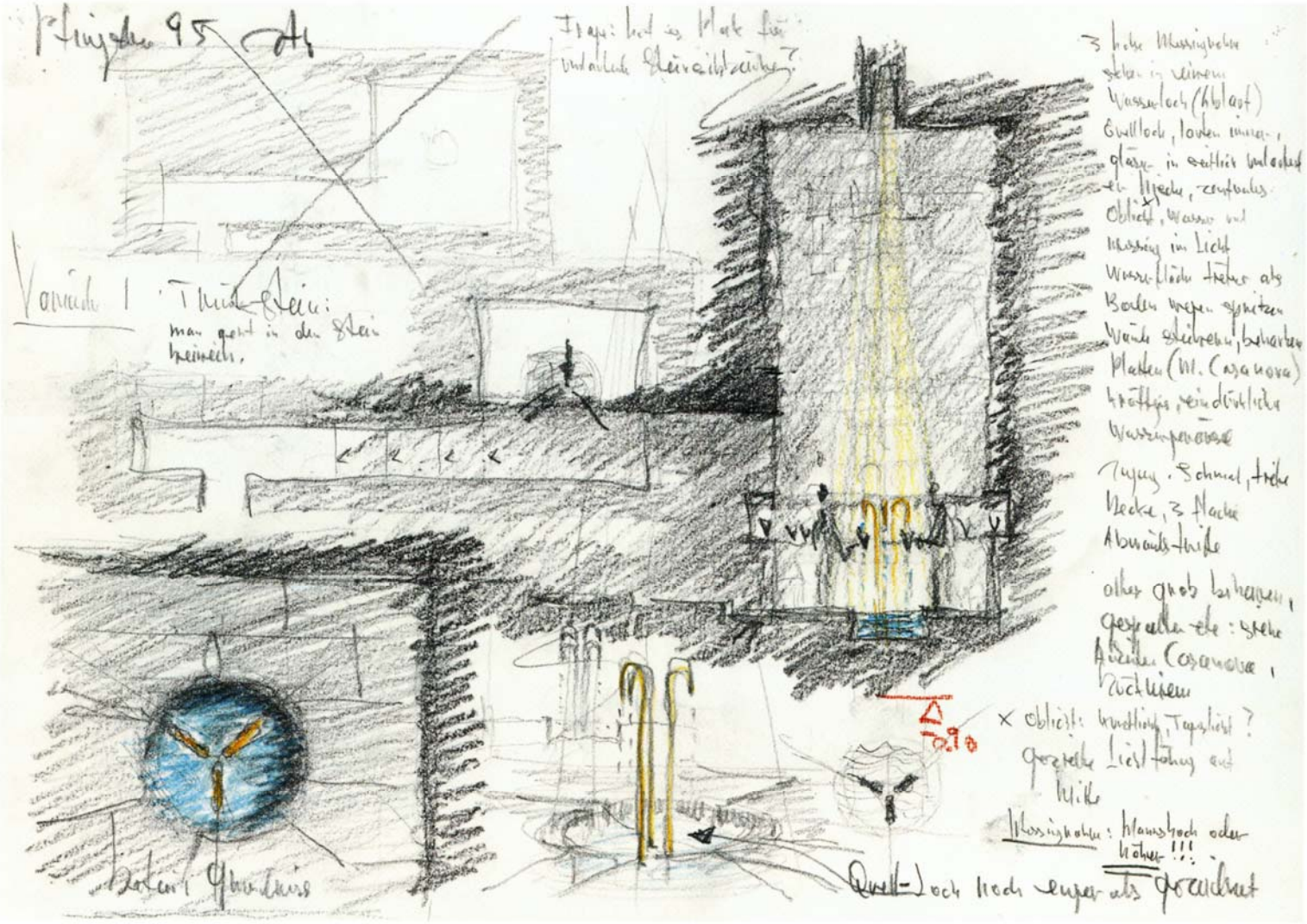
88



Hollowing out the blocks, assigning, seeking and finding bathing experiences, inventing hollow shapes and matching uses for the delight of the bathers - all these thoughts played a vital role in the design process. One aspect in particular took increasingly concrete shape in the course of our work: the wish to ensure a delight in experiencing water at different temperatures and in different spatial situations with variations in the lighting, the colors, the climate, the materials, and the sound; close contact with stone and water; immersing oneself in water for relaxation, as a ritual. Purification. Peace. Serenity. No noisy attractions, no intrusive stimulation, only the sensation of one's own body undergoing subtle change.



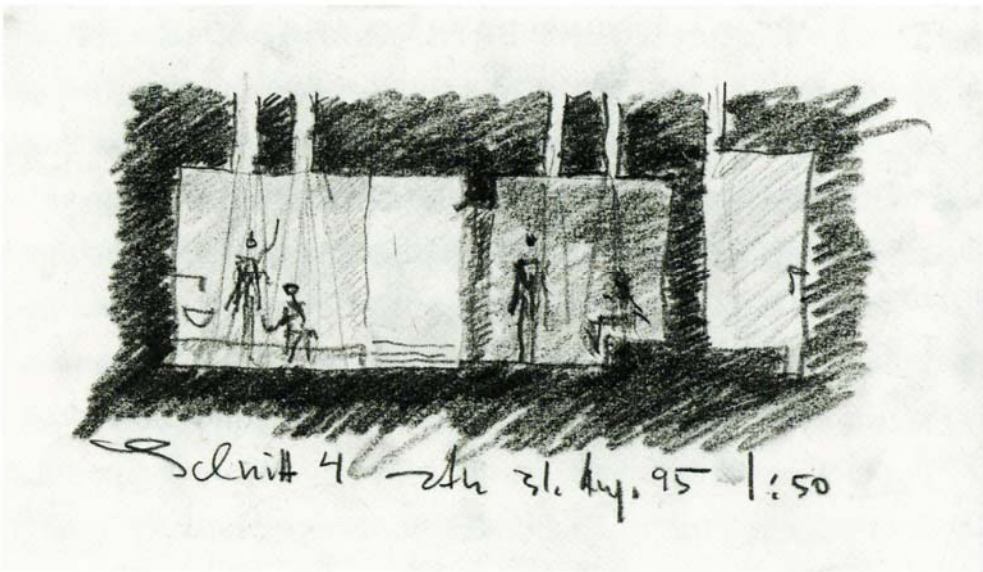
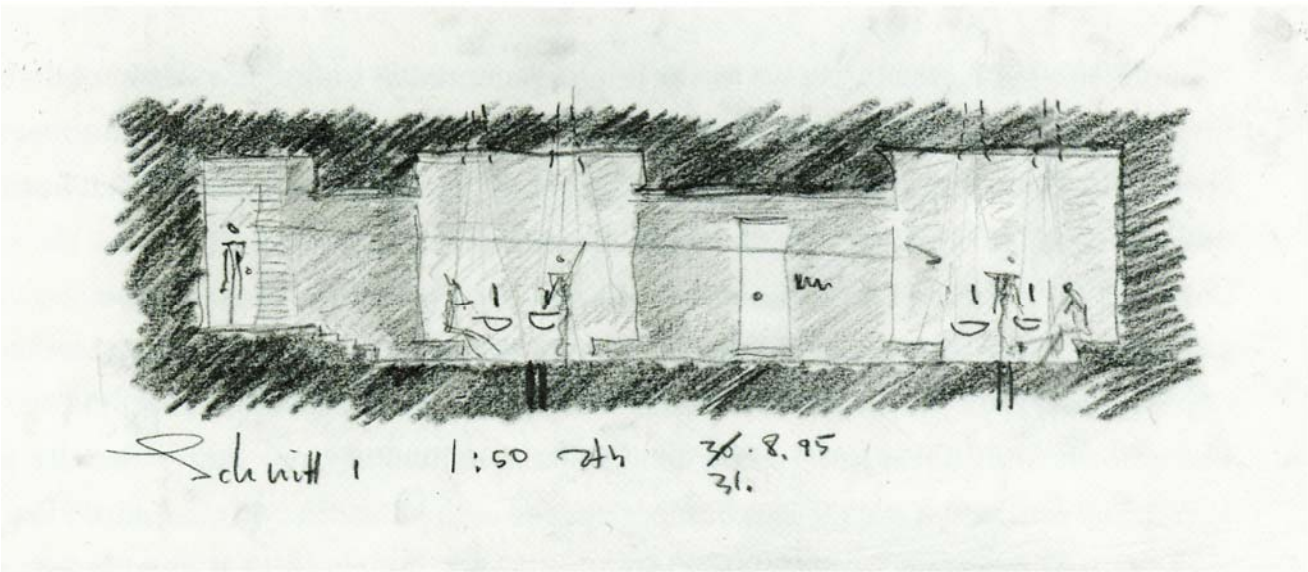
Hence, working on the architectural design always meant thinking about the rituals of bathing. The architecture that we developed step-by-step inspired us to see the experience of bathing in a new light, to find new choices and forms, to leave some things out, to rediscover original forms. Conversely, studying the art of bathing influenced our architecture. A certain openness and radicalism marked the path we took, accompanied by a group of people from Vals whom the community had given the responsibility of overseeing the project. The path soon pushed beyond the boundaries of the specified program. We had retained the one basic specification of building an indoor and an outdoor pool; all the rest was open to debate as we tried to find something special for the baths in Vals. At one point in the process, specialists in marketing and development, called in by the community, raised the alarm. They said the baths



were too exclusive, they would appeal only to an elite, the risk was too great, the town was inviting financial disaster. The citizens of Vals chose not to change course. The specialists quit the team. We now had the freedom to invent and build all the different baths, the drinking stone, the sweat stone, the flower bath, the sounding chamber, the anterooms and all the other small and big things that distinguish the Thermal Baths in Vals - without having to make any compromises.

Memories. We had initially formulated our ideas in theoretical terms, ideas about the rituals of cleansing and bathing, about the mutual interaction of place, architecture and baths: ideas, wishes, dreams. We had seen many things in books and films, but had had little firsthand experience. Only later - the foundations of the lowest floor housing the building services were already in place - did I visit the Turkish baths in Budapest, Istanbul, and Bursa.

I returned from these journeys with a mental image of long broad steps leading into the baths instead of straight-edged pools. Steps that allow the body to find its own height and position. It is also to these journeys that I owe my criticism of changing rooms in modern western baths, which, in turn, led to the idea of wood-paneled vestibules. The large domed spaces in the Turkish baths where I am received, where I change my clothes, where I rest and relax after bathing, where I drink coffee and converse: it is this that inspired us to invest the room where we take off our clothes with a similar atmosphere of warmth and welcome but in keeping with our own cultural context.



A photo, in a special way, shows the aesthetic potential of Vals stone slabs cut in three thicknesses: the camera seems to hover directly above the water, tries to grasp the space and its contours, but this is precisely where the image is doomed to fail because only personal experience recalls actual dimensions. It shows other special features, however, which come out more clearly in the photographic representation, how the stone was processed for example. And though it is layered no differently than in the other spaces, here the edges of the individual slabs have been broken. From 1997 on, and prior to that during the construction phase as well, Henry Pierre Schultz photographed individual indoor and outdoor spaces of the Therme Vals, captured the site and its structures, the landscape and its formations, the traditional architecture and its materials, various postcard series were produced, and one of the most popular shots is the photo of the **SOUND**

BATH / KLANGBAD: the current name the Therme Vals has given it is *Resonance Room*, the name on published plans refers to it as the *Fountain Grotto*, on construction plans it is called the *Relaxation Grotto*, we can presume that the room didn't reveal its unique feature in the conception phase, the photo does justice to the names. The path to the pool leads down steps, twice around the corner, and into this interior with a 2.6-by-2.6-meter base and a six-meter-high ceiling. One can only enter and exit one at a time because the passageway is low and narrow, it is covered by a single stone slab and cannot be looked into from the outside. The polished stone surfaces of the entryway slice through the wall, opening into, or being engulfed by, the chamber, layer after layer, broken at their exposed faces, the stones extend all the way up, some forming a convex edge, others a more concave one, depending on the natural line of breakage, a brass rail runs around the room just above the water level, light shines from the depths of the pool and from the center of the concrete ceiling, bathers lean against the rail and glance upward because the high, narrow room draws the eye in that direction, also because from above a singing, a humming, a ringing seems to resound, issuing from the more or less practiced choir of those present, conducted according to the laws of sound propagation upward to the ceiling, carried and reflected by the different refraction angles of the walls. Certain frequencies and their overtones are amplified through interference and produce a fuller sound. One's own voice as a sound source stimulates the resonant frequency of the room as a cavity resonator and seems to come from somewhere else, to belong to someone else.

The photo does not betray these secrets, nor what causes them, but gazing at the resplendent lights on the shimmering blue surface of the water, I seem to remember the sounds, to once again hear the oscillations of a Jew's harp which have incomprehensibly kept to themselves in this acoustic space, in other words remained in their own resonance cavity between tongue and cheek, refusing to rise: the space as a musical instrument - here as a resonance chamber for frequencies, not those of a Jew's harp but of the human voice - sounds like a stopped flute, that is to say an organ pipe closed by means of a stopper or cap at the top, also called *gedackt*, which is derived from baroque terminology. This method of construction makes tones sound an octave lower, in other words, the same pitch would require a pipe twice the length if left open. This effect was not part of the original concept. In order to preserve the closed-off nature of this space, one cannot peer into it from above. This posed a conundrum concerning safety in the planning phase, one that the building services engineers solved in a way that sometimes only the nose knows: whereas bacteriological disinfection in the other pools is carried out using ozone, recognizable around the inlets by the gas bubbles and turbidity of the water, for safety reasons chlorine is used instead in the *Fountain Grotto or Sound Bath*. After all, a bath attendant could mistakenly add too much ozone to the water, and in a room that is difficult to look into, it's easier to overlook a guest who has become dizzy or nauseous.

Richard Murray Schafer, *Klang und Krach - Eine Kulturgeschichte des Hörens*, Frankfurt am Main 1988.

Friedrich Jakob, *Die Orgel - Orgelspiel und Orgelbau von der Antike bis zur Gegenwart*, Bern 1977.

It's a highly artificial room, Peter Zumthor says, the entrance bisects the central axis from the long side of the *block*, to the left and right. There is a room, actually more of a small chamber, in the darkness a leather upholstered cuboid, on the floor a wooden grate, the fabric wall yields to the touch: inside the **SOUNDING STONE / KLANGSTEIN** it's as if outside noises have been switched off, and in conjunction with the darkness a sound that seems to come from far away moves closer and closer and awakens one's audio-sensory perception. *Wanderungen [Wanderings]*, as the installation by composer Fritz Hauser is called, was written for this room in 1996 using sounding stones by the sculptor Arthur Schneiter. *All sounds are produced by oscillating stones* - a small brass plaque outside the entrance informs us. According to natural therapists the vibrations produced by *stone sounds* can be perceived by the entire body and their effect is like a deep-tissue massage.

Fritz Hauser, sounding stones Therme Vals (CD and booklet), Vals 2000.

Much has changed during the course of design development, the *table construction*, however, was present from the outset, as was the *special slab suspended* above the *Indoor Pool*. In the end, each *block* is connected to a floor slab, aligned flush with this on one side, it also supports a roof slab, which is aligned flush with a different side of the block and cantilevering asymmetrically on the other three sides. The suspended roof slab over the *Indoor Pool*, by contrast, is held in place only by its neighboring roof slabs, buoyed up by four times four enigmatic blue prisms, which are unwilling to reveal their secret just yet, drawing the gaze of bathers upward, where the daring feat of the ceiling **CONSTRUCTION / KONSTRUKTION** inspires dazed amazement and speculation about the points of attachment.

The entire structure extends to a width of approximately 58 meters and cuts as far as 34 meters into the slope in front of the main building of the hotel complex, a unit erected in the 1970s and which stands at the northeastern corner of the property like a sweeping gesture with its four rows of loggias overlooking the grass-covered roof of the Therme. Fifteen rectangular stone blocks ranging from three to five meters in width and six to eight meters in length each support part of the roof. They are composed according to a strict grid of perpendicular lines and stand like monoliths arranged in a system of *pinwheels*. In the areas in between, there is movement - in the corridors, on the steps, in the pools, the *blocks* are positioned, therefore, in such a way that four of them demarcate the *Indoor Pool* in a *pinwheel* arrangement, in between, steps descend into the water or climb out, thus one *block* stands confidently on dry land on one side, demarcating relaxation spaces and defining circulation zones, and on the other it sinks into, or rises, rather, out of the depths. These *blocks* are the piers supporting the concrete roof slabs, some of which project outward more than six meters. The east façade running parallel to the valley reveals the tension with which these slabs support their own weight and that of the overlying layers, but it says nothing about the enormous prestressing within the slabs or about the tensile strengths that distribute the stress via the piers to the floor slab. The roof slabs do not touch, the joints between them are six centimeters wide, they assure the freedom of movement necessary for these massive elements.

Contained *inside* the *blocks* are intimate spaces reserved for special activities: bathing, cleansing, or relaxing - each is a *separate world* that holds its own *surprise*. At least seven steps descend into the water of the individual pools named after their

particular features. The *Fire Bath* is a rectangular room with an underwater bench along two sides of the pool and the corner in between, the water is 42°C, the red colored concrete wall heightens one's perception of temperature. The *Ice Bath* is a one-person immersion pool, the 14°C water and blue-green color of the concrete instantaneously quench physical and mental sensations of heat. Inside the *Drinking Stone*, springwater flows directly from the source into the supplied brass cups or the hollow of one's hand. In the *Flower Bath* marigold petals float in the warm 33°C water in a misty, fragrant atmosphere enclosed by black walls. In the *Sound Bath* the water is neck deep and 35°C, it is a very tall room with a square footprint, here the exposed faces of the stone slabs are broken, in contrast to the walls in the other spaces. Peter Zumthor calls the inner skeletons of the *blocks Betonhäuschen, concrete cores*, they are structures cast in one piece, they are the first to be erected, colored, water-tight concrete poured into the formwork: and so they stand for a while, jutting like towers across the construction site until one by one they are encased in *Styrofoam, extruded polystyrene rigid foam*, a moisture-resistant thermal insulation layer. These *concrete cores*, once constructed, serve as the inner formwork mold of the compound wall: working upwards 60 centimeters at a time - a precaution necessary to avoid sudden overstressing of the masonry - slabs of Valsgneiss are stacked according to the specifications of the *Steinschichtenplan*, or *stone-course-layering scheme*, the space in between is then reinforced and filled with concrete. The order of the individual work stages is specified in the execution documents.

While architecture critics refer to the building as a *mushroom structure*, a *rock-hewn spa*, or *grottos*, Peter Zumthor speaks of *tables* and *blocks*, of a *geometric cave system* and of caverns: *the building as a whole resembles a large porous stone*. One factor determining appearance is the choice of building materials, these consist above all of the natural stone of the area, Vals gneiss slabs, extracted and processed at the quarry on the other side of town: all the stone roofs in the village use these slabs. For the Therme, the stones are given a rough-sawn, bush-hammered, ground, or polished finish, the walls are built according to the exact specifications of the *stone-course-layering scheme* using three different slab thicknesses, during the construction phase this outer wall also serves as permanent outer formwork mold for the reinforced concrete wall on the other side, or in between: in the design documents this construction method is referred to as *Valsler Verpund*, and has gone down in architecture history

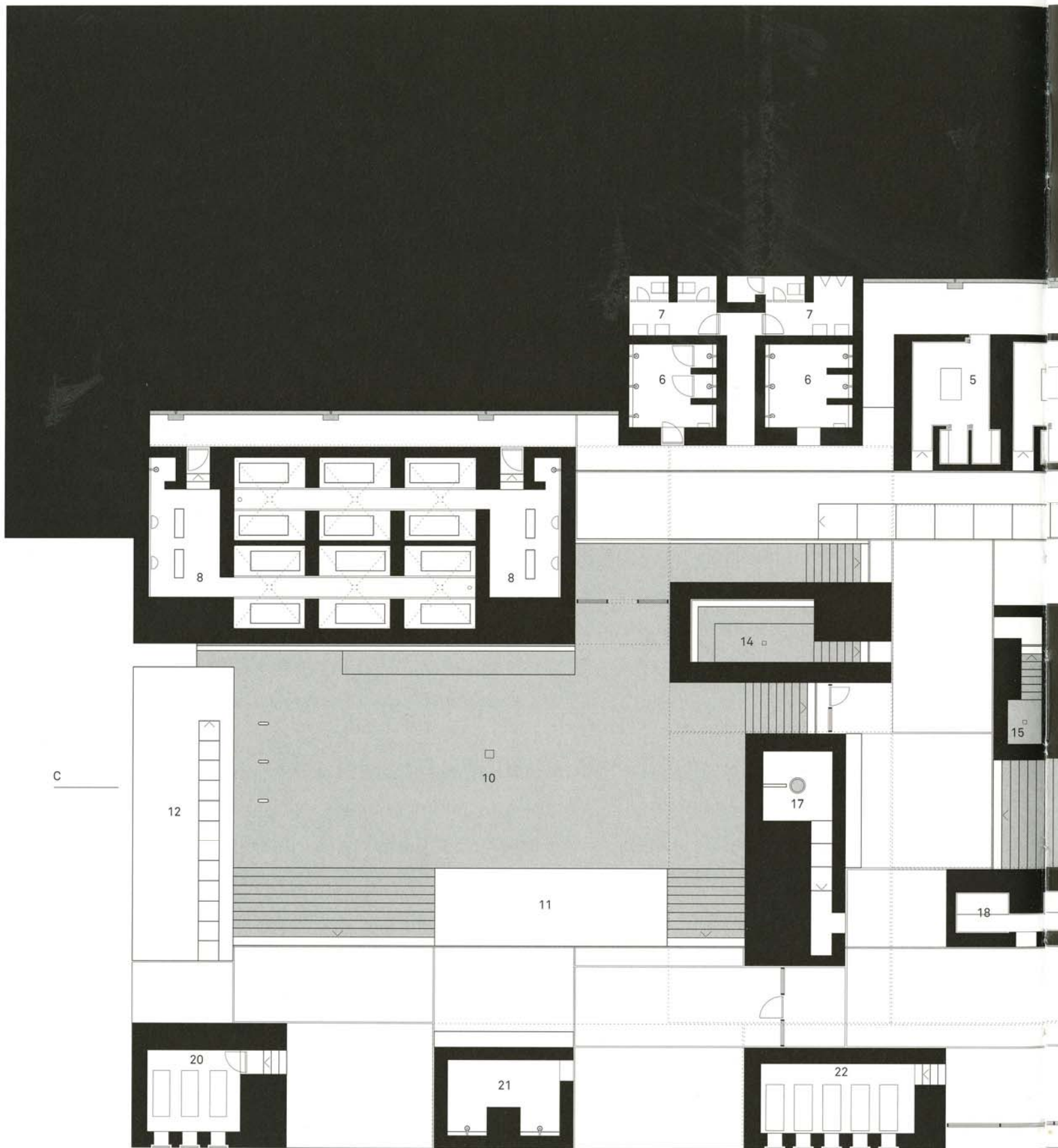
as *Valsler Verbundmauerwerk [Vals Compound Masonry]*. The outer wall is thus both the outer skin and an integral structural component that absorbs and helps carry the loads.

The various types of design documents enable a reconstruction of the building process, allow a reading of the building's structure: there are *construction drawings, details, and publication drawings*, there are *stone-course-layering schemes* and design plans that specify the structural layout of the ceilings and floors. There was no construction or engineering precedent for the entire building and therefore no way of relying on experience either, each detail was calculated and specified by drawings. *It was an enjoyable process* for all the companies and workers involved in the project, says Peter Zumthor - not just for himself.

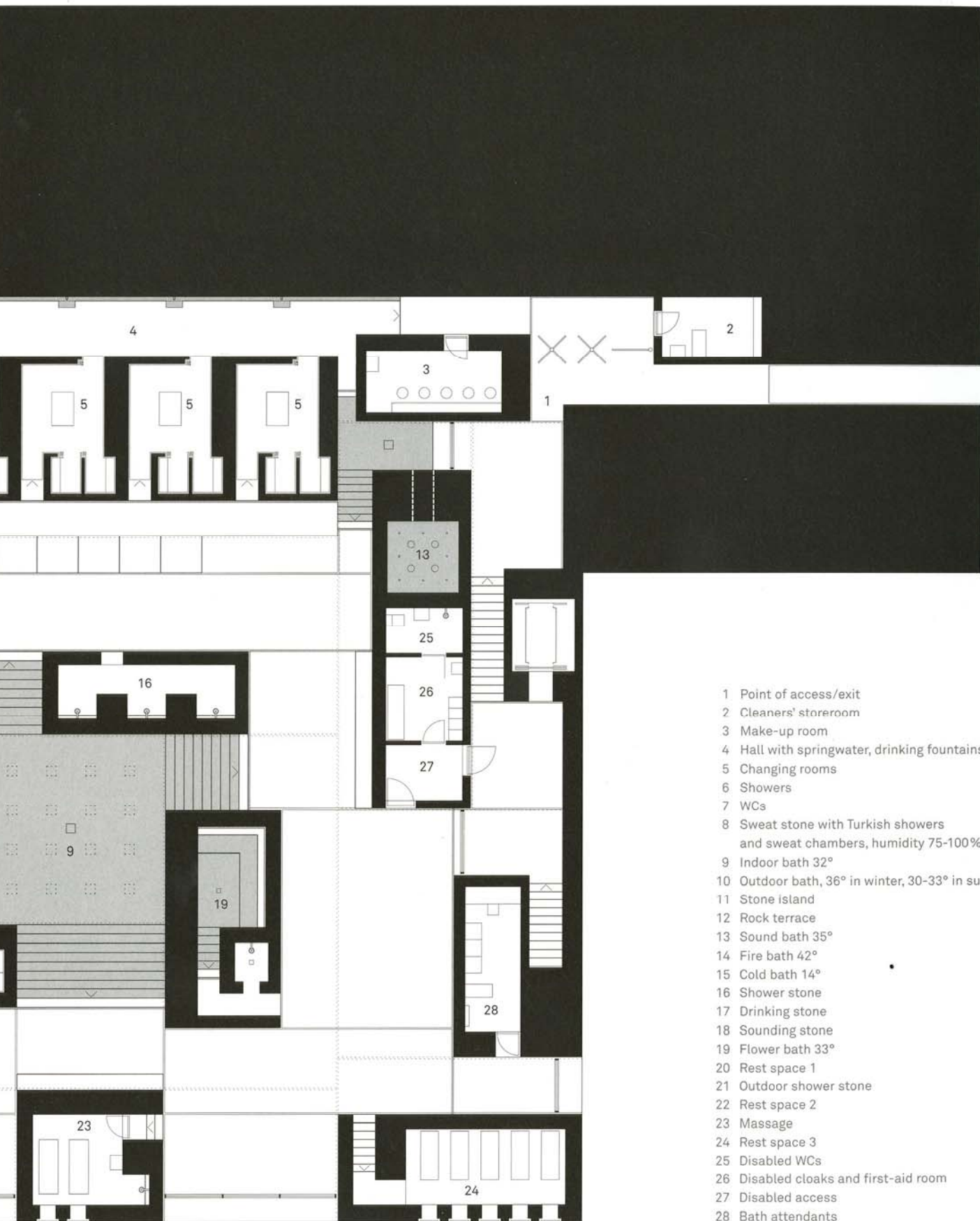
Peter Zumthor, Thermal Bath at Vals, London 1996.

Peter Zumthor, Works Buildings and Projects 1979-1997, Baden 1999.

Martin Tschanz, Das spezifische Gewicht der Architektur - Ein Gespräch mit Peter Zumthor, in: *archithese* 5/96, Zürich 1996.



Plan: bathing level

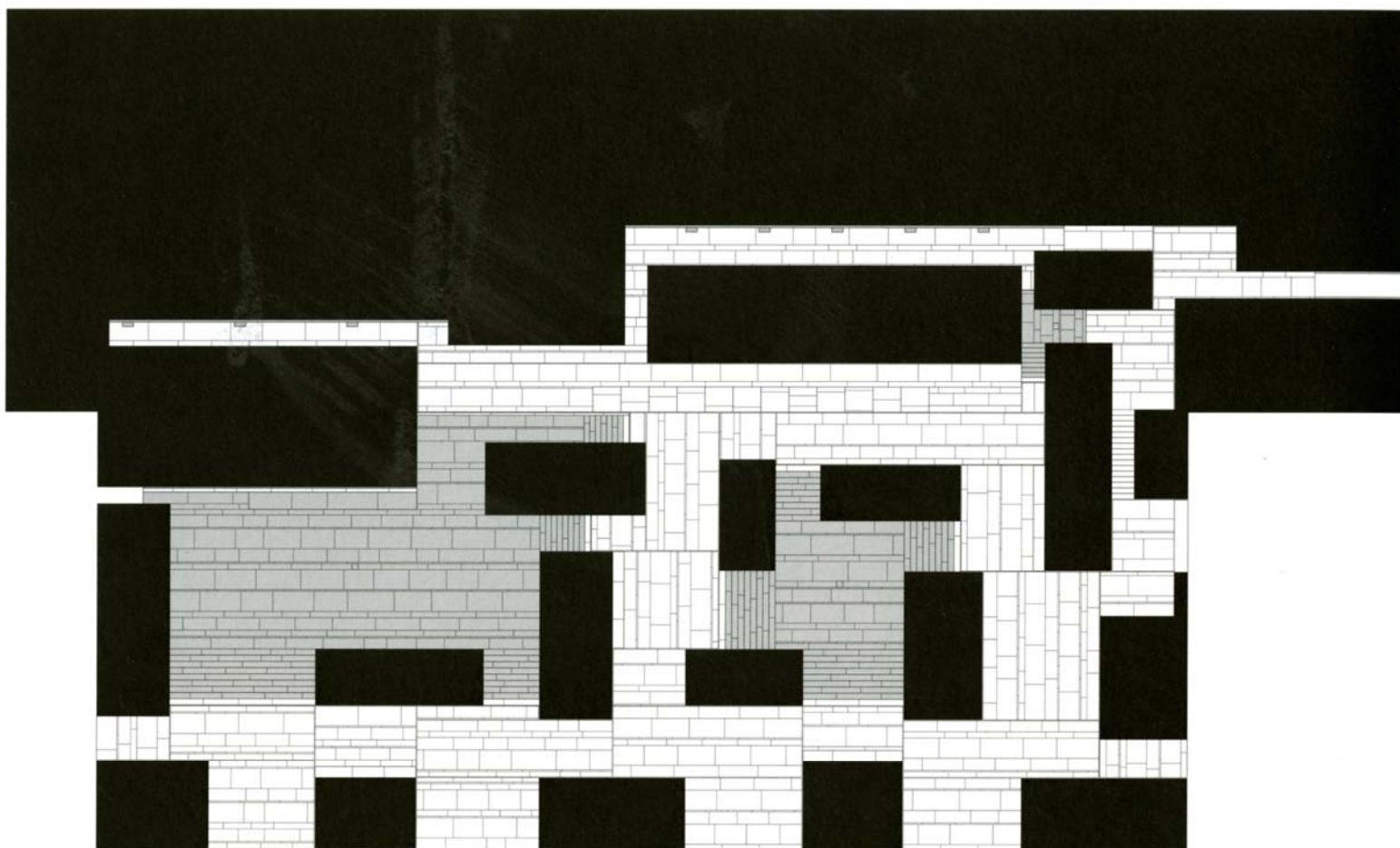


- 1 Point of access/exit
- 2 Cleaners' storeroom
- 3 Make-up room
- 4 Hall with springwater, drinking fountains
- 5 Changing rooms
- 6 Showers
- 7 WCs
- 8 Sweat stone with Turkish showers and sweat chambers, humidity 75-100%
- 9 Indoor bath 32°
- 10 Outdoor bath, 36° in winter, 30-33° in summer
- 11 Stone island
- 12 Rock terrace
- 13 Sound bath 35°
- 14 Fire bath 42°
- 15 Cold bath 14°
- 16 Shower stone
- 17 Drinking stone
- 18 Sounding stone
- 19 Flower bath 33°
- 20 Rest space 1
- 21 Outdoor shower stone
- 22 Rest space 2
- 23 Massage
- 24 Rest space 3
- 25 Disabled WCs
- 26 Disabled cloaks and first-aid room
- 27 Disabled access
- 28 Bath attendants

THE CONSTRUCTION A mass of stone. The entire building is of a single mold and a single material: stone. Stone, that is to say sand, gravel and cement mixed to make concrete, and gneiss from Vals. A visible distinction between the superstructure and the subsequent use of cladding or covering on the surfaces of the building is the exception. For the most part, the structural work, the superstructure, is already the finished building. We look and walk around in the primary structure; where the water flows and is contained. The anatomy of the finished baths, the immediacy with which we experience their construction, matches the quarry pictures that we started out with.

Artificial monolith. We achieved our design goal of producing large stone masses with a monolithic appearance through the layering of long, thin slices of stone. All these many superimposed slices of different thicknesses create an expansive, layered pattern, an intricate horizontal stratification of the kind one might also see in nature.

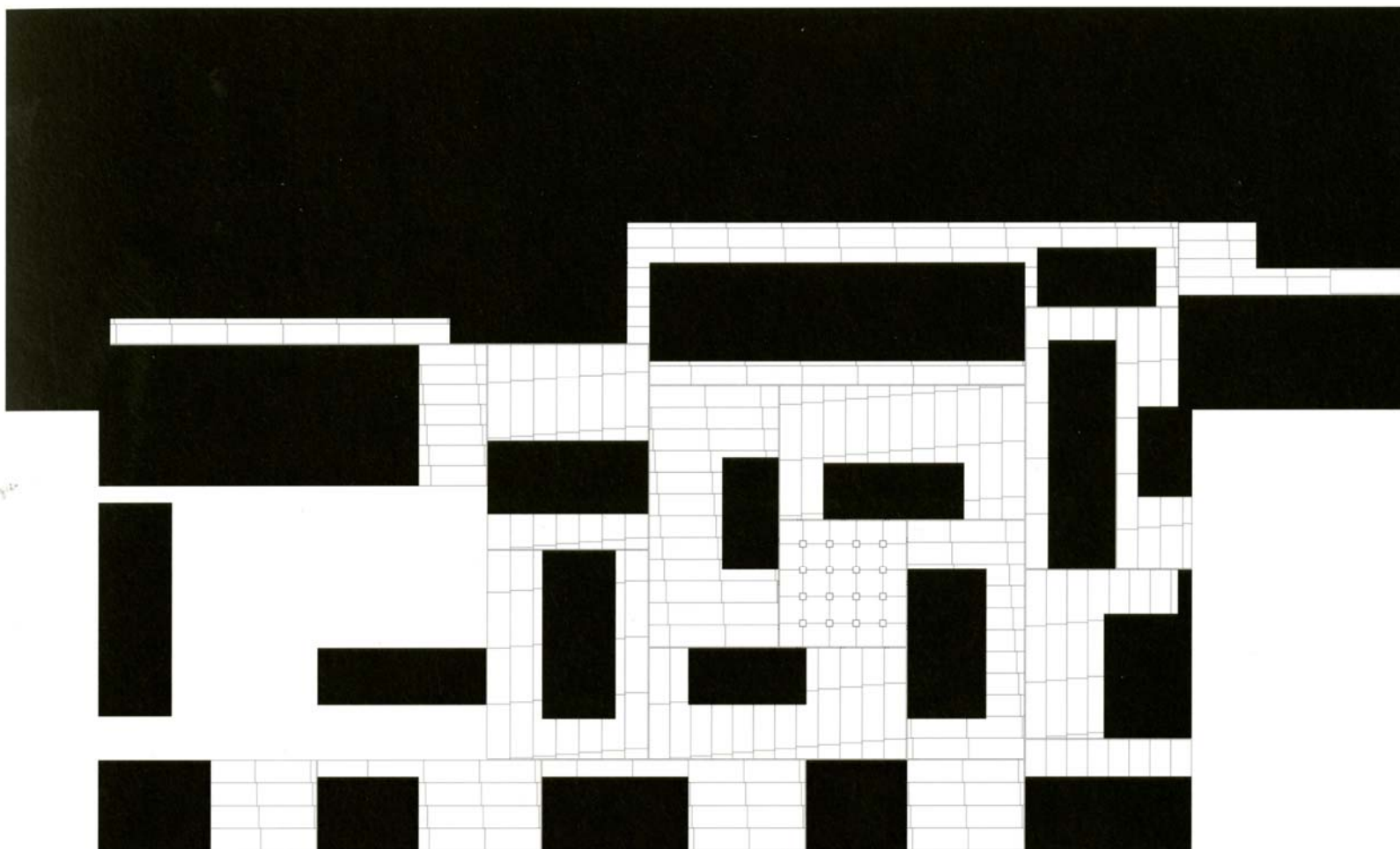
The masonry devised for the thermal baths is specifically designed in response to the material properties of the stone and the technique used to cut stone in the quarry. Gneiss from Vals has a platy, long-grained mineral structure; it is easy to split and can be cut economically into thin slices of considerable length. These slices or



Block structure: bathing level with stone floor pattern

bands are relatively elastic and not overly sensitive to impact; they are easy to transport and easy to handle because the single slices are not too heavy.

Vals Compound Masonry. In the construction of the baths, stone and concrete are combined in a special way: section by section, stone slices of different widths and lengths are stacked on top of each other, with concrete poured onto the back creating a firm bond between the stone slices and the "liquid stone," as seen in the drawing on page 110. On the exposed side of the wall the slabs are stacked flush on top of each other but they are staggered in the back where the concrete is poured. In the case of a double-front construction, as we call it, concrete is poured into the space between two walls of stacked stone. In single-front construction, one side consists of stone and the other of concrete. The concrete is then poured into the space between the wall of stone slabs on one side and formwork on the other. This method, developed specifically for the construction of our building, has come to be known as Vals Compound Masonry. There are also walls of solid concrete. We used exposed concrete for all the walls built into the mountainside that are accessible to the public and also inside the blocks, where the concrete is pigmented.

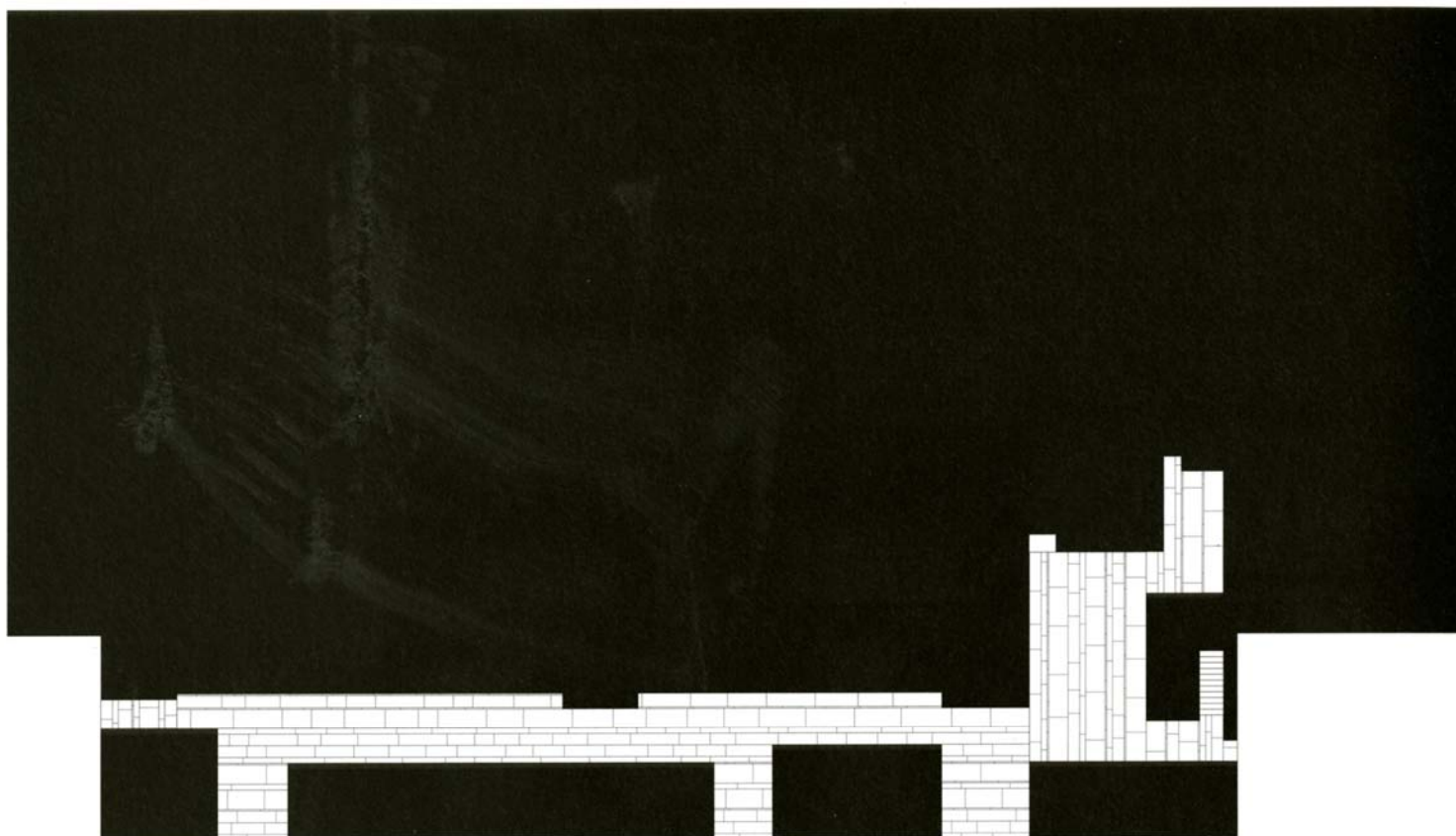


Block structure: bathing level with skylights, ceiling slits, and formwork pattern of the ceiling slabs

Expansion Joints. The building materials and the construction of the thermal baths must meet extremely exacting demands. Building materials move; they expand when it is warm; they contract when it is cold. Building materials change shape when they bear loads, when they are subjected to push and pull. Such forces have an exceptional impact on thermal baths: big pools of water are filled and emptied; enormous loads are imposed and removed. There is also a great difference in temperature and humidity between in- doors and outdoors. On a cold winter's day, the walls of the outdoor pool may have cooled off to minus 15 degrees and must be able to withstand immersion in +36-degree water. In order to cope with problems of this kind, construction engineers generally work with preplanned "cracks," so-called expansion joints: they divide the architectural volume into sections which can each independently expand or contract, rise or fall.

The open joints on the floors and ceilings, incorporated in the design from the beginning, proved to be fortuitous. The mighty ceiling slabs above the pillar blocks, made of prestressed concrete, can move freely. The sketch on page 69 shows how the expansion joints of the building have been integrated into the floor pattern of the specified design.

For the lower part of the building, from the horizon of the water and the floors on the bathing level downwards, more complex solutions had to be devised. The wish to have homogeneous blocks of masonry rise up out of the water without any horizontal joints and to have the stone pools and their stone environment experienced as a single, connected mass led us to construct these parts of the building correspondingly.



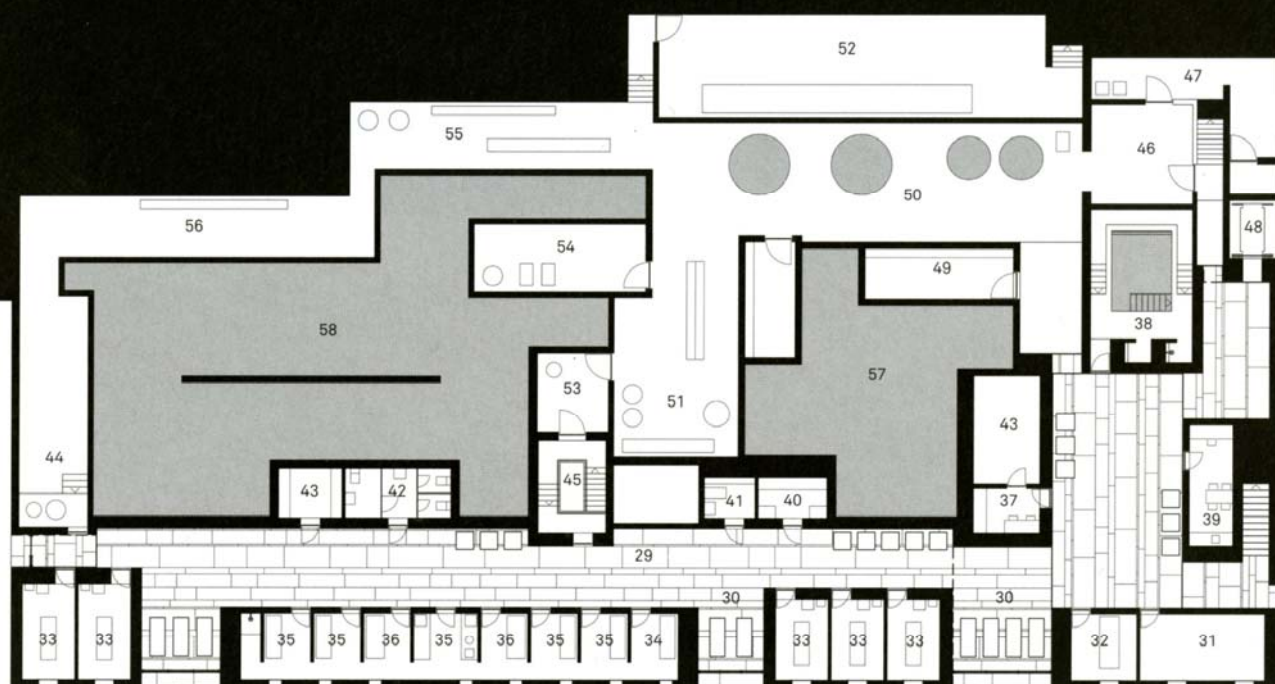
Block structure: therapy level with stone floor pattern

The structural engineer Jürg Buchli devised sophisticated means of satisfying our demands. The cross-section reproduced on pages 108/109 illustrates the basic features of the chosen concept: down below, the concrete structures are homogeneous, up above the volume separates into single "stone tables." In the middle of the cross-section, a large connected basement area can be seen with ceiling slabs, freshwater reservoirs and building services, which forks into two freestanding "stone tables" with projecting slabs at the top.

On page 108, one can see the block of changing rooms and the long flight of shallow stairs leading down to the bathing level, the latter designed to glide freely on the ceiling slab of the water treatment area below. The front of the building facing the valley appears as a monolithic element of several stories, the top of which once again evolves into a table, and one is amazed to realize that the entire block of changing rooms above the ventilation and water treatment

- 29 Waiting areas
- 30 Rest areas
- 31 Physiotherapy
- 32 Underwater massage
- 33 Massage
- 34 Orthopaedic bed
- 35 Fango, fango prep room
- 36 Medicinal bath
- 37 Inhalation
- 38 Aquatherapy 36°
- 39 Tea kitchen
- 40 Laundry store
- 41 Cleaner's storeroom
- 42 Toilets
- 43 Storeroom

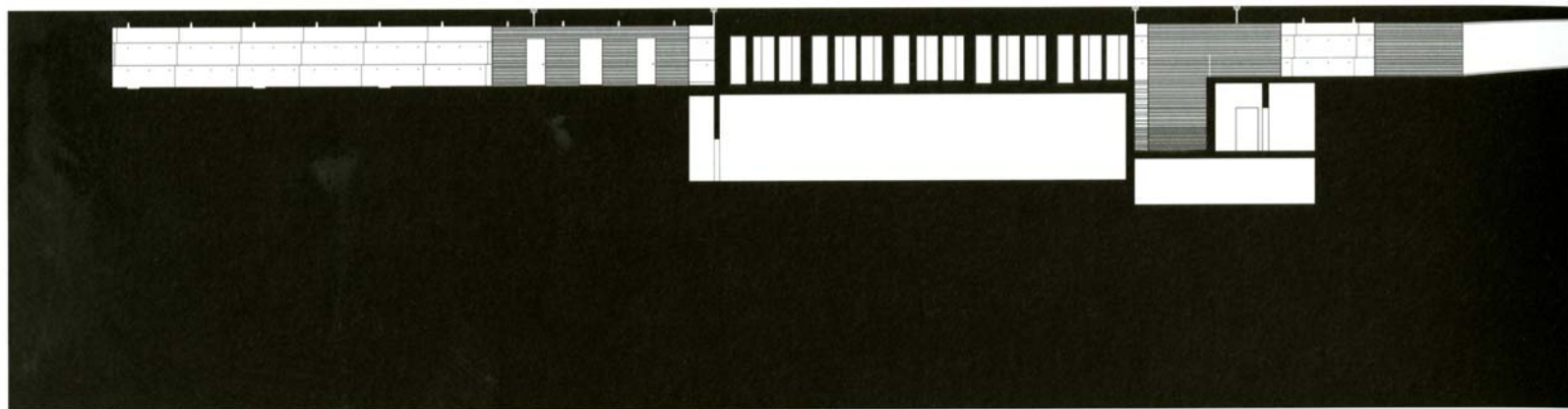
- 44 Plant access
- 45 Plant stairs, sub-floor
- 46 Flower bath equipment
- 47 Chemicals
- 48 Lift machinery room
- 49 Electricity plant
- 50 Water treatment
- 51 Main sanitation plant
- 52 Air-conditioning plant
- 53 Carbonic acid
- 54 Fire bath plant
- 55 Clone treatment
- 56 Secondary sanitation plant
- 57 Freshwater tank
- 58 Wastewater tank



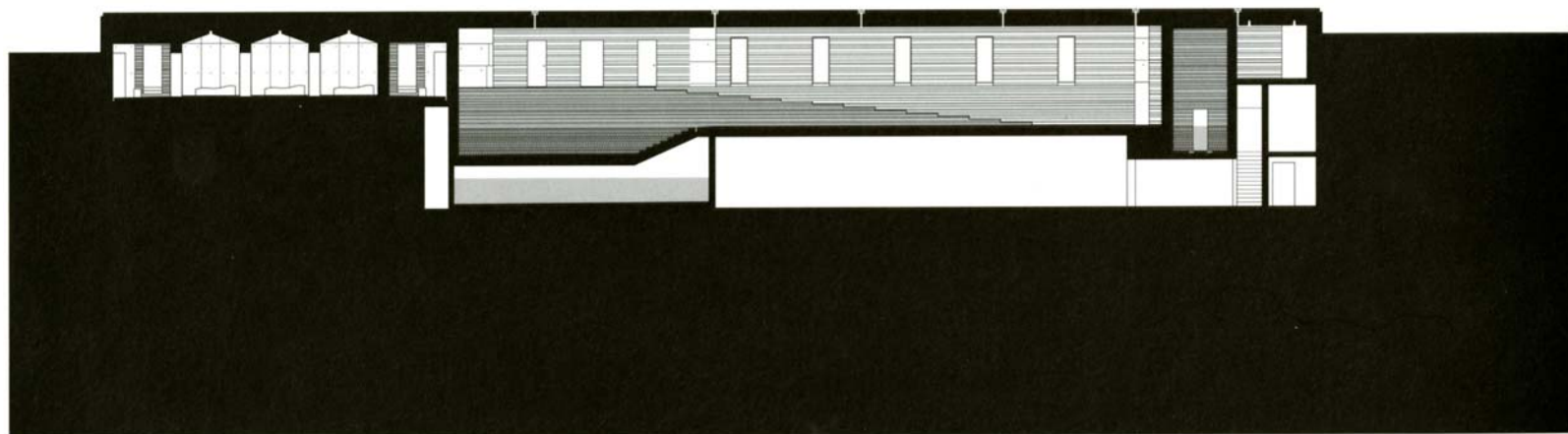
Floor plan: building services and therapeutic facilities

facilities, rooms 340 and 341, is firmly and seamlessly connected to the main central body. The principle: at the top where the structure is exposed to wind and weather, to the climate change between indoors and outdoors, it is divided into smaller sections that allow movement. The basement containing the maintenance facilities, which supports the entire structure, is a homogeneous unit. The building is situated in the groundwater. It was imperative to avoid joints in the basement unit. The basement floors are a plinth that holds everything together but its construction is soft enough to absorb the impact of movement from above without impairment.

Insulation. The system of insulation varies throughout the building; it is adapted from case to case to suit the architectural and structural givens. It was our goal to work the insulation into the structural mass of the building in such a way that the body of the building could retain its structural integrity. The cross-section of the building reproduced in the execution plan on pages 108/109 shows how the different kinds of insulation are combined. Layers of insulation cover the side of the building facing the mountain and the roof, where it is underneath a layer of soil. This system applied to the exterior of the building is known as perimeter insulation. Double- 104



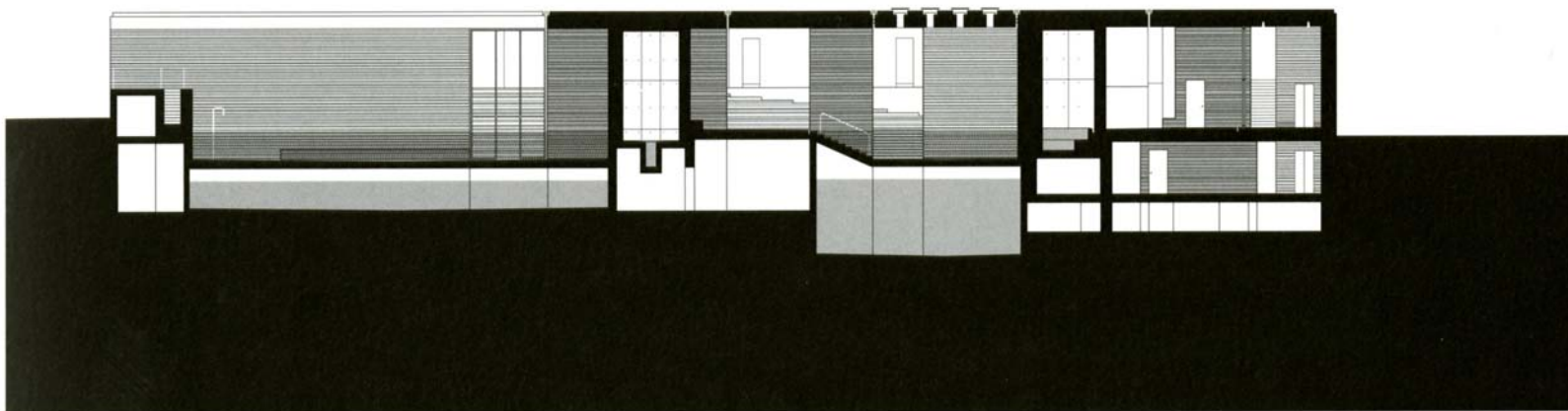
Longitudinal section A



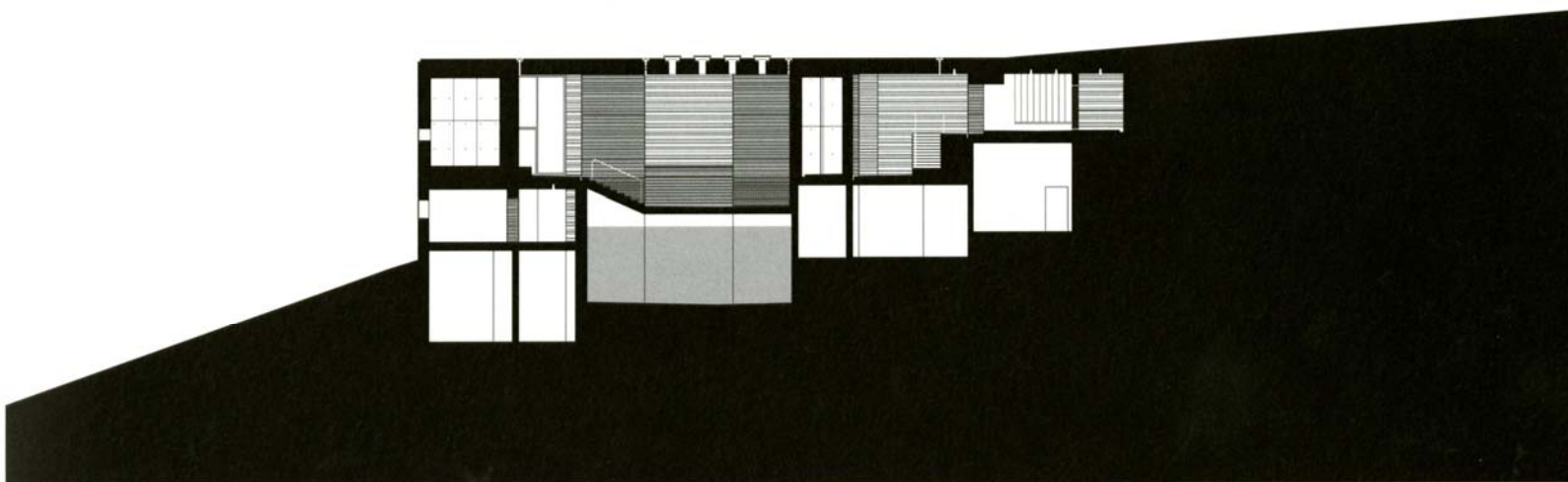
Longitudinal section B

shell insulation is used for the blocks that form a transition between inside and outside. Here a layer of insulation is placed between the walls of the pillar block made of Vals Compound Masonry, which supports the roof slab, and the freestanding concrete box within the void of the pillar block.

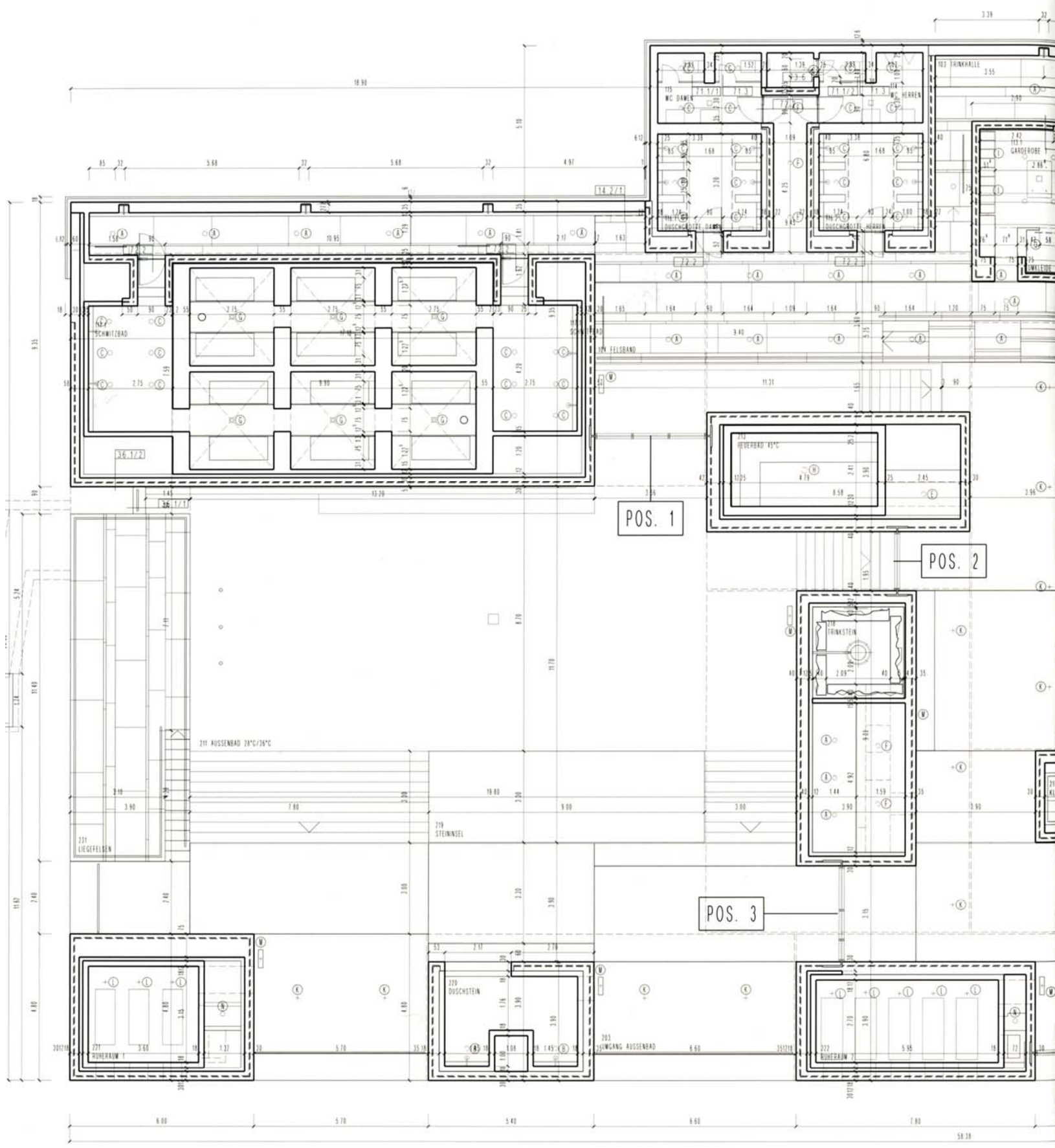
Connection between windows and insulation. In order to connect the large, insulated glass windows with the insulation on the roof, a slit cut into the ceiling slabs above the windows was filled with insulation material. Before the building was finished, one could see the two separate parts of the ceiling projecting independently from the pillar blocks. Transverse steel supports through the dividing slit were not necessary. The part of the ceiling that projects outdoors in front of the windows is strong enough to be self-supporting.



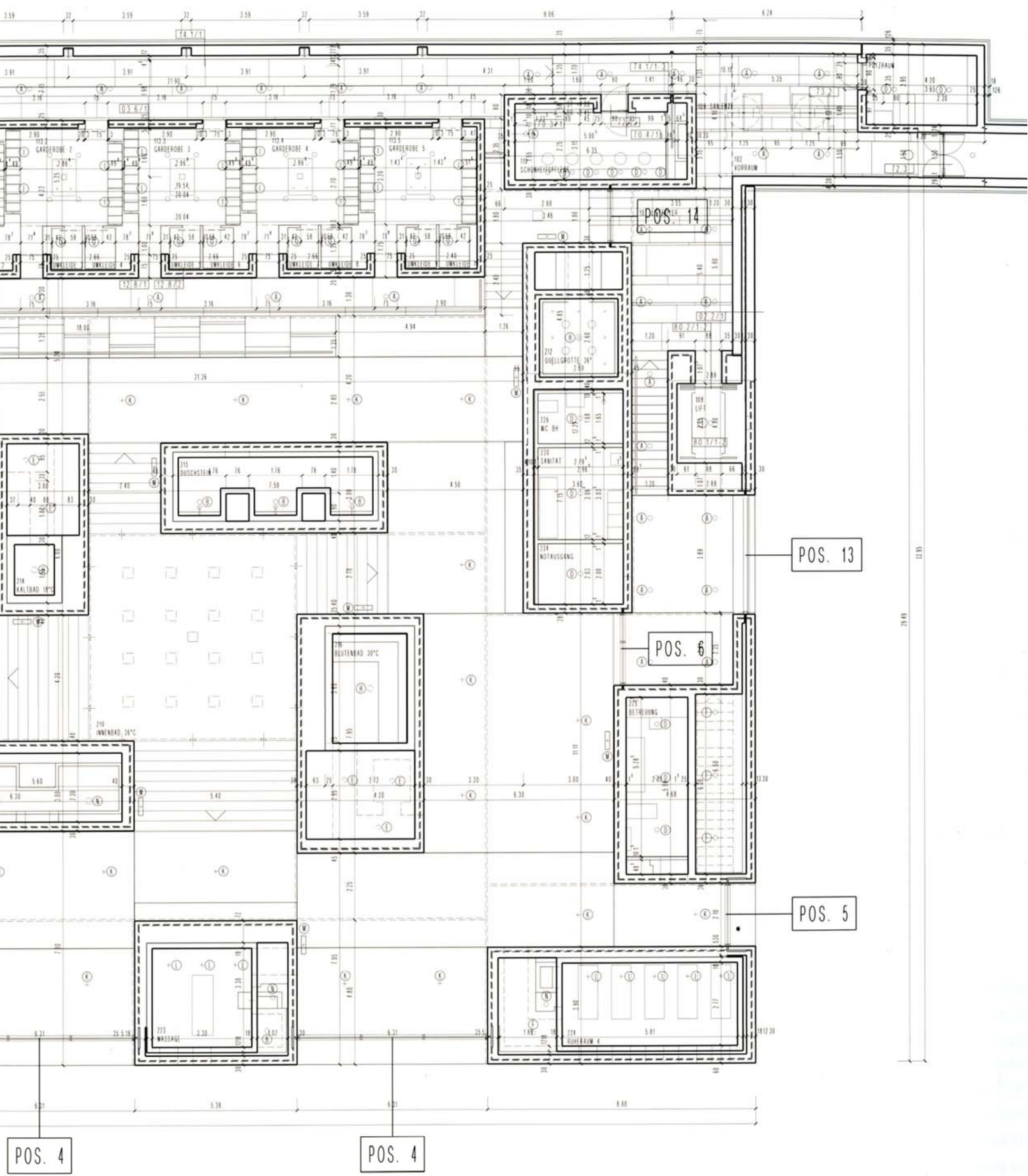
Longitudinal section C



Cross section D



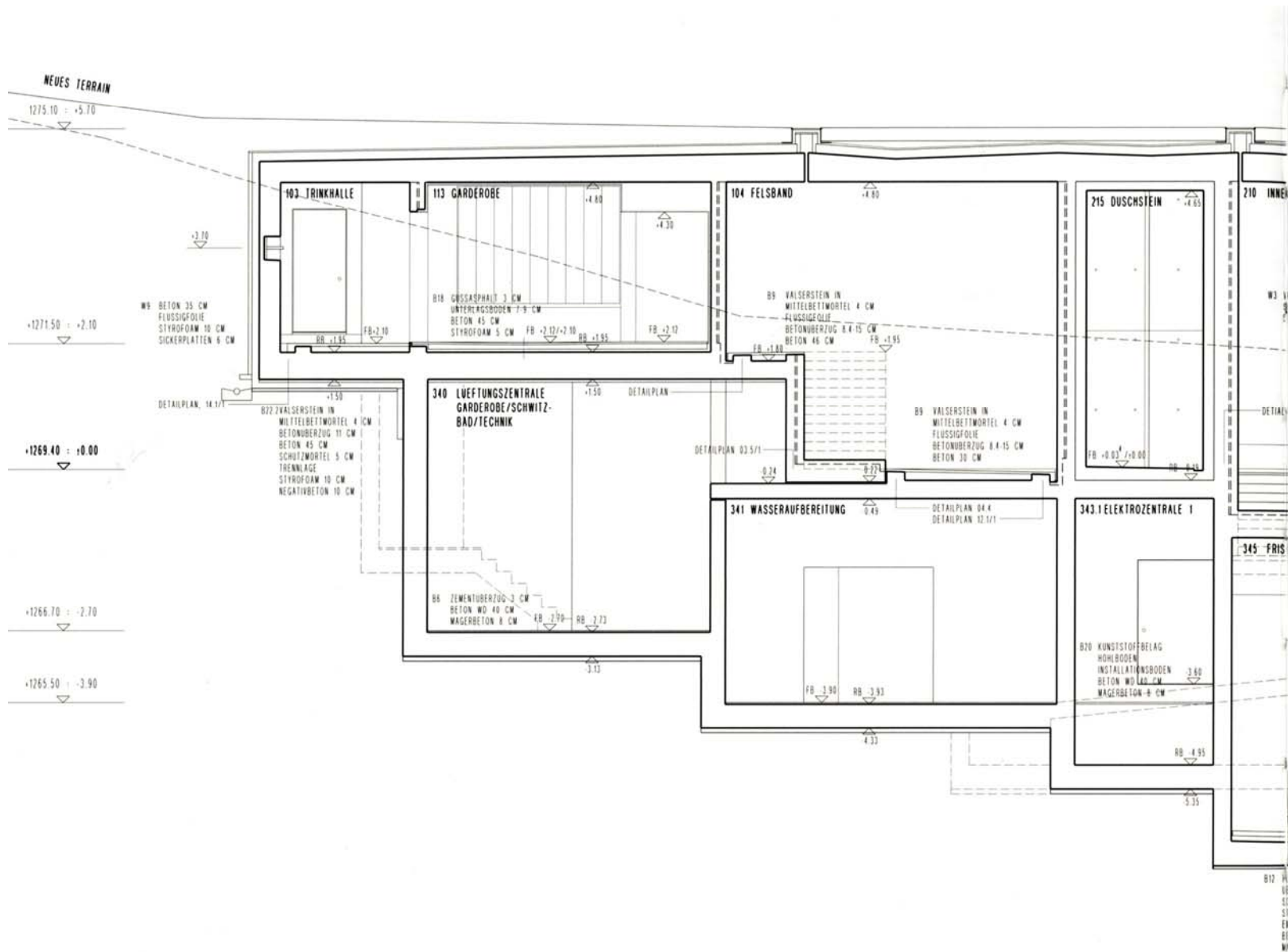
Execution plan: floor plan



To connect the windows with the wall insulation of the adjoining block, we added a T-shaped piece of insulation to the sides of the windows, which were then incorporated in the bonded masonry. The long crossbar of the T is walled into the masonry at a right angle to the window and parallel to the insulation, which is inserted between the two walls of the pillar block. It overlaps the insulation of the wall by at least 70 cm. This reduces the so-called thermal bridge effect, that is, the flow of heat between indoors and outdoors.

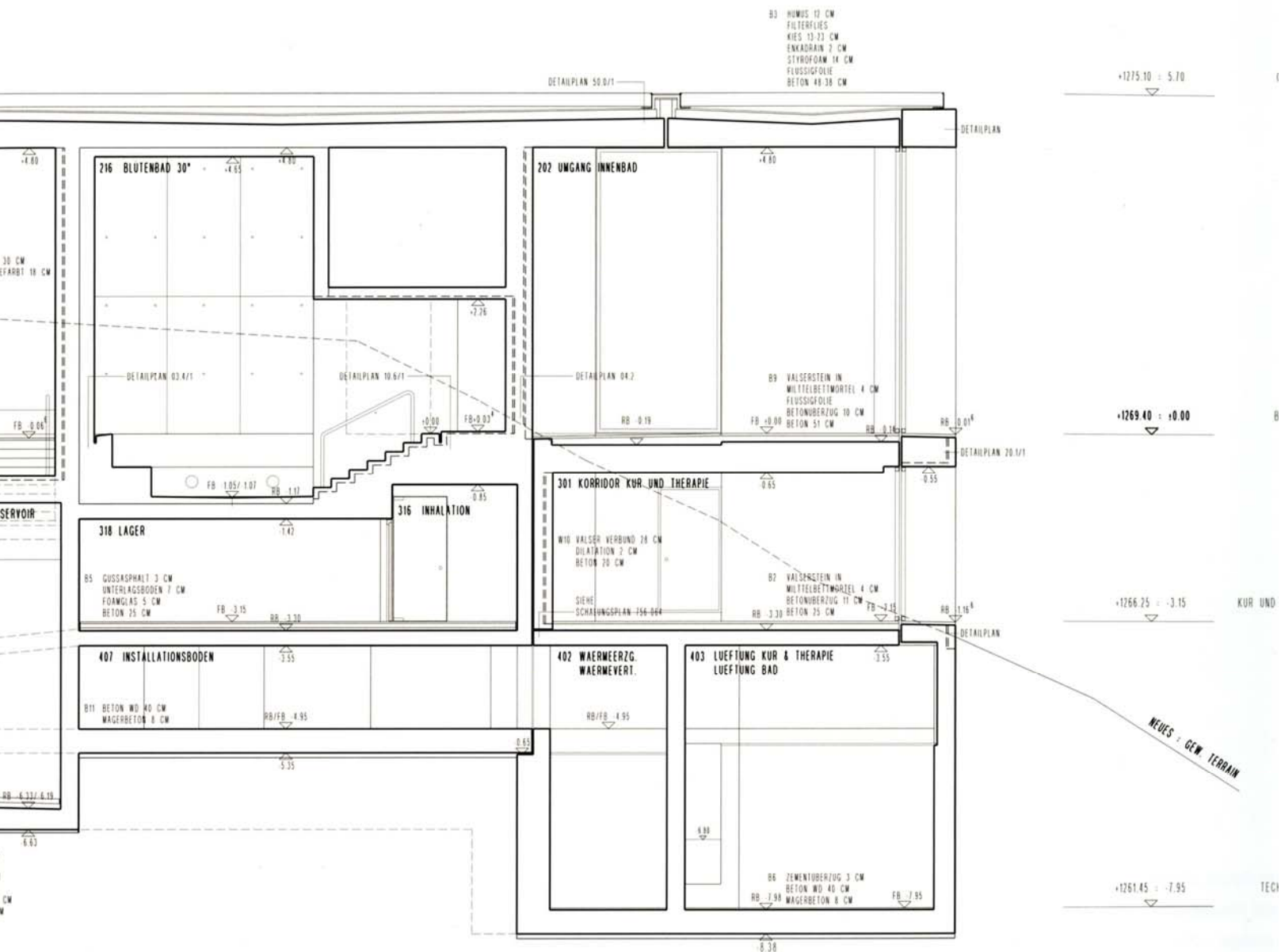
And in addition, the wall of the pillar block meets the structural requirement of remaining intact. In the floor plan on pages 106/107, the hammers, as we call the T-shaped sections of insulation, can be seen in the masonry next to the windows.

Waterproofing. Two different systems were used to protect the building from groundwater and rainwater, to avoid uncontrolled overflow in the pools and gullies, and to waterproof the stone floors in



the bathing areas. So-called rigid waterproofing consists of waterproof concrete or bonded masonry. Waterproofing is achieved by reinforcing the concrete sufficiently to prevent cracks. However, a certain amount of humidity still seeps through. And since possible leaks cannot be ruled out entirely, this method can only be used if the back of the wall that is exposed to water on the inside is unobstructed to allow observation and maintenance at all times, and if it does not have to satisfy any aesthetic requirements.

The floor slabs of the building, the underground services of the baths as well as the pools and water reservoirs are all insulated in this way. All those parts of the building that had to be waterproof but which maintenance could not access freely from the back or from below were sealed with a so-called liquid membrane, a seamless synthetic coating that is applied like a coat of paint: the roof, the wall of the changing rooms facing the slope, the floor of the areas in front of the showers and around the pools on the bathing level.

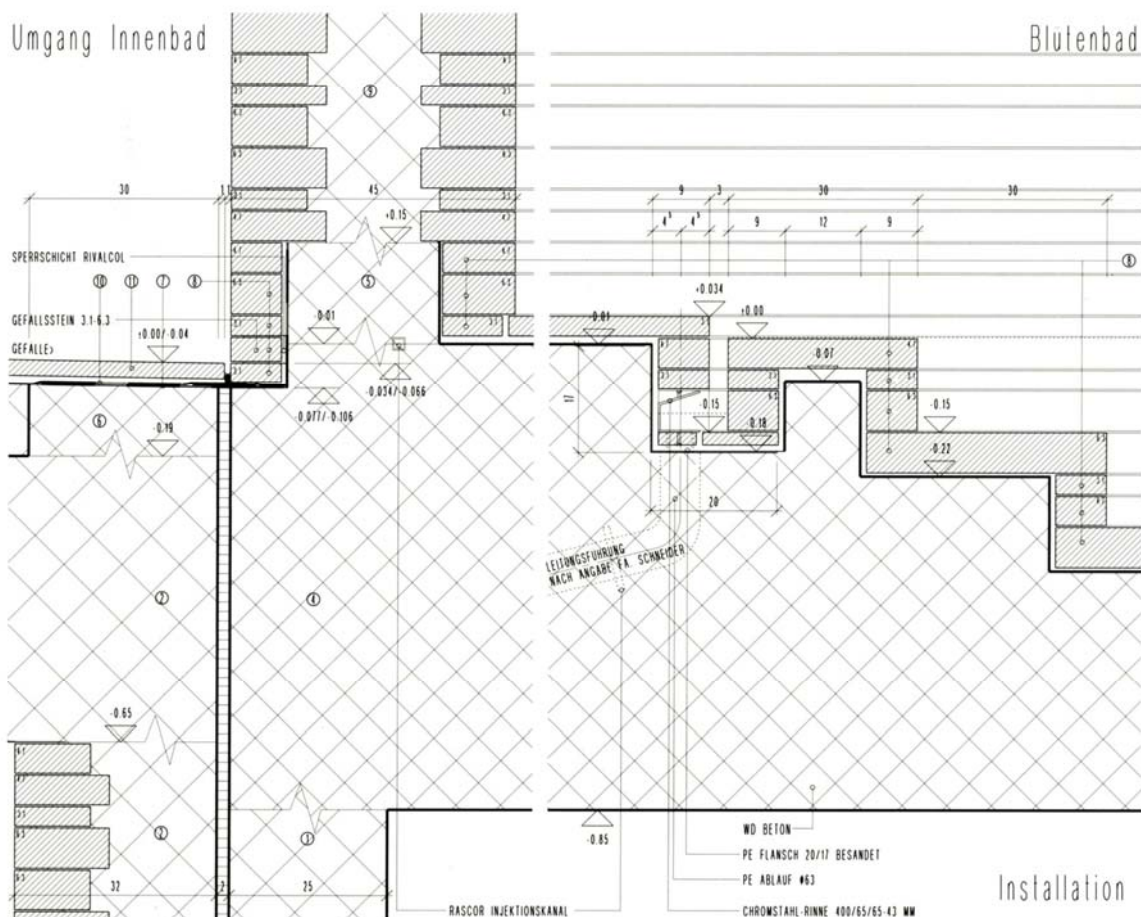


The detail above shows the comparatively simple construction of rigid insulation in the Flower Bath and the considerably more complicated construction for the lateral application of liquid membrane around the indoor pool. The numbers one to eleven in the round circles, each assigned to one component of the building, show the 11 steps involved from pouring the first wall of concrete in the basement to laying the stone floor around the indoor bath. First the small concrete base (5) must be poured, the floor sealant (7) must be wrapped up the side of the base, and a wall of five stones constructed in front of it (8). Only then can construction of the compound masonry begin, in this case, the double-front construction in which concrete is poured into the space between the two walls of stacked stone (9).

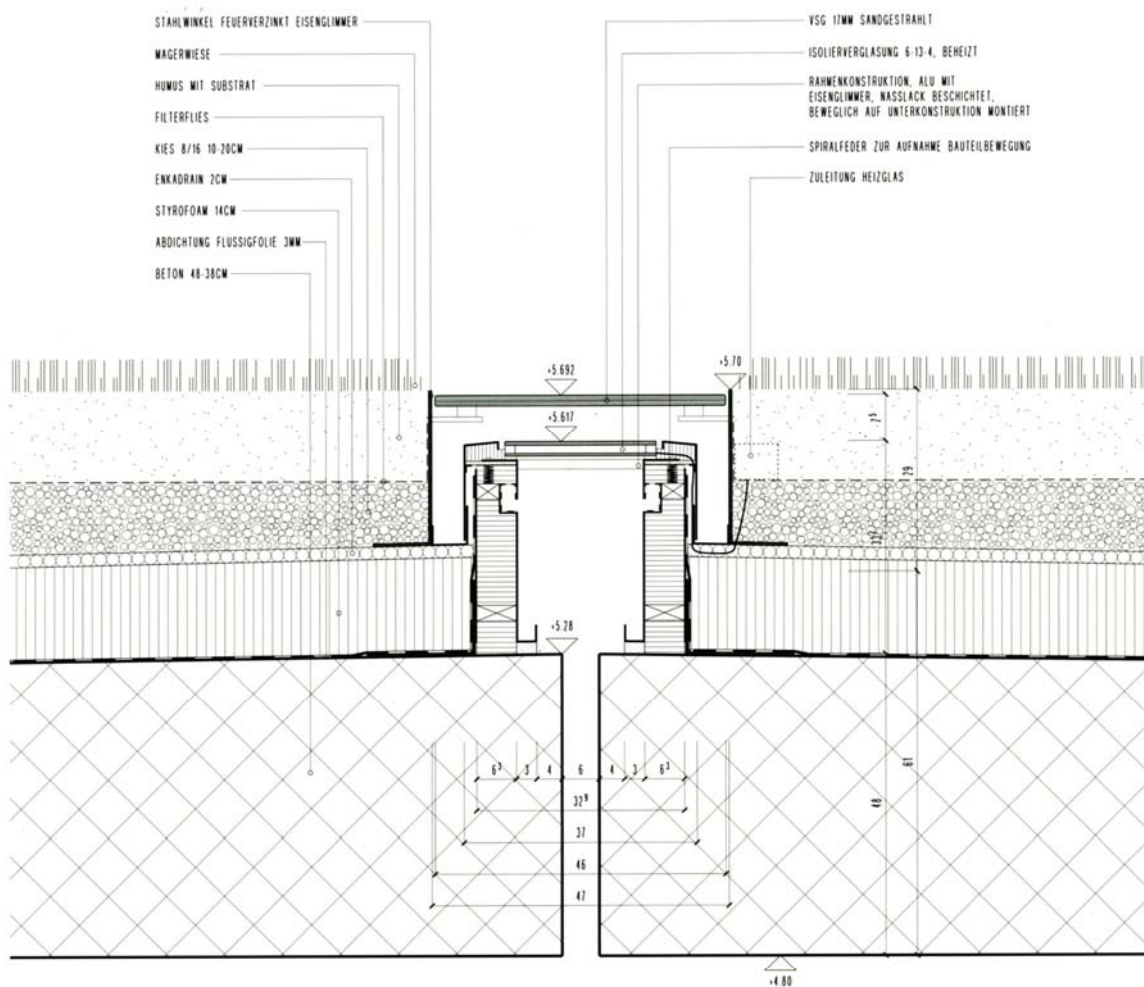
The example is telling: the integration of waterproofing, insulation and expansion joints in the stone mass of the building required a high level of complexity in the invention of customized construction and work procedures. The building looks simple. The complexity is hidden in the mass.

The stone bond. It all adds up: we had the stone slices cut in the quarry to three thicknesses, 31, 47 and 63 millimeters. These three thicknesses along with three mortar joints of 3 millimeters each yield a total of 15 centimeters. The entire stone mass of the building is based on increments of this basic unit: the floors, the lintels, the sills of windows and doors, ceiling soffits and all of the stairs. The reason: the 15 centimeters correspond to the height of a step.

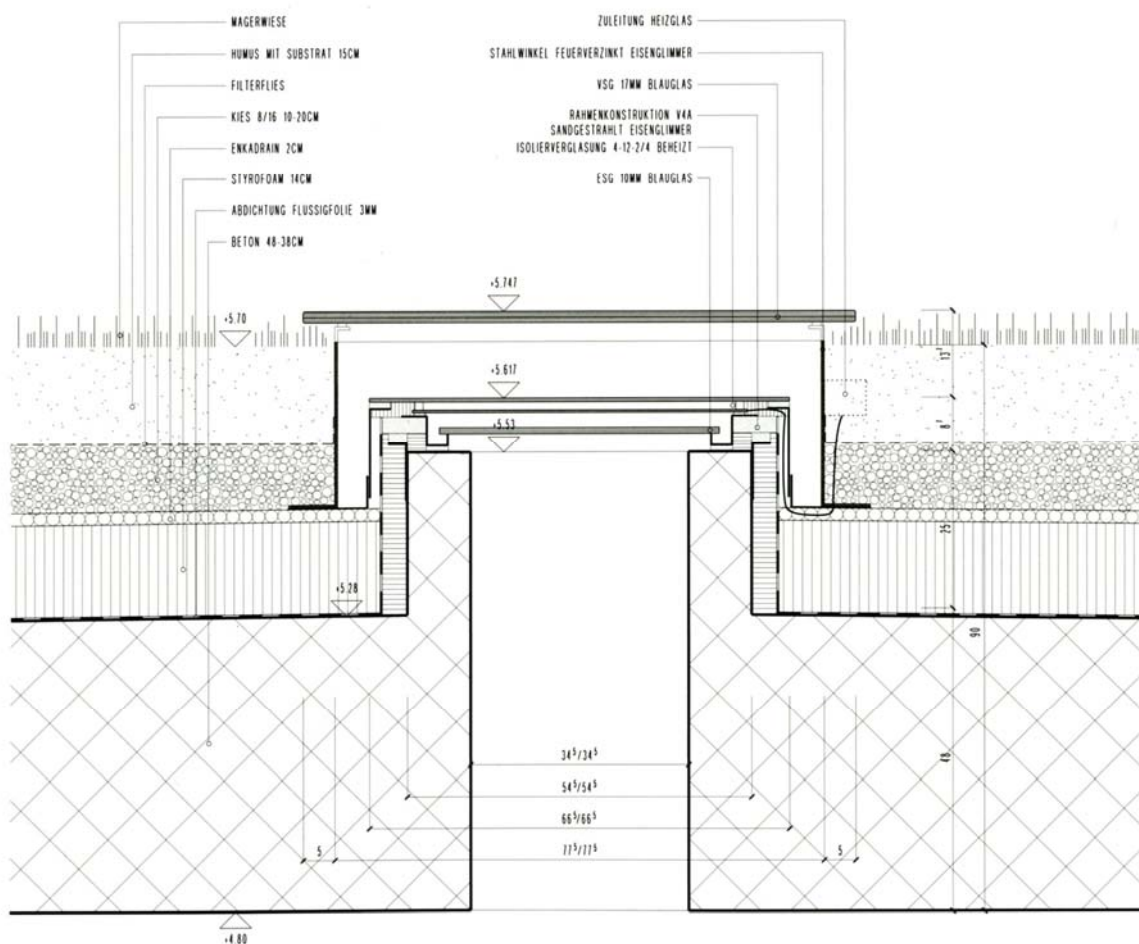
Detail plan: transition pool – flower bath



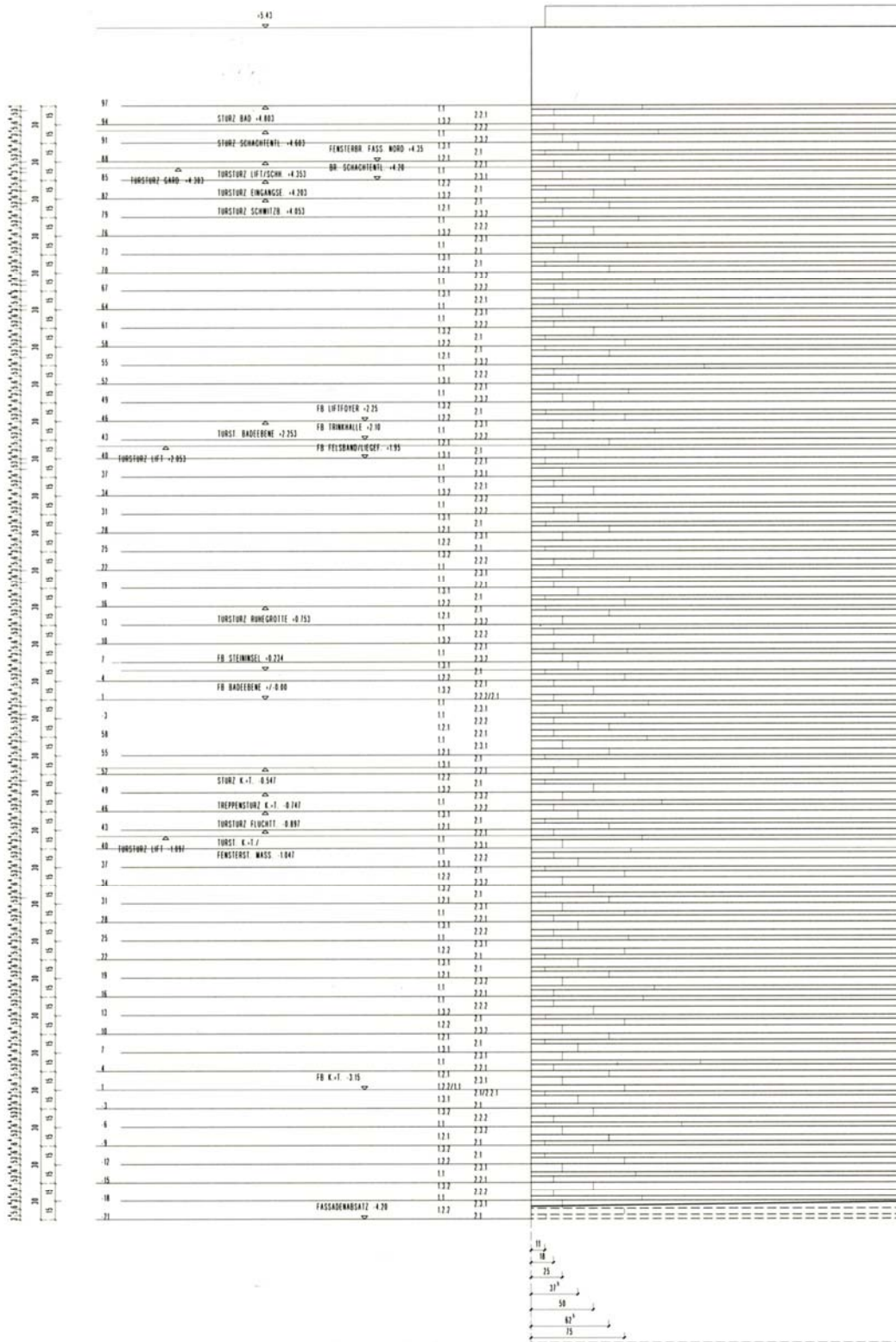
Detail plan: skylight – glazed joint



Detail plan: skylight above indoor pool



In order to weave these layered stones and joints into a fabric whose texture flows in an even, uninterrupted rhythm, varying sequences of the three thicknesses within the 15-centimeter grid were selected and defined. With the same objective of generating a regularly irregular image, special cornerstones were selected for each of the, corner bands and executed according to plan. Between the corner bands, the stone masons were free to choose the length of the stones, though with two specifications: a minimum overlap and a minimum overall length of each stone.



SCHICHTENFOLGE (GANZES BAD)
SCHICHT NR.

STEINTYPEN (IM ECKVERBAND)

Designing nature. Marc Loeliger developed the "Stone Laying Score" pictured on this double page, to be used as a manual of instruction for the stone masons on the construction site. The masons, who did an excellent job, were disappointed for a brief moment when the slits in the ceiling were opened for the first time. The shafts of light washed the walls of their finished work, causing tiny irregularities in the stone bond to cast dramatic shadows. But watching this optical illusion, which at first sight seemed to suggest a job poorly done, soon turned into pure delight.

SCHICHTENFOLGE INNENBAD

SCHICHT NR.	STEINTYPEN (IM ECKVERBAND)
1	122 221
2	122 21
3	122 21/2/21
4	122 21
5	122 222
6	11 21
7	121 21
8	121 221
9	11 221
10	11 221
11	121 222
12	122 21
13	121 221
14	121 21
15	122 222
16	122 21
17	121 221
18	121 21
19	122 21
20	121 221
21	121 21
22	122 21
23	122 221
24	121 222
25	121 222
26	121 222
27	121 222
28	121 222
29	11 222

SCHICHTENFOLGE AUSSENBAD / QUELLGROTTE

SCHICHT NR.	STEINTYPEN (IM ECKVERBAND)
1	122 221
2	122 21
3	122 222
4	122 222
5	122 21
6	121 21
7	121 21
8	11 221
9	122 221
10	122 21
11	121 21
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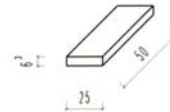
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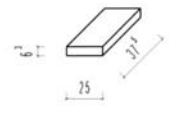
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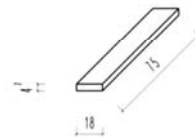
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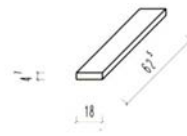
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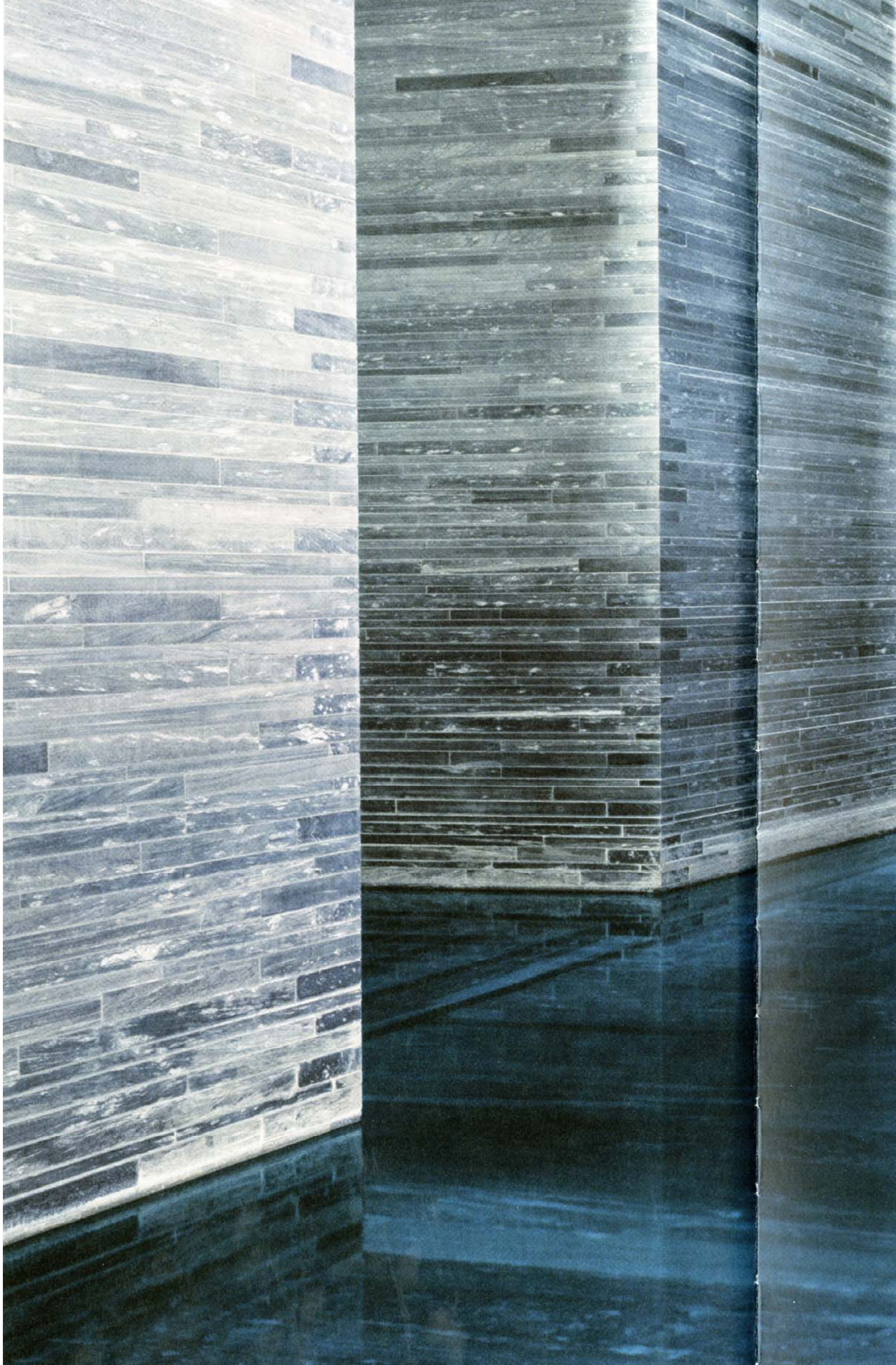


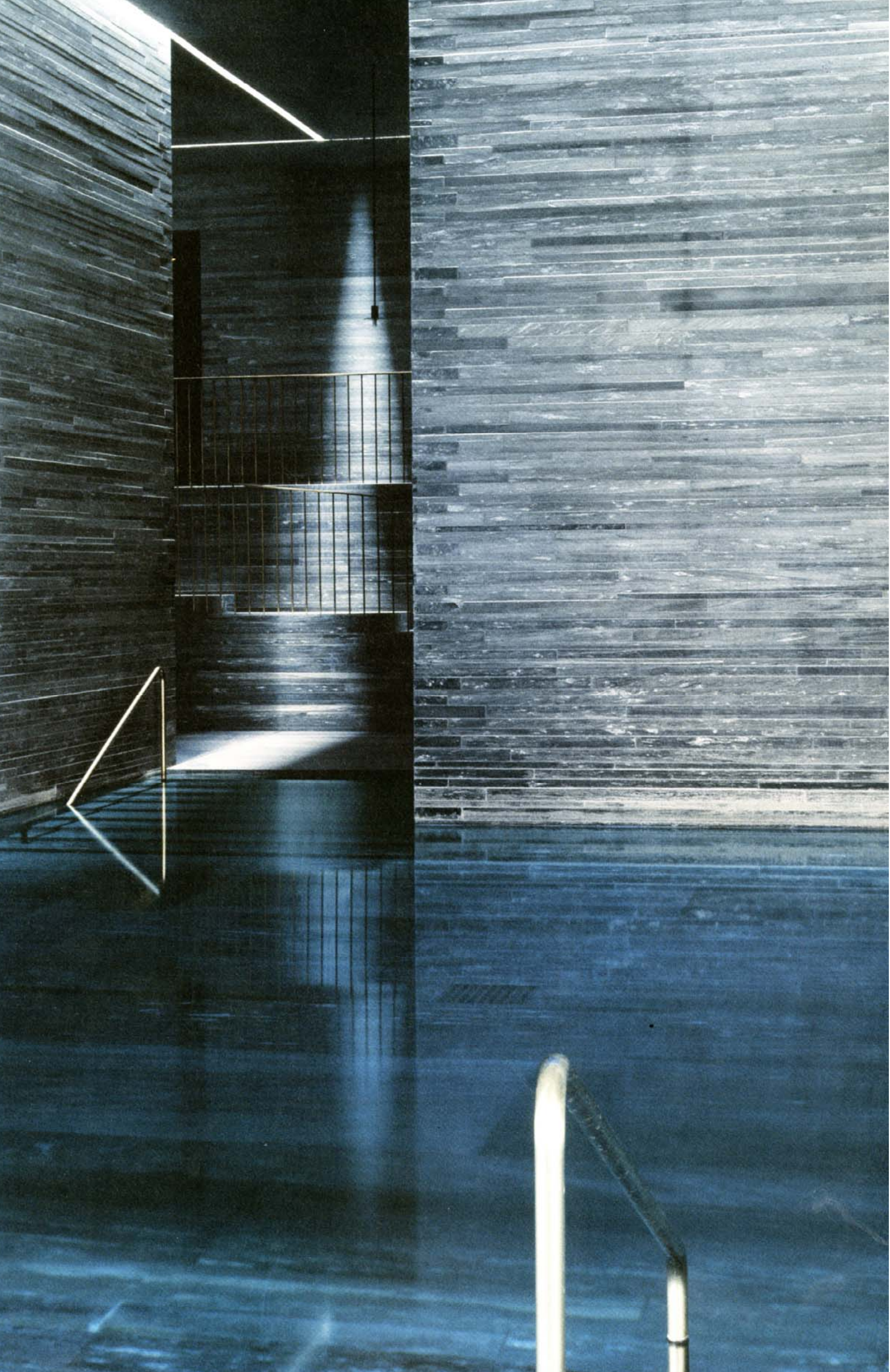
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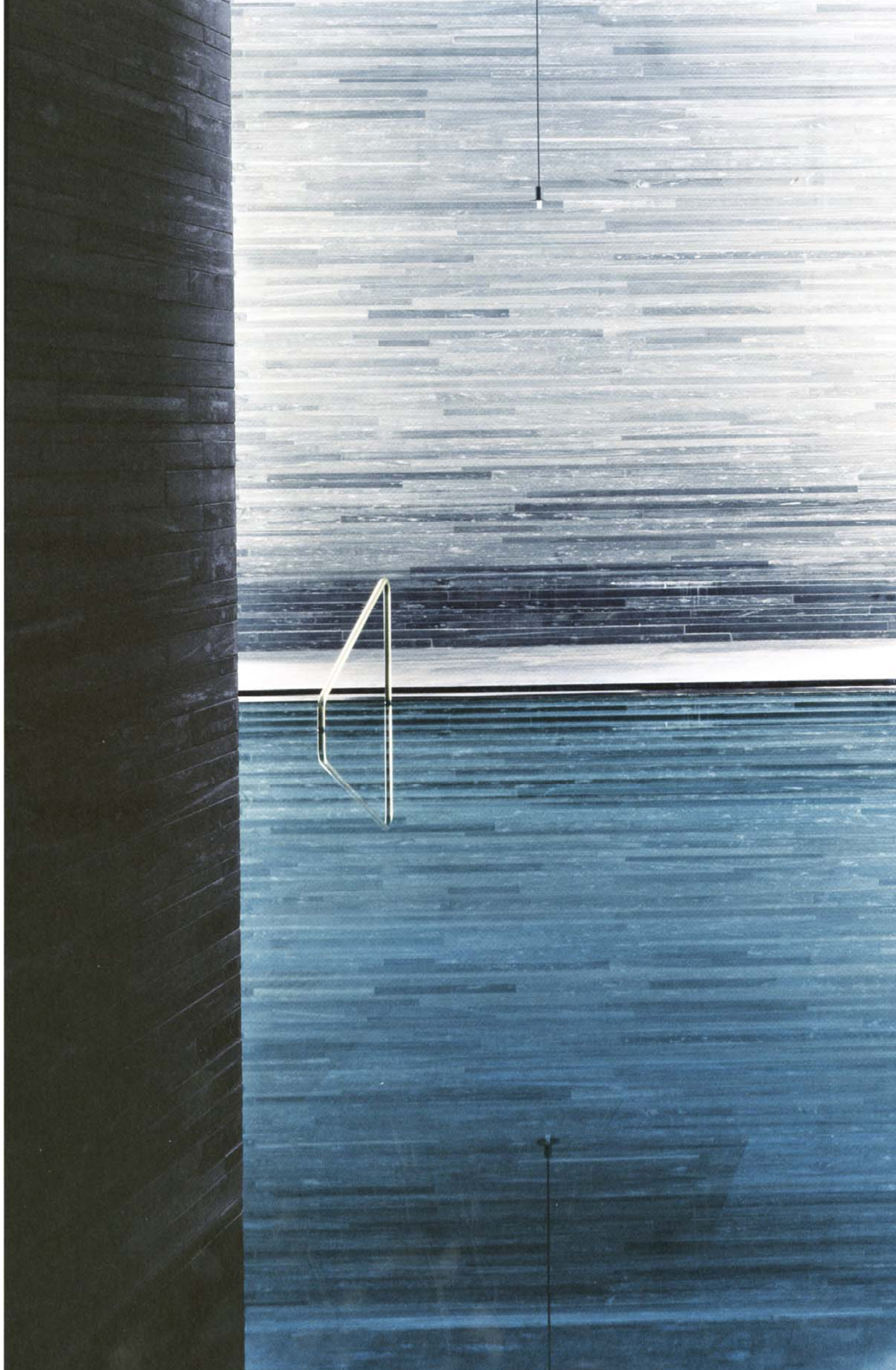


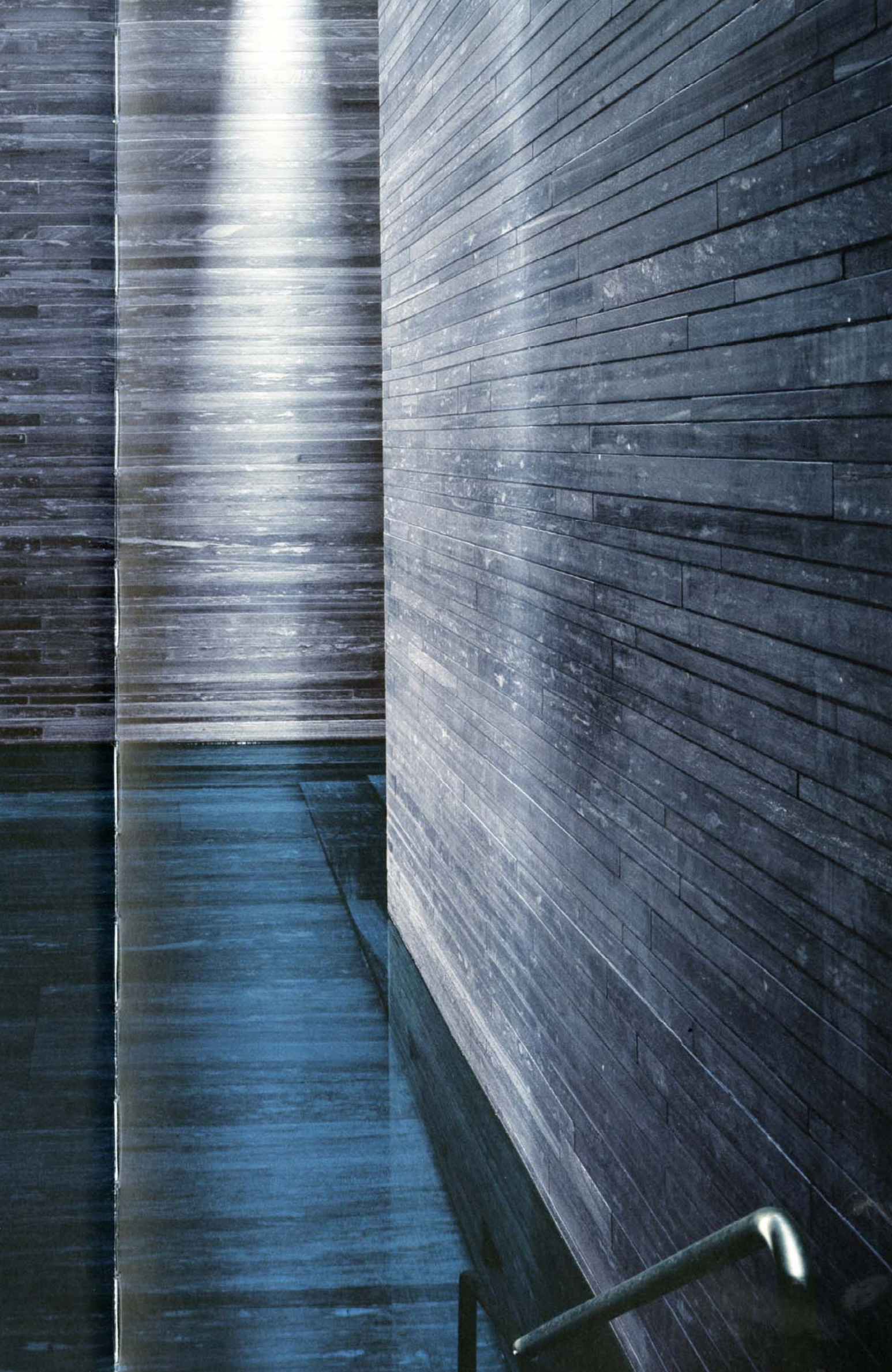
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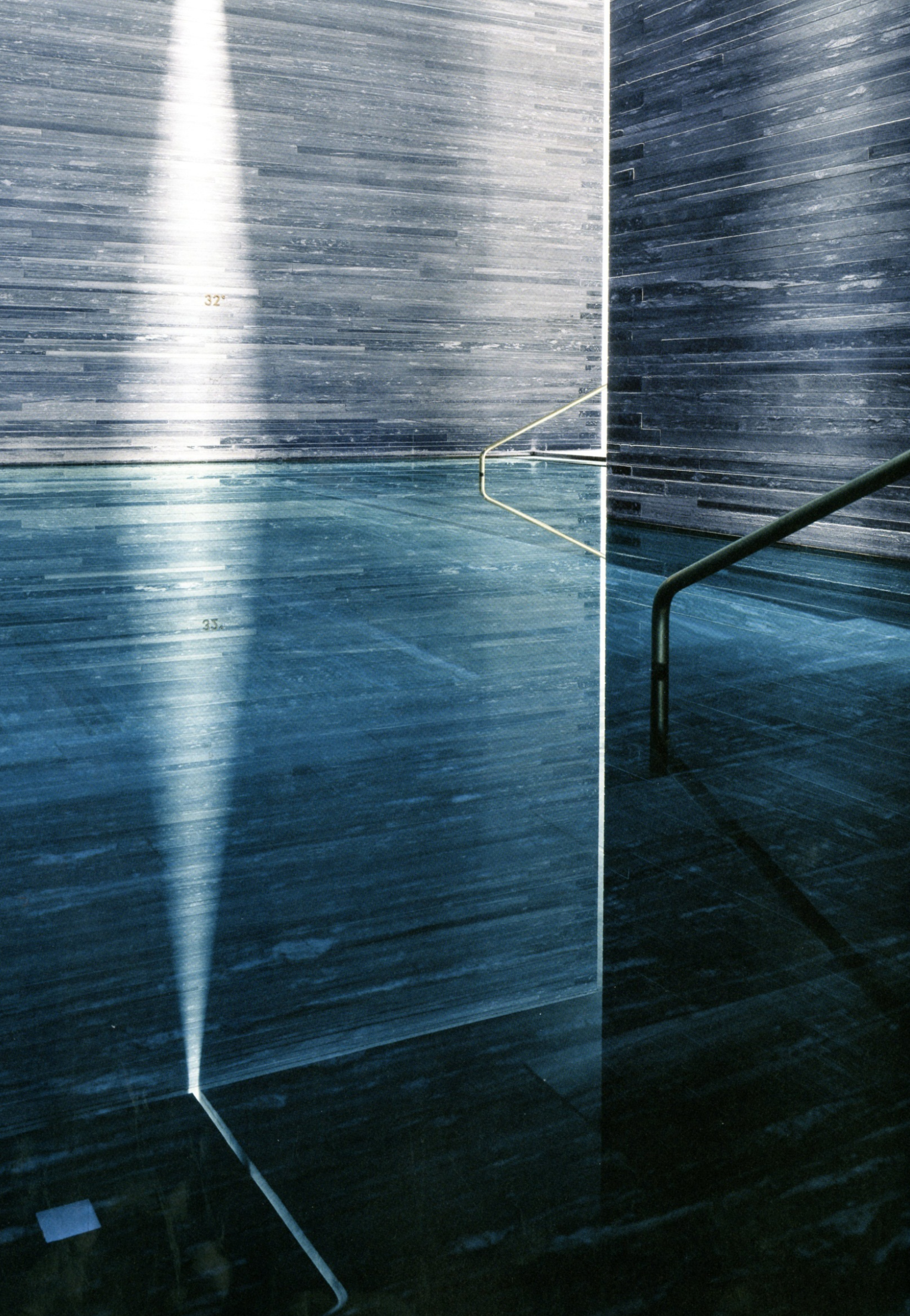












32°

35°

Sparta, the capital of Laconia, a province in the southeast of the Peloponnese, was one of the leading city states until roughly 500 BC .and the first military power in Greece. The Spartiates, the privileged master class among the Spartans, were members of the warrior caste and had political rights - unlike the rest of the population. From the age of seven their sons became charges of the state and were subjected to rigorous training intended to prepare them for war and make them obedient, when they were twenty they would begin military service, where they remained until they turned sixty. The Spartiates developed new fighting tactics and tested these successfully in battle, they ensured the sacred truce during the Olympic Games and continued to command the Greek troops for a long time. Not just their military, however, but their political leadership was uncontested also. Plato of Athens described their constitution even during their decline as exemplary, and their comportment remained impressive under subjugation: the Romans occupied Greece in 164 BC - at which time *stilus laconicus* became a familiar Latin expression. *Laconis illa vox*, for example, as Cicero put it, meant an *utterance in the art of the Laconians* in reference to their reputed deftness in the art of simple, terse communication and carried the figurative connotation of a taciturn, closed person. By the seventeenth century, some European languages had incorporated this Latin term into their vocabularies. Another word in this context has also survived over the ages, albeit only in historical and technical terminology: **LACONICUM** signifies the sweat bath according to the Greek model, the Romans adopted this special institution found in the Laconian military baths, including the athletic and social rituals that went along with it, and made it the foundation of their own bathing practice. In the fifth of his *Ten Books on Architecture* Vitruvius' instructions are precise: *Laconicum sudationesque sunt coniungendae tepidario*, in other words: *The Laconicum and other sweating baths must adjoin the tepid room*, which for functional and economical reasons should occur in the same area as the heated rooms. However, they were not integrated in the sequence of normal bathing procedure - frigidarium, tepidarium, caldarium, and back again - it was therefore up to the male bather whether or not to subject himself to these temperatures, women were not required to make such decisions because the laconicum had no place in the women's sections of Roman baths to begin with. The fact that Vitruvius mentions *other sweating baths* in addition to the laconicum implies the need for differentiating between types of sweat rooms: the laconicum was something typically Greek, in other words foreign, and this type of bathing area was not generally installed in public baths. Archeologists have clearly defined it as a *dry-heat sweat*

bath, unlike the other warm and hot rooms it didn't rely on hypocaust heating, but had at its center a heat source that kept hot coal smoldering in a bronze receptacle. Vitruvius' instructions called for a circular floor plan and a semi-spherical dome, the radiant heat of the central heat source would gradually cause the people seated in a circle around it to start to sweat. There is an *aperture* in the roof, from which a *bronze disc hangs by chains, by raising and lowering it, the temperature can be regulated*. The Greeks themselves called their sweat bath *pyria* derived from *pyr*, fire, and it is via this circuitous route that the Latin word *purus* comes to mean *pure, clear, even blameless* and is more of a philosophy, more of a religious matter than a physical state. This *fire bath* along with various baths of different temperatures and the out-door pool constitute the standard configuration of the Greek bath. It basically consists of a small insulated room in which one sits around a pit filled with glowing lava rocks or coals and waits for the hot air and radiant heat to take effect. Usually this bath-house is near a lake or other body of water, as it is shown on various Greek icons depicting the legend of the *Forty Martyrs of Sebaste* in central Anatolia: Herded together and undressed, forty Roman soldiers stand on the ice-covered lake on a cold winter night, they have been sentenced to death by freezing for professing their belief in Christ. One of them can't stand the agony and takes refuge in the bathhouse on the shore, the smoke rises from the opening in the roof. A guard converts by joining the dying soldiers, and thus the predetermined number is restored.

Nothing remains of the water and steam from these bathhouses. Both, however, are essential elements of the Islamic, Turkish, or Moorish bath, which derives from the Arabic word *hammam* meaning *to warm*. As part of hygiene and at the same time as a ritual act in preparation for prayer, washing plays an important role in the Islamic way of life. This includes the weekly bath at the public bathhouse on Friday prior to visiting the mosque, but in addition to the physical cleansing this also serves the purposes of relaxation and social interaction - similar to the Roman thermal baths and the Byzantine bathing complexes it was modeled after. The evolution of hammam architecture is closely tied to the mosque and the Islamization of the Arab people in the seventh century, and under the Umayyad dynasty it spread from the Indus in the east to the Pyrenees in the west in the span of a century. According to the prescriptions of the Koran, *only flowing water* is cleansing, so in this sense bathing in a tub or swimming in a pool is not considered cleansing. A hammam basically consists of a large entrance hall, an intermediate room, and the sweat or steam bath, the main

bath. It is octagonal, has a temperature of approximately 40°C with even hotter areas in the wall niches, a thin stream of water provides the necessary moisture. There are benches and fountains for washing along the other walls, up above, vaults or domes shed light through small round or star-shaped openings. The body, sweating in the heat and steam, is massaged at the center of the room on the *navel stone*, a large marble platform, which, like the floor, is kept warm by hot air circulating in channels just beneath the surface, the warm air and water used for washing are tempered in the adjacent heating room. After being massaged, one washes at one of the surrounding fountains before returning to the entrance hall, which offers rest for the body, contemplation or a stimulating conversation for the mind. In this way, Islamic bath culture takes its inspiration from the Roman *thermae* and enriches it with influences from the occupied Byzantine and Persian territories, after the Umayyads conquer Spain in the beginning of the eighth century, this building form continues to evolve, producing all possible variations throughout Europe, and is set forth by the Osmanian Turks in the Balkans and in Hungary up until the seventeenth century. Meanwhile, from the late eleventh century on, Oriental baths are discovered on the Crusades and brought back to medieval Europe, where, up until the fifteenth century, public *sweat baths* enhanced with herbs and petals inspire the sometimes bacchanal fantasies of many a painter, engraver, and poet. This age also gives rise, if only linguistically, to the Yiddish *schwizbod*, which has never known any of these pleasures, but whose only purpose is to provide men with their weekly cleansing before Sabbath, keeping them out of water made unfit by Christians.

Then again, maybe that's not how things happened at all. The principle of sweat and steam baths existed in Central Asia long before Greek antiquity: at around 450 BC, Herodotus, the oldest Greek historian, embarks on long journeys to Asia and Africa, he describes among other things the bathing rituals of the Scythians, Iranian nomadic herdsmen who come from Central Asia or Siberia and occupy the Russian steppes by the eighth century BC. In the seventh and sixth century they barter with the Greeks along the Black Sea, trading luxury items and metal goods for wheat. As nomads with no permanent settlements, their sweat bath is a tent covered with a felt blanket, at whose center *hot steam on red-hot stones strewn with hemp seeds produce an intoxicating effect*. Presumably it is they who teach the Greeks how to sweat. And since things with cultic origins tend to be copied, it spreads to the north, where it is adopted by the Finnish people as the sauna and becomes their symbol of national identity,

especially in a time of foreign rule. The original meaning and local tradition of the Finnish word *sauna* is *wooden bathhouse*, but this is only distantly related to what this term has come to mean internationally. In the end, not only does the Greek *fire bath* go down in history as the Roman *laconicum*, but over the centuries, as European bathing practices evolve, this Greek invention also assumes the role of an interpreter, serving as mediator, negotiator, explainer, and translator in the original Latin sense of the word. One thing is certain: by the fifteenth century the Church puts a temporary end to these wet, frolicking escapades, for nearly three centuries Western Christian civilization must, for the most part, get by without the public bath and the pleasure of communal bathing.

Pranz Kiechle, *Lakonien und Sparta - Untersuchungen zur ethnischen Struktur und zur politischen Entwicklung Lakoniens und Spartas bis zum Ende der archaischen Zeit*, Munich 1963.

Vitruvius (Morris Hicky Morgan, trans.), *The Ten Books on Architecture*, Cambridge 1914.

Marga Weber, *Antike Badekultur*, Munich 1996.

Stefano Bianca, *Hofhaus und Paradiesgarten - Architektur und Lebensformen in der Islamischen Welt*, Munich 1991.

Leo Rosten, *Jiddisch - Eine kleine Enzyklopädie*, Munich 2002.

Non-Jews were allegedly always surprised at the cult of cleansing practiced by their Jewish neighbors, whose families seemed to be cleaner and healthier than others. The **MIKVAH / MIKWE** is the Jewish bath of immersion, a term that comes from the Hebrew word *mikwá*, meaning a Jewish ritual, meaning literally a collection or gathering of waters, originally the seas as opposed to the land, as in the Book of Genesis, The First Book of Moses, and Martin Buber, together with Franz Rosenzweig, doesn't just re-translate this passage, though no doubt acknowledging the work of his name-sake Luther, but transforms each sentence from its very roots, his Bible is to be the document of spoken language, the *Germanization of the Scriptures* as he calls the fruit of years of laborious collaboration and single-handed effort. According to Buber the water doesn't collect or gather, but *it backs up* in one place, so that *dry ground may appear*, he uses direct address from the start, things and people are not called this or that but called to: *God called to the dry ground: Land! and called to the backed-up waters: Seas!* The mikvah differentiates between clean in a physical and a ritual sense: in its ritual sense it is close to life, every living thing dies and yet isn't dead and will be born again, it is a process that continually repeats itself, death is integrated into this cycle and anticipated on specific occasions in order to become new life: such occasions are the major celebrations of the year, the special events in the life of an individual, the weekly preparation for worship on the eve of Sabbath. It is prescribed as a ritual bath in the Mishnah, whose root word is *shanah*, to learn, literally to repeat what one was taught, it comprises the orally transmitted explanations, studies, and interpretations of the Jewish teachings written in the Torah. Together, the Mishnah and the Gemara, which arose later, make up the Talmud that consists of several books, is the compendium of discussions, dialogues, commentaries, interpretations, decisions, and conclusions of those sages who, for centuries, have pored over the scriptures of the Torah, which was handed down from Moses and the prophets, and tried to interpret their content in various ways, using this to structure everyday life, holidays, and ceremonies. In the sixth of its six orders, the Mishnah concerns itself with the laws of cleansing, making reference to its understanding of the prescriptions God imposed on his people in the Book of Leviticus, the Third Book of Moses, where Moses is called upon directly to speak unto Aaron and his sons. The Levites were priests and sons of Aaron, temple servants who alone had the privilege of performing certain cultic functions during sacrifices, which is why this book is commonly named after them, but Buber also translates word for word, thus he gives

the Third Book the title *He called* after the Hebrew *vayikra*, the word that begins and recurs throughout this book, because one should be able to *hear the speech* in the Scriptures.

Uncleanness is the symbol of death, cleanness the symbol of recurring life, in other words: the more unclean, the closer to death, therefore life is looked upon as a constant process of rebirth. It is said that this rhythm is most visible in the life of the woman and the mikvah is inextricably tied to the cleansing prescriptions for women: thus brides and pious women at the end of their monthly periods and after giving birth are to immerse themselves completely in water according to ritual prescription in order to become clean again, should they fail to do so, they remain unclean and these prescriptions apply indirectly to everything and everybody coming in contact with them, particularly to their husbands. The female cycle thus becomes a factor that helps determine Jewish married life. The fact that this itself often leads to misunderstandings and provokes certain interpretations is no doubt also the fault of the inventors and interpreters of the Torah and the Talmud. According to Jewish law the erection of a ritual immersion bath takes precedence over that of a synagogue or a community center, the Mishnah gives detailed instructions: the water must not fall short of a certain volume and must *collect naturally*, in other words must reach *the mikvah pools through the force of gravity alone, and must come from rivers or lakes that have not been dammed*. Ground, spring, or rainwater meets this specification, accordingly medieval baths are usually located deep underground and were often simply buried over the ages, forgotten, but they are still intact, though the cities or sites above them have been burned or razed to the ground, the people, driven away or killed. In Buber's *Tales of the Hasidim* a rabbi goes down to the stream one afternoon before the Day of Atonement, but instead of immersing himself like the others, he falls asleep beside the stream. Awaking, he returns to the city with the others *looking and moving as though he were quickened with new life*, as he always is after the bath. *Immersion without Water* is the title of this tale: traditional wisdom, therefore, concedes to sleep the same cleansing power as it does to the bath of immersion. In the Leviticus the definitions of uncleanness and the instructions for cleansing are followed directly by the prescriptions for Yom Kippur, the Day of Atonement, one of the two most important Jewish holidays, in this sense cleansing comes before atonement. On the last day of repentance a scapegoat is laden with all the transgressions and sins

of the people and sent away by an appointed man: *And he shall let go the goat in the wilderness*. In some places in Europe and the United States there is little about the mikvah to remind us of the traditional purpose of the original bath of immersion, which, having mutated into a wellness center, now advertises the religious ceremony as a feel-good experience. No sooner does a ritual become obsolete, than its replacement clamors for attention.

Martin Buber, Franz Rosenzweig, *Die fünf Bücher der Weisung*, Stuttgart 1992.

Efrat Gal-Ed, *Das Buch der jüdischen Jahresfeste*, Frankfurt am Main-Leipzig 2001.

Leo Rosten, *Jiddisch - Eine kleine Enzyklopädie*, Munich 2002.

Martin Buber, *Tales of the Hasidim*, New York, 1991.

Legends about churches founded on the site where a wounded stag leads the hunter to waters with curative powers are foreign to the folklore of Vals, neither the Walsers, who came here in the early fourteenth century, nor the Rhaeto-Romanic people, whose scattered populations inhabited and cultivated the valleys before their arrival, recount any such story. History, however, bears witness to a prehistoric culture: according to the annals, during construction of the first thermal bath at Vals, which opened in 1893, workers uncovered a *peculiar bath cistern made of masonry and buried deep underground*. This receptacle contained *bovine, pig, goat or sheep, and horse bones* as well as *shards dating from the Bronze Age*. That is all that remains, maybe the cistern was connected to a bath or these relicts may indicate a cult or sacrificial site. In any case, the discovery received *little attention* initially, so that parts of it were *smashed and discarded*, not until later studied as a prehistoric find. Nor is there a holy legend about the **SPRING / QUELLE** and its origin - *Valsler St. Peters-quelle*, the labels on the mineral water bottles say, *von ganz tief oben [from the depths of the heights]*, a small silver medal depicting St. Peter rests in the nook of the V formed by two white lines, behind him, poking out of the bottle's plunging neckline, so to speak, the stylized image of the mountains rise up from the Vals valley. Below the saint, the world-famous white cross on a red field calls attention to itself and to him, his hands holding his attributes: right, the key, left, the triple barred-cross of the pope. The name of the spring goes back to the patronage of St. Peter, who gave his name to the church at Vals-Platz, which was first mentioned in the annals in 1451, partially torn down in 1643, later newly erected and dedicated to St. Peter and St. Paul. The Rhaeto-Romanic population also refers to the valley by the name of its original patron: Val Sogn Pieder.

Since the sixteenth century, the history and stories about the water's healing power and uses have been recounted by countless chroniclers. At the turn of the century the folklorist Johann Josef Jörger, born in Vals in 1860, active as a doctor till his death in 1933, compiled and recorded distinctive historical and topographic features about the valley, he studied the language, customs, and architecture of the inhabitants, writing about them in several publications.

From the 1960s on, Robert Schwarz, lawyer and the legal advisor of the Grisons Medical Association as well as the Therme Vals, set forth this tradition in the twentieth century, and Peter Schmid, writer and shepherd, President of the Building Commission

for the Therme, and in the decisive phase of construction also President of the *Hôtel und Thermalbad Vals AG*, has continued his research constantly adding new insight, data, and supporting documents to the existing body of knowledge. According to this information, the slope above the Therme is still called *Roota Häärd* [red hearth] in seventeenth-century documents it was spelled *rodter Herdt* and was known far and wide even back then for its *good healthy bathing water* for those *susceptible to the cold*. Seventeenth-century annals mention a *bathhouse in Vals*, but despite several expert reports, the hot springs went unused until the beginning of the nineteenth century.

From the sixteenth century on, as word of the spring spread and its popularity grew, more and more physicians and pharmacists gave their expert opinions on the properties and healing powers of its waters. The *first chemical analysis* of the waters was conducted in 1826 by a pharmacist from Chur, which led to the erection of a *bathhouse* around mid century. Another *comprehensive chemical analysis* followed in 1873, the year of the Vienna World Fair, with the *thermal springs at Vals being the only ones represented from the entire canton of Grisons*. In the late nineteenth century, the growth of spa tourism across Europe laid the groundwork in Vals as well: an important preliminary step was the completion of a *road connecting Ilanz and Vals*, which was opened in 1880.

The next move was the founding of a joint-stock company, the *Aktiengesellschaft Therme in Vals* in 1891, two years later the new spa hotel was inaugurated *with sixty beds and a bathhouse*. In addition to this, Robert Schwarz states that *water from Vals was bottled and distributed for the first time*. Following a period of recession in which the joint-stock company had to be dissolved, a new boom began in 1936, despite the times of crisis and subsequent war, an upswing that was tied closely to the personality of the enterprising and charismatic owner, Alfred Grüniger, and ended with his death in 1954. Under his management, the complex received its first outdoor pool, which was kept open even during the winter season.

Finally, in 1960 - in the meantime the dam for the Krattwerke Zervreila AG had been erected at the other end of the valley some three kilometers away from the village - the long search for a new owner of the spa hotel property and springs ended: under the management of *the mineral water expert Kurt Vorlop from Salzgitter-Bad* in

Lower Saxony, four hotel complexes built according to a surefire functionalist formula were completed in 1970, offering *1,000 beds in 345 apartments as well as Europe's first high-alpine thermal and mineral bath with a wave machine and indoor and outdoor pools*, not to mention a bottling plant with a distributor for the mineral water, the Valser Mineralquellen AG, and the Swiss owner of a brewery in Bern Donald M. Hess as partner. *The water was distributed under the name Valser St. Petersquelle*, advertising drew on mineral analysis by experts, which recommended the *thermal calcium sulfate, hydrogen carbonate water* for bathing and drinking alike.

Today, two separate companies have shares in the use of the mineral springs, writes Peter Hartmann in 1998 in his comprehensive dissertation on *the origin of Vals mineral water: The community of Vals is the owner of the springs and main shareholder of the Hotel und Thermalbad Vals AG (Hoteba)*, which runs the thermal bath and hotel. *The Valser Mineralquellen AG based in Bern (Hess Holding) runs the bottling plant and sells the Valser water. Both parties have contracts entitling them to the use of half of the mineral water that rises in the area of the existing mineral springs.* This information is no longer current. In October 2002 Donald M. Hess sells the Valser Mineralquellen AG to the multinational corporation Coca-Cola, the new owner is Coca-Cola Beverage AG based in Bolligen with its headquarters in Brütisellen, which guarantees *better distribution channels, since so many cheap water suppliers have flooded the market*, according to the visitor center in Vals. And according to the press releases: *Thanks to the dense distribution network we soon expect to see people drinking water from Grisons all over the world.* The spring itself still belongs to the community. Approximately two thirds of the water drawn from the two springs currently being used - Neubohrung and Obere Fassung - is piped to the bottling plant. Coca-Cola has allegedly been negotiating *with the community for years for increased use of the spring* with experts being called in at intervals. They recommend *further drilling* and greater amounts of water because the bold prognoses made by the new operating companies - i.e. to *double* exports within a few years - have yet to be achieved. PET bottles designed by Mario Botta and Luigi Colani make it easy to distinguish between the categories of classic for *natural mineral water* and sweet for *innovative flavors*. *Trink was du willst, aber Spass muss sein [Drink what you please, but it's gotta be fun]*: the new generation of trendy beverages takes an in-your-face approach with slogans that could apply to anything. With *fruit aromas* like *lime* and *lemongrass* the company is all set to conquer not just the European but the Asian

market as well. The ad, however, promises: *Alles wird besser, Valsler bleibt gut [Amid bigger and better, Valsler stays good]* - a slogan that has been used for several generations of commercials and is still being used today.

Johann Josef Jörger, *Bei den Walsern des Valsertales* (1913), edited and expanded by Paula Jörger (1947), 5th edition, Basel 1998.

Robert Schwarz, *Bad Vals - Festschrift zum 150jährigen Bestehen des Bündnerischen Ärztevereins*, Chur 1971.

Peter Hartmann, *Die Entstehung des Valsler Mineralwassers*, dissertation ETH, Zürich 1998 (a summary is available at the visitor center of the Valsler Mineralquellen AG).

Peter Schmid, *The History of Therme Vals*, in: *Hotel Therme Vals* (ed.), *Stone and Water - Culture and Events Summer 2006*, Vals 2006.

Hugo Wyler Merki, *Coca-Colas Durst ist nicht gelöscht*, in: *Berner Zeitung* 5/9/2006, Bern 2006.

Rock Water St Peter's Spring	Cations (mgil):		
New drilling of April 28th, 1987	Ammonium	<i>less than</i>	0.005
Water temperature 30.1° Celsius	Lithium		0.02
pH-value 6.5	Sodium		10.7
	Potassium		2.0
<i>Natural mineral water</i>	Magnesium		540
Contains calcium	Calcium		436.0
magnesium	Strontium		8.8
sulphate	Barium		0.05
	Manganese		0.025
<i>Suitable for low sodium nutrition</i>	Zinc	<i>less than</i>	0.01
	Cadmium	<i>less than</i>	0.0001
	Mercury	<i>less than</i>	0.0001
	Copper		0.001
	Lead	<i>less than</i>	0.001
	Aluminum	<i>less than</i>	0.01
	Anions (mg/l):		
	Fluoride		0.63
	Chloride		2.5
	Bromide	<i>less than</i>	0.05
	Iodide		0.018
	Nitrate	<i>less than</i>	0.1
	Hydrogen carbonate		386.0
	Sulphate		990.0
	Hydrogen phosphate	<i>less than</i>	0.05
	Hydrogen arsenate		0.005
	Undissociated components (mg/l):		
	m-silicic acid		25.0
	o-boracic acid		0.71
	<i>Total of dissociated components approx. 1.918</i>		
	Soluted gases (mg/l):		
	Oxygen		0.0
	Hydrogen sulphide, odourless		0.0
	Carbon dioxide		115.0

When evening comes and the guests leave the building, the bath is only quiet for a brief moment because soon the bath attendant switches off the soft lighting and throws on the floodlights. On the *control panel* in the *custodian's* room four buttons with different colored lights signal and regulate the lighting situations for the various bathing and work times: yellow corresponds to the *ceiling lights*, green is for the *underwater illumination* during opening hours, red stands for the *entrance lights* to the individual areas, and white, for the lighting system used during *cleaning*. The latter is referred to in the sketches and drawings detailing the artificial lighting situations as *cleaning spots*, they are floodlights hanging from the ceiling. Inconspicuous by day, they jump out at you when they are turned on in the evening, changing the atmosphere, proportions, and even the acoustics in the rooms. At closing time, the bath attendant on duty during the day is also responsible for the **CLEANING / REINIGUNG** of the various indoor baths, which in a never-ending cycle are to be emptied, cleaned thoroughly, and refilled with fresh water once a week. Emptying and filling is done by pressing a button on the *control panel*, cleaning, by contrast, demands perspiration and physical exertion. On *Friday the Indoor Pool is emptied*, it takes a good half an hour for the water to pass through the central brass grate and down the *drain*, the lower the water level, the faster it seems to be sucked into the vortex, this is *the navel of the Therme*, says Margrit Derungs about this weekly event, she has been a bath attendant since 2003 and has worked for the company much longer. The used water drains down to the floor below and is piped to the *wastewater reservoir* under the *Outdoor Pool*, where it is stripped of its valuable heat that is reclaimed for the heating system, cooled to 40°C, cleaned, and discharged into the Valserrhein to flow on to the Vorderrhein and eventually the Rhine itself.

When cleaning the pool, the bath attendant must follow strict regulations that were developed at the architectural firm in conjunction with specialists from several cleaning companies. The cleaning and disinfecting solution is applied to the floor, steps, and walls using a spray apparatus with a long hose, then the surfaces are scrubbed with a coarse brush, row by row, horizontally and vertically. The brass stanchions and underwater light fixtures are treated with decalcifiers, afterwards everything is hosed down with high-pressure water jets. At the same time a three-to-four-person cleaning team starts its nightly rounds in the other rooms, they use *vacuum scrubbers* and *high-pressure cleaners*, it's routine procedure: stone, brass, wood, and leather, all the fixed and movable parts in the entire bath are lathered with cleaning and disinfect-

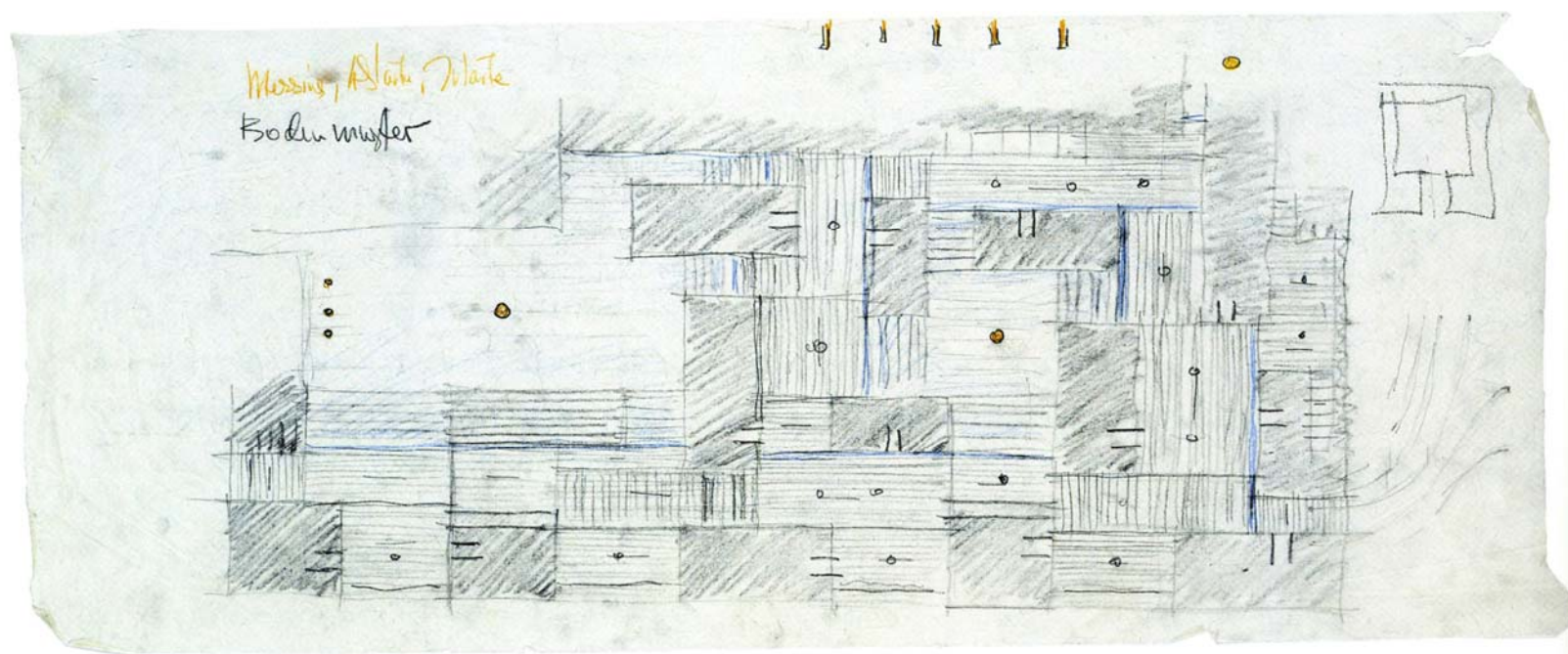
ing solution, sprayed, and rinsed. The composition of the solution is regulated and it is to be diluted exactly as instructed. The specifications are based on a report by the geologist Peter Eckardt, we call him *the natural stone guru of Switzerland*, Pius Trutter adds, who as the chairman of the board of directors of the community-owned Hotel und Thermalbad Vals AG *immediately called upon Eckart* in the planning phase when the arguments against the new bath, against the construction method using Vals stone, and against Peter Zumthor's architecture became heated and polemical, with representatives of the community and in some cases even members from his own ranks pitted against the project. Peter Eckardt had to allay various concerns about using Vals stone in conjunction with Vals water and clear away doubts as to whether this stone could be cleaned and disinfected in a way that met normal standards - the opposition had brought in the most diverse expert opinions from a number of spa companies. *To absorb stubborn grease spots - one expert said - apply kaolin, for overall cleaning, acid-based detergents wouldn't harm the stone, the question was how the bather would react to the acidic residues, generally speaking, the stone could tolerate any kind of cleaning agent considered harm. less to the bather, but not vice versa.*

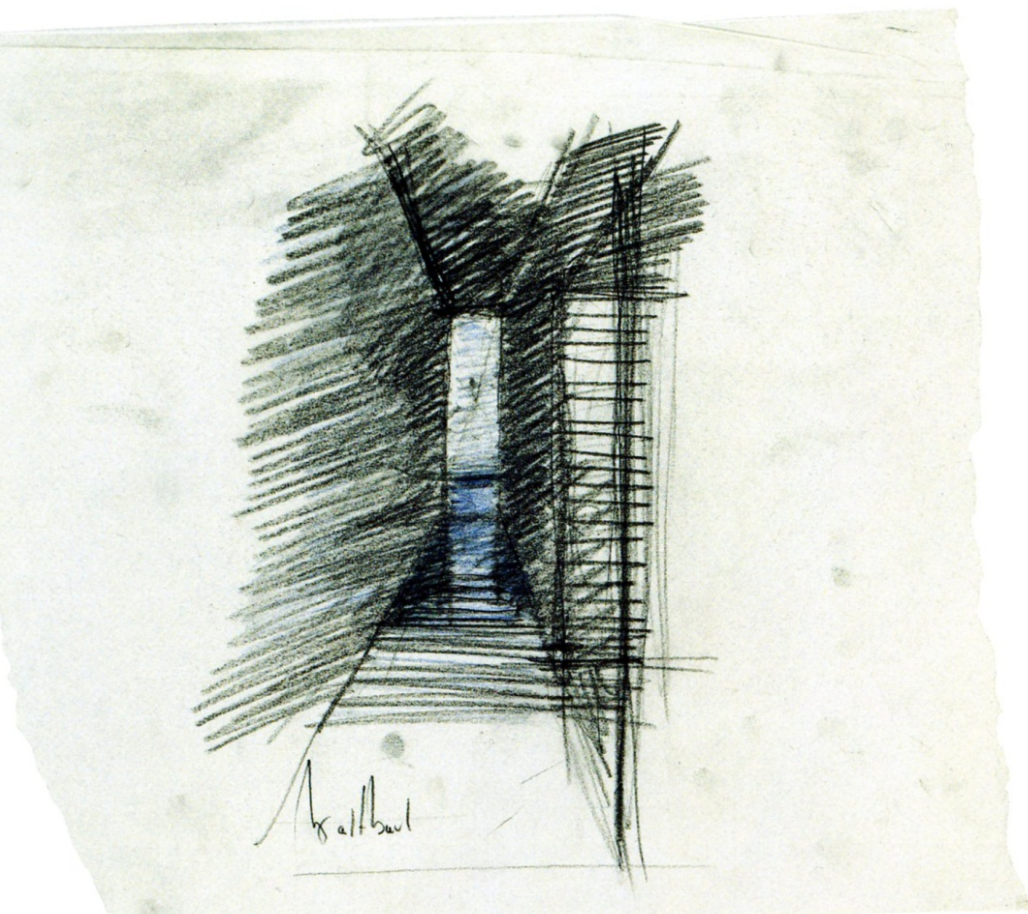
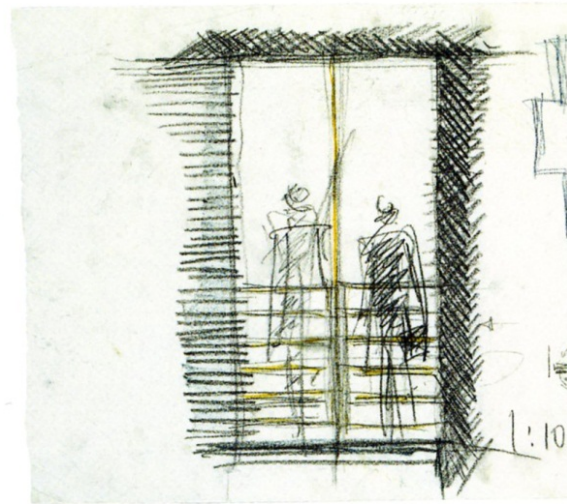
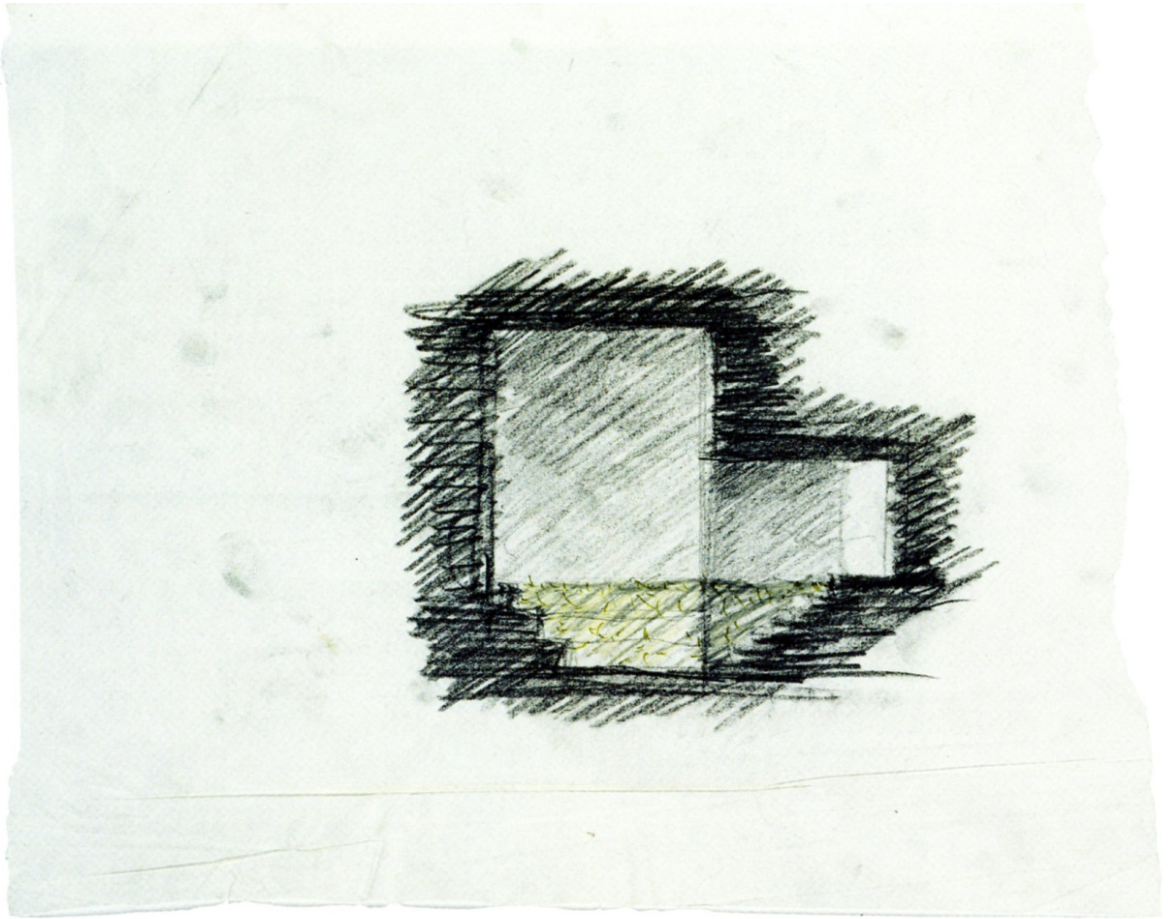
Every second Tuesday the Outdoor Pool is drained, this takes almost three times as long as the *Indoor Pool*, it has almost three times the water capacity too, and as one might expect, cleaning is also more laborious, in the wintertime when temperatures drop below zero, it demands extreme physical exertion. This water - like that of the other pools - is piped to the *wastewater reservoir* for heat recovery, the *Flower Bath* is the only pool with its own filter and it is drained and refilled three times a week. A machine manufactured by the Italian company Idracos separates the petals from the water, it's a machine that was actually developed for agricultural purposes, and the inventors of the *Flower Bath* looked around a long time before they found it. After the emptying and cleaning procedures, the pools are refilled with water from the *fresh water reservoir* located beneath the *Indoor Pool*. During these evening hours a special relationship between man and space seems to develop: *I've become attached to this bath with my whole heart*, the bath attendant says. When she's done, she has only to push the button that starts the refilling process, in three hours the *Indoor Pool* is full again, this happens automatically and no longer requires supervision.

Rainer Weitschies, The Circulation of the Thermal Waters, in: Hotel Therme Vals (ed.), information and Prices - Winter 2001/02, Vals 2001 (and subsequent issues).
 Claudia Knapp, Die Nacht in der Therme, in: Hotel Therme Vals (ed.), Stein und Wasser - Kultur Sowuner 2003, Vals 2003.

THE BUILDING MATERIALS The hamam next to my hotel in the old town of Damascus, where I went in spring 2006, has a non-descript exterior. One must go inside to appreciate the beauty of its architecture, designed for the bathing and cleansing of the body. Our work on the baths in Vals also focused largely on the interior. The exterior of the building, the large stone block protruding from the mountainside, evolved and acquired its form from inside out. But what was really the driving force behind our work on the interior? What were the ideas and concepts, beyond the playful images of quarries, blocks and giant tables, that fired our imaginations and really helped us, ultimately, to produce a truly distinctive bathing atmosphere?

Rooms may owe their existence to an idea but, in the end, they consist of physical matter, of material that often obeys no idea at all and only wants to exercise its own rights.









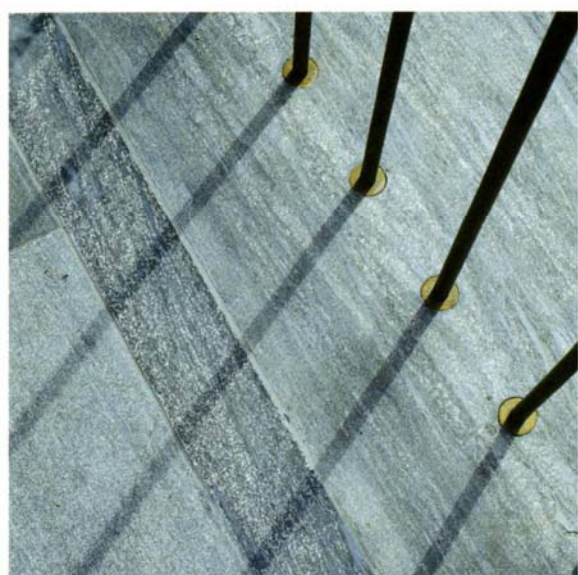
As we became more involved in our material, in the physical presence of the baths, we gradually learned to put more and more faith in our stone. We were not always convinced that only stone from the valley should be used. There was a phase, about halfway through the project, when we considered summoning a sister from abroad - as we phrased it - to join our native stone and add a second voice: the solid mass of the building out of gneiss from Vals paired with a thin membrane on the floors of pietra dorata, stone from Italy.

But we soon summoned renewed courage to rely exclusively on "our stone" and the atmospheric qualities it had already demonstrated. For, early on, we had constructed a stone model out of local gneiss and filled it with water for a town meeting in Vals (see reproduction, pages 138/139): in architecture, stone and water can enter into a natural, and even charmed relationship. Stone loves water. And water loves stone, perhaps even more than any other material. The pictured models bear witness: stone forms a room; the room of stone contains water; light filters through in chosen places and the stone lights up; the water begins to shine, sometimes like a mirror, sometimes like a solid mass - and there it is, this ambience, this special atmosphere. One must simply have an eye for it. It is a gift.

And for the stone to caress the human body, it has to be heated, made to feel as if it had been warmed by the sun. The stone must be allowed to make its own impact; not too many architectural shapes and sculptural visions should be imposed on it; the mass, large and serene, should be left alone so that the presence of the stone is felt, so that it can exert its own effect on our bodies.

The more we trusted the stone and allowed it to play the leading role, the more it began to reveal its subtleties, its grain, its structures, its beauty.



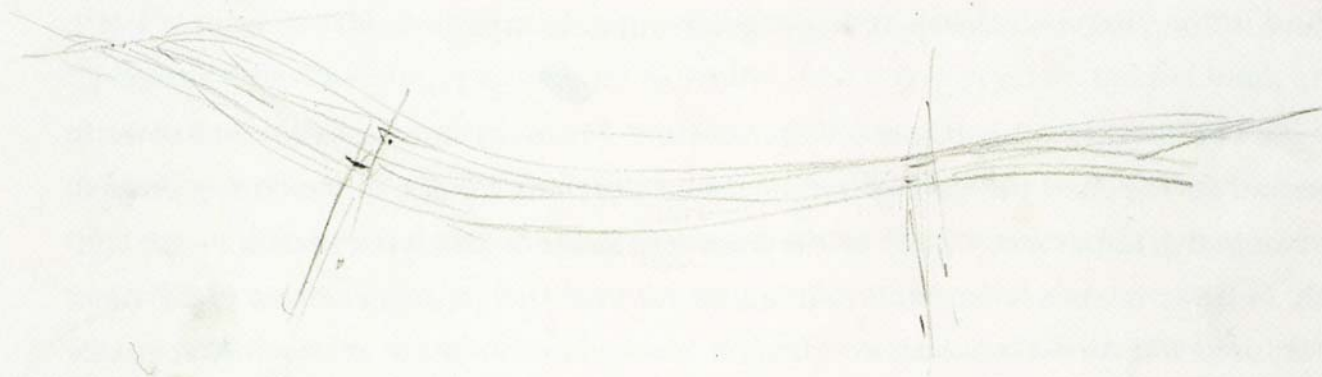


Stone and water and a speck of gold... With joy and reticence, we chose spots in our building in which to place highlights, bits of jewelry on a stony ground: bronze, brass, little bits of black steel and sparkling chrome in the small rooms of black concrete that serve as places to cleanse the body and then, just slightly more theatrically, in the small worlds that inhabit the blocks: concrete with red, blue and black pigment, sweat stones out of black basalt, artificial lighting effects in the water, the swirling blossoms of marigolds.

To create a sensuous environment for the human body, for naked skin, for young bodies and old bodies, which look beautiful in the soft light or halt shadows - this was our objective. The stone rooms should not compete with the body; they should flatter it and give it space. Room for dignity and delight, room in which to be. Quiet shapes, a strong material presence. Only the anatomically undulating wooden deck chairs, designed especially for the baths, hint at the softness of the human body.

All of the sketches, drawings, and photographs of models and plans reproduced in this book are materials produced between 1990 and 1996 in the studio of Peter Zumthor.





Vals water is familiar to many; a product that despite international marketing efforts still has a strong local identity. The Therme Vals has introduced a brand of tourism that not only helps itself to what nature has to give but gives thought to nature as well. The **RESOURCES / RESSOURCEN** of the village are also the materials used for the building: *It was our desire and intention from the start to build with the local stone, Vals quartzite, this fine-grained, schistose, sometimes glimmering Vals rock that will shift from a greenish to a bluish hue and is quarried in the nearby village of Jossagada*, writes Peter Zumthor. In keeping with this concept, the hotel buildings from the 1970s are part of the design too, *they belong to the history of the little town, they should shine forth brilliantly, by means of new volumes, surfaces and lights*. But the thermal bath doesn't stop at the sustainable use of existing resources, it has also created new ones in various areas, from *architectural tourism* to the *utilization of local products in the hotel kitchen*. And it employs more than 140 people, of which 42 percent are from the village or surrounding area.

In the eighth of his *Ten Books on Architecture* Vitruvius devotes a long chapter to *thermal springs and the various properties of different waters*, in which the positive and negative impacts of waters on the body and soul are discussed in detail- the specific location is always an important factor. *Est enim maxime necessaria et ad vitam et ad delectationes et ad usum cotidianum* - water, he contends, *is the chief requisite for life, for happiness, and for everyday use*. Today we know that *only 2.5 percent of the water on this planet is freshwater*, almost half that amount is used in the agriculture industry. *This is depleting enormous subterranean supplies of freshwater that have taken millennia to form, entire stores of water are being exploited recklessly*. By the year 2025, experts predict that a water shortage will not only threaten North Africa and Southeast Asia but many regions of Europe and North America as well. Bottled drinking water is a thriving business for a small number of multinational corporations, they already own a worldwide network of bottling plants. Drinking water is converted into *soft drinks: nine liters of water are required to produce a single liter of Coca-Cola*.

Peter Zumthor, Das Mauerwerk der Therme Vals, in: Hotel Therme Vals (ed.), Stein und Wasser - Kultur Winter 2003/04, Vals 2003.

Peter Zumthor, in: Hotel Therme Vals (ed.), Information and Prices - 2004/2005, Vals 2004 (and subsequent issues).

Vitruvius (Morris Hicky Morgan, trans.), The Ten Books on Architecture, Cambridge 1914.

Maude Barlow, Tony Clarke, Blue Gold: Battle Against Corporate Theft of the World's Water, New York 2003.

Vandana Shiva, Cola löscht den Durst nicht, in: Le Monde diplomatique (March 2005), Berlin 2005.

The Valserrhein originates from the Länza Glacier located in the Adula Massif close to where it merges into the northeastern Ticino valleys at an altitude of roughly 3,000 meters. Joined by many tributaries on its downhill course into the Vals valley, it, with the help of the Canalbach, fills the largest artificial reservoir in the canton of Grisons, the Zerfreilasee. Continuing on its way on the other side of the dam built at an altitude of 1,863.5 meters, it is joined by several other tributaries and by the time it reaches the village of Vals, it has swelled into a wide, during certain seasons torrential, river that is spanned by several bridges. To the north near Ilanz, joined by waters from neighboring valleys, it flows into the Vorderrhein. Vals, the main village of the valley at 1,250 meters, is concentrated on the right bank of the river. To the left, located on the valley floor at the northern end of the village is the bottling plant of the Valser Mineralquellen AG, proceeding into the valley, not far from here but considerably farther up from the river's edge, we find a group of tall hotel buildings clustered around the thermal bath. At the southern upper end and slightly out of town, by contrast, lies the quarry belonging to Truffer AG. It is located on the left bank and close to the edge of the river, which roars along its deep basin, for it is narrowed by the valley walls at this point and flanked by huge blocks of stone. There have been quarries in this area for centuries because stone is the traditional building material of the valley: not only are walls erected using these stones, but the building is also roofed with them, as is prescribed by local building codes. Located directly beside the production plant is the current working face, a quarry wall approximately 200 meters wide and 35 meters high that runs parallel to the flow of the river. State, canton, and community authorities have attested that the rock supply will last for the next 25 years. Annually a slice approximately six meters thick and 100 meters wide, with a volume of roughly 20,000 cubic meters, is blasted from the mountain. For this, 2,000 kilograms of **BLACK POWDER / SCHWARZPULVER** are inserted under the supervision of the shot firer Wendelin Peng into the vertical holes that have been drilled at intervals of approximately one meter, then the charges are tamped and ignited. Just before, however, the slab must be raised at its base, as Pius Truffer, one of the owners of the family operation explains, that means similar holes are drilled at the bottom of the rock face, this time horizontally, these charges are inserted and ignited first: this produces a pocket of gas at the base that, in subsequent steps - these operations take place in a matter of seconds - that is to say after igniting the main charges in the vertical drill holes, allows the slab to be separated from the mother rock, pushed forward, and tipped. Only black powder has this pushing effect, dynamite

would shatter the stone. *Der Teufel wird's schon richten!* is the common cry when igniting the charge, as if to leave the outcome up to the devil - for several minutes afterwards the blast area is shrouded in a thick cloud of black smoke.

This is the only quarry in Switzerland that uses black powder for rock blasting on this scale. In the dictionary under the entry black powder one will find a cross-reference to the word *gunpowder*. It is a mixture of 70 to 80 parts saltpeter, also called potassium nitrate, as the oxidizer, 12 to 20 parts charcoal as the fuel, and 3 to 14 parts sulfur as a sensitizer, allowing the concoction to be ignited by just a spark. These days black powder is used chiefly for saluting guns and fireworks, which was, after all, what inspired the invention in the first place: a similar mixture was supposedly used for pyrotechnical purposes in China as early as the eighth and ninth centuries, other sources attribute this knowledge to the Arabs, who were probably the suppliers via Constantinople and Venice. What is certain is that this explosive product for festive occasions doesn't find its way to Europe until the thirteenth or fourteenth century, once it does, however, it is rapidly developed for use with the new weapons, the musket and canon, and reimported from Europe by Middle and Far Eastern countries as a powder mixture for waging war along with the necessary appurtenances. The manufacturing of firearms and the development of metal processing in the Middle Ages go hand in hand. As to the inventor of today's black powder, however, the chronicles are filled with mixed opinions and contradicting accounts. In Freiburg around the middle of the fourteenth century a Franciscan monk by the name of Berthold Schwarz, called *Bertoldus niger*, is reputed to have discovered and improved the explosive effect of this powder mixture. While some say he gave his name to the product, others claim the opposite, that his chemical experiments and the powder's color or his interest in alchemy and black magic gave rise to his name. One will also find a few scattered stories linking his death to his discovery, either claiming he blew himself up in one of his ventures, or that he was sentenced to death for his satanic experiments. His historical existence cannot be proven because all records of the Freiburg monastery were destroyed shortly before the Reformation. Nevertheless, the fact remains that the city of Freiburg was a center for the development of firearms and the training of cannons in the fourteenth and fifteenth century. What is also certain is that many people before Berthold the Black, as well as a number of contemporaries, engaged in similar work, thus in England, credit for these experiments is given to the Franciscan friar Roger Bacon, who nearly a century earlier had stumbled across the

formula for black powder in his futile attempts to come up with a formula for gold. In any case, the technical development of this material has in all its destructive aspects affected human life more than anything else, and the ironic twist to our story is that it legitimizes the transformation of an explosive powder for festive fireworks into gunpowder for deadly weapons with the legends of pious monks. Since the nineteenth century, more effective and economical explosives like nitroglycerin, dynamite, or nitrocellulose have supplanted black powder as military and commercial explosives. It is still used for firecrackers, bottle rockets and other fireworks, for fuzes, as a propellant for smaller research rockets, as ammunition, and as so-called low-brisant explosives for surface and underground mining. Minor blasting is part of daily operation at the Vals quarry, in this way large blocks are reduced to transportable dimensions. This, however, is done with conventional explosives common in road and tunnel construction. Dynamite charges are adjusted *with gram precision*, the blocks cleaved, cut, or split *with centimeter precision*, prepared in height and width for the various diamond-tipped cutting discs in the adjacent production plant.

Peter Eckardt, Der Steinbelag im Kontext, in: Bundesamt für Bauten und Logistik Bern (ed.), Neugestaltung Bundesplatz in Bern, Bern 2004.

Gottfried Uedl (ed.), Der Zorn des Achill, Europas militärische Kultur - Konfrontation und Austausch, Vienna 2004.

In his chapter entitled *Artificial Colours*, Vitruvius gives instructions for producing black stucco for plastering the interior walls of the laconicum. The interior of the **SWEAT STONE / SCHWITZSTEIN** is also black and correspondingly dark, it is the largest of the *blocks*, it is divided into two identical areas and situated on the level of the entrance and the changing rooms, but in such a way that its own entrance is easily overlooked, not noticed until the second or third visit. Each of the two vestibules lead to a sequence of three sweat chambers, each successive room getting darker and hotter, the chambers are separated by curtains, the upright steam column stands in the final and hottest chamber, black floors, walls, and ceilings, their contours hardly discernable in the thick mist as they reach upward, pavilion-roof-like toward a diffuse light source. To the left and light of each chamber there is a *black stone for lying on - Nero Assoluto*, a basalt stone from Italy. Drilled into these polished cuboids from below are channels for the heating pipes: a 42°C contact surface for the prone or supine body - in the design phase, research included measuring the temperature of navel stones in Turkish baths. A series of sketches documents that this *steam bath*, dubbed *Sweat Stone* in the end, is modeled after various predecessors. *Each block contains a special hollowed-out space*, writes Peter Zumthor, *these spaces serve functions which require intimacy, or benefit from it*. The entrance is the extension of the so-called *Stone Ledge*, pushed up against the wall of the mountain and away from the viewing gallery, and like the *Fountain Hall* it is equipped with a row of brass pipes spouting warm springwater.

Vitruvius (Morris Hicky Morgan, trans.), *The Ten Books on Architecture*, Cambridge 1914.

Peter Zumthor, *Works Buildings and Projects 1919-1991*, Baden 1998.

In German, only so-called *Heilbäder* are allowed to refer to themselves using their place name combined with the word *Bad*. The English word for *Heilbad* is *health resort or spa*. The latter is a name that originates from **SPA**, a Belgian city in the Ardennes with some 300 mineral springs. This resort town was frequented from the seventeenth century on by predominantly British guests, in the eighteenth and nineteenth centuries it was a fashionable health resort favored by a wealthy and prominent clientele from all over the world. Physicians recommended the therapeutic waters as early as the sixteenth century, the word *spa* initially denoted a particular spring, presumably derived from the Latin verb *spargere* - to sprinkle. The water soon became *a cult beverage* and by 1600 it was being exported to England, later to other countries as well: *Spa Monopole - l'eau qui pétille*. This bubbly mineral water gave the city its name, and in English it subsequently became a synonym for mineral water, therapeutic baths, and health resorts in general. In the second half of the twentieth century the term spread throughout the world via American English, finding its way into every language, though straying from its original meaning in the process: *spa* now connotes everything that *wellness* does, and wellness experts explain the three letters as the Latin abbreviation for *sanus per aquam*.

The golden era in Spa ended in the period between the two world wars, and it wasn't until twenty years ago that the people there started thinking about the future again. In the meantime, several historical bathhouses have been torn down to make room for a *vast park devoted to bathing and everything that goes along with the guest's wellbeing*: the international taste for spas has caught on in Spa too.

Around the middle of the twentieth century hydroelectric plants were erected in many high alpine valleys, not always for the good of the local population: energy production as a national policy in the aftermath of World War II had little regard for cultural landscapes and the fates of individuals, political demonstrations of power simply sacrificed and flooded this or that village, farmhouse, and historical building. In the Vals valley, by contrast, the communities involved became *partners* with the hydroelectric company, so to speak, in 1948/49 they issued the *concession for the use of water power*, and in return they continue to collect *taxes and water fees* and meet their energy needs with *lower-priced concession energy*. Between 1951 and 1958, farther up the valley in the so-called *Zerfreilabecken* at an attitude of 1,800 meters where the Valserrhein and the Canalbach converge, the 504-meter-long, 151-meter- high **DAM / STAUDAMM** was built for the 100-million-cubic-meter reservoir. The village of Zerfreila - *it wasn't inhabited anymore except during the summer* - with its seventeenth-century chapel dedicated to St. Bartholomew was sacrificed; the existing road including the tunnel broadened, and a by-pass route built in Vals. *Hundreds of workers put the valley in gold-rush fever, construction work on the power plant created a wealth of jobs*, writes Peter Schmid, and in his chronology of the former village Safrayla - the name can be traced back to the Rhaeto-Romanic *Seurera* - he points out the different spellings: *Zerfreila* is derived from historical documents, *Zervreila* corresponds to the current official spelling. With the revenue from the hydroelectric company, Vals developed into a financially strong community in the decades to follow, allowing it to create the infrastructure necessary for developing a health resort and thermal bath. *In 1950 the construction phase of the power plant swept over the little mountain paradise like the bursting of a dike* - as the folklorist and Walser scholar Paul Zinsli chose to describe the *extremely rapid changes* taking place. *During the summer half of the year the waters are impounded in the Zervreila reservoir, during the winter half of the year the generating units Zervreila, Safien Platz, and Rothenbrunnen convert the stored water into high-quality electrical energy* - according to a large sign on the upper ledge of the dam. Beside it, facing Vals with its back to the valley, stands the larger-than-life bronze sculpture *Engel und Löwe [Angel and Lion]* by the Swiss artist Raoul Ratnowsky, it was commissioned by the hydroelectric company and erected in 1959. Hanging inconspicuously in each of the newly adapted rooms of the Hotel Therme - Peter Zumthor calls these *temporaries, rooms created for the period of transition from the extant to the new hotel* - is one of a series of small 9x6 cm photos on thick mounting material depicting the dam during construction, a

reminder of the future hopes of bygone days. In many Valsler living rooms, however, there is reportedly a photo or picture of the little village on the banks of the river, with its chapel and the unmistakable cone-shaped peak of the Zervreilahorn in the back-ground.

According to official numbers, *approximately 5,000 dams were erected worldwide until 1949, three fourths of those in industrialized countries. By the end of the twentieth century that number had already grown to 45,000, two thirds of those were in countries of the South.* Progress marches on: local inhabitants hardly have any say in the matter anymore and are barred from long-term profits. *It is estimated that four million people had to be relocated between 1986 and 1993, meanwhile that number is much higher: according to the World Bank each dam displaces an average of 13,000 persons.*

Peter Schmid, Safrayla, in: Kur- und Verkehrsverein Vals (ed.), Tschifera - Sommer 1990, Vals 1990.

Peter Schmid, Das Kraftwerk Zerfreila, in: Kur- und Verkehrsverein Vals (ed.), Tschifera - Sommer 2002, Vals 2002.

Paul Zinsli, Walser Volksturn - in der Schweiz, in Vorarlberg, Liechtenstein und Italien (1968), Chur 2002.

Dossier Wasser, in: Le Monde diplomatique (March 2005), Berlin 2005.

In the early Christian Church adults rather than children were baptized: the completely disrobed person was first *immersed in a pool of water*, and afterwards donned *new clothes* to show that he/she had become a *new person*. The **BAPTISM / TAUFE** as a means of purification and new birth was *adopted by Christianity from older religions and enriched with new religious content*. The purified, transformed body is supposed to symbolize the *death of Jesus Christ and his resurrection*. The immersion in water as a religious initiation rite exists in the oldest cultures and all over the world, whether the aim is the cleansing of one's sins or purification as a prerequisite for rebirth. The water baptism of the Celtic Druids is probably a ritual for the bestowal of new strength through the rushing, flowing forces of the water gods. It's not a matter of who *borrowed from or influenced* whom, the religion scholar Mircea Eliade writes, because such symbols are *archetypal and universal: immersion in water signifies regression to the preformal, emersion repeats the cosmogonic act of formal manifestation*.

Peter Berresford Ellis, *A Brief History of the Druids*, London 1994.

Mircea Eliade, *The Sacred and The Profane: The Nature of Religion*, New York 1959.

Baths were among the most important public facilities in the Roman Empire. Already in antiquity they were called *thermae* - from the Greek *thermós*, hot - referring to the large bath complexes, the smaller baths were called *balnea*. From the beginning, the Roman **THERMAL BATH / THERME** was a place of enjoyment for the people, therefore, this term does not correspond to the concept of health resort in the present-day sense. Around 25 BC, still in Vitruvius' day, Agrippa was the first to erect a bath facility, he had a reservoir impounded especially for this purpose, had a canal for drainage laid. But this was only the beginning of a trend that was to continue for centuries and produce ever larger, more monumental baths, which were not just erected in the capital but in every city of the empire including the conquered provinces. In Rome alone there were *170 public baths in Agrippa's day*, and three centuries later *under Constantine the Great, 867*. The baths were constructed using government funds, generally no admission was charged, which made the emperor popular among the people, the newest bath was thus a means of power and distraction, especially in times of political crisis. The crowning achievement of this type of architecture was the Diocletian Baths, which were built around 300 and *surpassed all imperial baths in the Roman Empire in size: this bathing complex was supposed to have accommodated more than 3,000 people at a time*. The roughly 140,000-square-meter structure was completed in only eight years, thousands of slaves and forced workers were used to build it. The spatial concept did not stop at the usual arrangement of the apodyterium, or changing room, palaestra, frigidarium, tepidarium, caldarium, and laconicum, but also included gardens, porticos, restaurants, doctors' offices, libraries, and lecture halls. The great technical accomplishments in water supply and disposal were also developed during this time: canals, aqueducts, dams, cisterns. The reservoirs were constructed as independent building units located near the bath complex and with a capacity of between 10,000 and 80,000 cubic meters were no less monumental in size. The load-bearing walls in all large structures usually consisted of outer brick or stone walls and an interior filling, Roman concrete referred to as *opus caementitium*. This called for filling the space between two outer masonry layers with a mixture of *broken rock and mortar* with the wall being built upward in sections, this produced a type of *compound masonry* that formed a structural unit as a whole. Vitruvius also describes this construction method, which was based on a principle borrowed from the Greeks. He refers to it in the eighth chapter of the second of his *Ten Books on Architecture* using the Greek term *emplekton*, *interwoven masonry: Ita tres suscitantur in ea structura crustae, duae frontium et una*

media farturae - this structure is to be built of *three different sections, two consisting of facing and one of filling between them*. In any case, the elaborate construction and fittings of the Roman baths that developed in the period to follow were the ancient forerunners of our modern water parks. The basement levels were the maintenance floors, a network of passageways and roads, with an army of slaves working to keep the facilities running. The opera *Alarico il Balta* by Agostino Steffani was first performed in Munich in 1687: the Visigoth king Alaric and his men rebelled against Roman rule, invaded Italy several times, and finally in 410 plundered the capital. This act of vengeance earned him a place of honor in history and, since he died in Sicily soon afterwards and was allegedly buried beneath the riverbed of the Busento, posthumous glorification as well. This baroque *dramma per musica* portrays the King of the Goths becoming involved in clandestine liaisons with Romans after his conquest, fittingly, the second act takes place in a secret and unusual setting, beneath the imperial baths: once again art feathers hard historical fact with amorous folly.

The end of public bathing, however, was already imminent. As Christianization spread, so too did its disapproval of the baths, which only outlived the Roman Empire for a short time, were gradually abandoned, in some cases adapted for other uses, or left to decay. After that, bathing in Europe was to sink into oblivion until the twelfth century.

Marga Weber, *Antike Badekultur*, Munich 1996.

Renate Tölle-Kastenbein, *Antike Wasserkultur*, Munich 1990.

Vitruvius (Morris Hicky Morgan, trans.), *The Ten Books on Architecture*, Cambridge 1914.

Heinz-Otto Lamprecht, *Opus Caementitium – Bautechnik der Römer*, Cologne 1984.

Access to the fountain takes you around a bend, four steps downward through a long, narrow, and dark passageway, feeble light and a splashing sound filter out of the room: in the **DRINKING STONE / TRINKSTEIN** water falls from high above into the round fountain opening in the ground, encircling this is a brass handrail, to which brass cups are attached by chains - you can drink the water here, straight *from the warm spring* and unfiltered. Light shines from the fountain opening, the room has a square base and is twice as high as its entrance, against the walls, great slabs of Vals stone are stacked all the way up to the ceiling as if in a showroom, polished glossy surfaces, broken edges, fist-sized brass blocks as spacers. In the weak light the stone surfaces reveal, their different shades of grey with shimmering mica specks, fine veins, and different colored crystalline inclusions. On the wall of the passageway a brass plaque gives a detailed analysis of the *calcium sulfate, hydrogen carbonate water*. A series of sketches documents the planning process for this *block*, the hand-written caption under the drawing says, *Theme: inside the fountain* - and then in parentheses, *you enter the fountain*, the brass parts are shown in fluorescent yellow. One floor down, where the water treatment facilities are located, the fountain is visible as a concrete cube suspended from the ceiling, its sides each measuring roughly one meter.

Peter Zumthor, in: Nobuyuki Yoshida (ed.), Peter Zumthor (Architecture and Urbanism - Extra Edition), Tokyo 1998.













In Rhaeto-Romanic the Vals valley is called Val Sogn Pieder after its patron St. Peter. And perhaps this even gave rise to the German word, VALSER - though there is no historical consensus on this. According to other evidence and the more generally accepted version, the word *Vals* originates from the Latin word *vallis*, valley. This belief is supported by the fact that *Vals* and *Vals*er can also be found in other Alpine countries, where on both sides of the Brenner pass secluded valleys, alpine pastures, streams, mountains, and other places bear this word in their names. Yet the Walsers were never there, the most likely explanation is that the invasions of the Roman armies left these linguistic traces behind. The history of the village of Vals, by contrast, does indeed record the migration of the Walsers, who came from Valais *in several waves* from *the fourteenth century* on, gradually *cultivating* and *Germanizing* the area. Their ancestors were *Alemannic farming settlers eager to claim as much land as possible*, writes Paul Zinsli, the authoritative Walser researcher from Chur who taught at the University of Bern from 1944 till 1971, his seminal work is entitled *Walser Volkstum [Walser Folklore]* and was first published in 1968. According to his definition it was a *late inner-alpine migration*. By the first turn of the millennium these *farmers and herdsmen had already crossed the high Alpine ridge and settled in the watershed of the Rhone*. It was from here that from the twelfth century on the *Valais people* set out in small clans and groups in all directions, becoming *Walsers*: to the high valleys of what are now Piedmont, Grisons, Liechtenstein, Vorarlberg, and Tyrol. For the most part they were pioneers, the first to cultivate the areas where they settled. Later generations, in turn, sometimes left these settlements to cultivate new wilderness areas. They probably did so for various reasons, but the chief motivation was always an economic one: the new landowners and feudal lords granted them a number of rights and freedoms, which at the time were by no means shared by all: *total personal freedom, the right to form communities with their own jurisdiction, and the right of free heirship*. In return for this, *these German farmers, who were accustomed to harsh mountain life, provided a more sustainable cultivation of lands that had until then probably only been used as pastures*. The gathering place for the community and its jurisdiction was at the center of the settlement and was referred to simply as *Platz [square]* - a designation still used in Vals, and not only there.

Many other linguistic similarities corroborate the shared cultural roots of the scattered Walser populations. Where they moved to areas with Rhaeto-Romanic populations, they have assimilated this language in numerous expressions. Looking back,





the legends passed down over the ages also reveal connections: various themes and motifs can be found in the entire Alpine region - and even far beyond, most of them are about people who have died and must atone for something and are therefore forced to haunt the earth as *people of the dead* or *people of the night*, about wild women- or menfolk who do good or evil, about stones that look like the devil or witches, or about shepherds and cowherds who led such wanton lives in the remote Alps that they are being punished for centuries to come. In this context, the Piedmont Walsers dream of the *lost valley*, an unattainable paradise that lies beyond the highest mountains and beneath densely packed glaciers, a land like in the bygone days of prosperity, perhaps like their ancient home, a land *rich with woods and meadows, great fountains and magnificent springs*. But no legend speaks of the spring in Vals. And of all people, the Valsers themselves showed *the least interest in its healing powers*, says Paula Jörger, who continued to expand to her, father's notes well into the 1940s: *During the summer, farmers had no time for therapeutic baths, and in the wintertime when their rheumatism would flare up, the bath was closed*. So much for that, but as to pronunciation, in 1913 Johann Josef Jörger wrote the following in the *introduction to his book*: In the local vernacular it's *Fals*, not *Vals*, as foreigners are wont to say. And the language lives on in this sense of self-assurance: *Wir Valsler sagen "Falser" und nicht "Walser" zu unserem Wasser [We Valsers call our water "Falser" and not "Walser"]* - Peter Schmid once wrote for an ad for the Valsler Mineralquellen AG, a slogan still being used today.

Johann Josef Jörger, *Bei den Walsern des Valsertales* (1913), edited and expanded by Paula Jörger (1947), 5th edition, Basel 1998,

Paul Zinsli, *Walser Volkstum - in der Schweiz, in Vorarlberg, Liechtenstein und Italien* (1968), Chur 2002.

Ludwig Imesch, *Was die Walser erzählen*, Frauenfeld 1999.

According to the first design idea, the building was to consist of *huge, hollowed-out stone blocks* of Vals gneiss, exactly as they are broken from the quarry at the other end of the village, before they are processed any further. This plan was soon abandoned, however, because the blocks turned out to be too heavy to transport and work into the masonry. The basic idea in the end was that the *monolithic effect* could also be achieved through the stacking of thin slabs, thus technical feasibility proved both limiting and helpful in the design process, the solution was that which was *easiest to produce* at the quarry, the slab, which comes in different lengths, widths, and thicknesses, can be left rough or given any number of surface finishes. These slabs are most commonly used for roofs, floors, flights of stairs, but also for work surfaces and furnishings of every kind. Beside and in front of the production hall they are stacked, broken, split, rough-sawn, ground, or polished, and categorized according to certain specifications and criteria. These dressed slabs are the transformation of the once monolithic blocks of stone and also served as a model for executing the initial design idea in that they determined how the material would be applied: the stone slabs are not used conventionally as adhered veneer or curtain wall cladding, but form a stacked and, in conjunction with the concrete construction behind it, structural wall of **COMPOUND MASONRY / VERBUNDMAUERWERK**.

Many photo series by various photographers such as H el ene Binet, Margherita Spiluttini, Hans Danuser, and Henry Pierre Schultz focus in particular on this detail of the layering of the stones in the interior and exterior of the building. Henry Pierre Schultz has also documented the successive building phases at the construction site in several series, from excavation to the inauguration in December 1996. For instance his photographs show the erection of the *blocks* that structure the entire construction and define the individual bathing zones, in many photos they are the main actors on the construction stage, so to speak, visually explaining the structural and functional design. First, the inner framework is installed, this is a kind of *lining*: colored concrete, is poured into the room-high formwork, then the form boards are removed, the outer sides of the exterior walls coated with a moisture-resistant, thermal insulation layer. The next step entails installing a lattice of steel reinforcement rods over this layer as well as over the naked concrete towers of the interior walls, the latter also being fitted with the heating pipes. Construction of the outer framework is begun at a distance of up to 30 cm: the stone slabs in three different thicknesses are stacked exactly according to the *Steinschichtenplan*, or *stone-course-laying scheme*, at the edges

and corners, string lines are positioned along the vertical and horizontal planes to accurately mark the contours of the wall being raised. At intervals of 60 centimeters of erected stonework the cavity is filled with concrete, the built sections are covered with protective plastic, then the next 60 centimeters of stonework is erected, and so on up to the top. In this way the layers of stone are knitted to the reinforced concrete behind them, the walls of the *concrete cores* serve in this context as the inner mold of the formwork, they ultimately enclose the individual bathing and relaxation zones, the wall taken together is thus a compound wall, with the stones and the concrete forming a structural unit, the outer stonework is both outer skin and part of the load-absorbing and bearing structure. The stone slabs are of two different widths or depths, 12 and 15 centimeters, allowing them to *interlock and bond* well with the concrete as it is poured into the cavity behind it. The structural system of the walls also includes *two further principles*: at the earth face along the mountain side of the structure, the boundary is formed by a load-bearing concrete wall and for the corridors and rooms on the therapy level both sides of the walls consist of stonework with reinforced concrete cast in between. This method of building is modeled on road boundaries or *older retaining walls on mountain roads*, it was adapted especially for this building, for this stone. Soon everyone at the construction site was referring to it as *Vals Compound Masonry*.

The *stone-course-laying scheme* specifies the rules for laying the stone slabs, Peter Zumthor calls them *rules for knitting* and speaks of a special *pattern of joints*, of a kind of *stone fabric*: the corner leads on both sides are specified, there are three to five corner stones of precise widths, lengths, and heights which are placed in an irregular sequence, so that at first glance *no apparent rule or repetition can be recognized in the wall pattern*. This ensures the *tranquil and natural appearance* of the masonry. Along the walls in between the corner leads the workers chose the lengths of the stone slabs themselves, the only requirement was to *keep them as long as possible* and to *stagger* the butt joints of each course by *at least 30 cm* in respect to those of the previous and subsequent courses. The height of the individual rows is determined by the corner leads, the mortar joints and the stone layers thus follow a predetermined layering order, each course maintains its precise level throughout the entire building, over walkways, steps, stone benches, and doorways. This is determined by the height of a step, which measures fifteen centimeters, accordingly the *stone-course-laying scheme* specifies three slab thicknesses of 63, 47, and 31 millimeters,

the order of which is varied irregularly, in between is a three-millimeter-thick mortar joint. The junction between steps and wall most clearly reveals the uninterrupted layering principle, which is also followed by all the engineering details including pool overflows, cleaning gulleys, expansion joints. Where water and air come together, the stone layers have begun to show the patina of age.

It is not with huge blocks of stone that the *monolithic* effect of the structure is produced, therefore, but *with a small pattern* running through the entire building like a *matrix*. It is modeled on the surrounding structures, formations interpreted in scientific terms: the strata of certain rock faces of the surrounding slopes have been estimated by geologists to be roughly 50 million years old.

Peter Zumthor, Thermal Bath at Vals, London 1996,

Peter Zumthor, Works Buildings and Projects 1979-1997, Baden 1999,

Peter Zumthor, Das Mauerwerk der Therme Vals, in: Hotel Therme Vals (ed.), Stein und Wasser - Kultur Winter 2003/04, Vals 2003.

Since the Romans were influenced strongly by the customs and way of life of Greek culture on Italian territory, the development of the Roman baths can also be traced back to the Greek prototype. While Greek baths were incorporated in the sports facilities and reserved for athletes, however, Roman thermal baths were built for the enjoyment and communication of the people, the structures became more and more monumental over the centuries, the engineered facilities increasingly sophisticated. The instructions **VITRUVIUS / VITRUV** gives for the construction of bath facilities in the tenth chapter of the fifth of his *Ten Books on Architecture* were written during an early period of the Roman thermal baths and correspond to a great extent to the Greek methods, It is believed that Vitruvius wrote his books between 33 and 14 BC, he was an architect and military engineer, built war machines for sieges, bridges, and aqueducts. In respect to architecture, he established the principles of *firmitas*, *utilitas*, and *venustas*, or *firmness*, *commodity*, and *delight*. The chapter entitled *Baths* exemplifies this theoretical approach: location and orientation are just as important as the manufacturing of building materials and the construction of the hypocaust heating and the domes. Greek typology is evident in the terms: which nearly all have Greek linguistic origins. After Vitruvius, these concepts not only became a part of Roman thermal bath history but some also live on today in many European languages. Vitruvius includes the laconicum and the tepidarium in his ideal bath, in other words the sweat bath and the warm bath according to the Greek model. He classifies the so-called frigidarium, the cold bath, among the baths of the xystos, or covered tracks. In subsequent developments it becomes the central and most luxurious room in a Roman bath, surpassing the other areas architecturally as well. Vitruvius' instructions are like recipes without exact measurements but with a fundamental systematic approach.. Thus, there is a wide margin for interpretation, but Renaissance architects seemed to be the first to realize this - his was the only architectural treatise written until the middle of the fifteenth century, or at least the only one preserved.

Vitruvius (Morris Hicky Morgan, trans.), *The Ten Books on Architecture*, Cambridge 1914.

Marga Weber, *Antike Badekultur*, Munich 1996.

The European-wide development of tourism from the end of the nineteenth century on is closely linked to the growth of international transport lines. This applies to the resort town of Vals as well: the road to Ilanz was completed in 1880, by 1903 the railway line was extended to Chur. During this period the *Aktiengesellschaft Therme* was founded and a spa hotel and bath facility opened for business. These buildings are part of the past now, torn down long ago, but as one enters the village, one can still find the **HISTORICAL BACKGROUND / VORGESCHICHTE** of the current hotel and thermal bath in the form of a handful of lower and *tower-like* buildings from the 1960s and 1970s with their long rows of balconies and flat roofs. The complex became the first so-called *Aparthotel* in Grisons, comprising 345 apartments, which were sold to private owners, the hotel took care of the infrastructure, that is, it ran the kitchen and thermal bath. This brought *an enormous boom for Vals*. But *for health reasons* the owner sold the *Kurverwaltung stocks* in 1970, the very year of its inauguration. Eventually, four years later, the property was sold to a Swiss bank, and finally in 1983 ownership passed on to the community of Vals. The *Hotel und Thermalbad Vals AG* was founded, a board of directors elected, a redevelopment plan worked out, debates and disputes conducted, town meetings organized. In the end Peter Zumthor was commissioned to build a new thermal bath - to comply with building code regulations, his design entailed an underground facility. His concept saw the extant building as a *historical part of the site: A special kind of collage of old and new is to generate architectonic energies which only this special context allows*. The high demands of the client have become reality: *We want to get the "world" to come visit us*. The new bath was inaugurated in 1996 and only two years later it was placed on the list of conservation sites.

Peter Schmid, The History of Therme Vals, in: Hotel Therme Vals (ed.), Stone and Water - Culture and Events Summer 2006, Vals 2006.

Peter Zumthor, in: Hotel Therme Vals (ed.), Information and Prices - 2004/2005, Vals 2004 (and subsequent issues).

Many of the oldest Christian churches or the buildings replacing them are located directly beside or on top of natural springs, integrating or building over the former Celtic sacred water sites. The Cathedral of Chartres, for example, is built over an underground dolmen, a Celtic tomb in which a deep well leading to a sacred spring and the remains of a ritual site were found. Perhaps the Druids conducted their water baptisms there, perhaps the sacred hill was an important gathering site: *Chartres was once surrounded by a circle of gigantic stones, menhirs, dolmens, and other stone constellations, many of them have disappeared, but their names still remain* - writes the Chartres scholar Louis Charpentier. Christianization initially forbade such cultic rituals at springs and people were punished for worshipping false gods, but since this didn't bring about lasting acceptance in the minds of the prospective converts, from the end of the sixth century on the Church began transforming the cultic water sites into holy springs, the various holy wells, chapels, and churches are dedicated almost without exception to female saints to make it easier for the people to substitute her for the spring goddess. In this way, what had once been an important sacred spring became a popular **PILGRIMAGE / WALLFAHRT** destination, names like *Church of Our Lady* or *Notre Dame* - like in Chartres - were not just intended to show Christian women the way to the church. A familiar image in Christian iconography shows the Virgin Mary stepping on a serpent. There are, of course, the Christian interpretations, which are perhaps a result of missionization efforts in this context to claim the images as well: even in the oldest religions people worshiped images of a maternal earth goddess who was always depicted with a serpent, the symbol of earth, water, and regenerating life.

Through the pilgrimage, people learned the meaning of traveling, the word *pilgrim* comes from the Latin word *peregrinus*, *foreigner, one who journeys in foreign lands*. This legitimized tourism for the common people. Today pilgrimages to special events have become popular again, the organizers promote them as *wellness for the soul*.

Louis Charpentier, *Die Geheimnisse der Kathedrale von Chartres*, Cologne 1972.

Hans Egli, *Das Schlangensymbol - Geschichte, Märchen, Mythos*, Solothurn - Düsseldorf 1994.

Barbara Hutzl-Ronge, *Quellgöttinnen, Flußheilige, Meerfrauen - Mythen, Sagen und Sternzeichen zum Wasser*, Munich 2002.

No pump is necessary to draw water from the spring to the *fresh water reservoir* located beneath the *Indoor Pool*, explains Fredy Schnyder - the man in charge of building services who was also employed here for many years under previous ownership - on a tour of the floor beneath the baths, the engineering and **WATER TREATMENT / WASSERAUFBEREITUNG** level. Valsler mineral water is currently taken from two sources, both are *boreholes with artesian overflows* located near the thermal bath at roughly 1,250 meters above sea level. The bath draws its water from the so-called *Neubohrung, the new borehole*, which is 95 meters deep. It was drilled in 1980 and *with an average flow rate of approximately 350 l/min it is the source with the highest yield. It also has the highest mineralization content (approx. 1.9 g/l) and the highest temperature (30°C)* - writes Peter Hartmann. Half of this water is channeled to the Valsler Mineralquellen AG bottling plant at the entrance of the village, the other half keeps the *fresh water reservoir* of the Therme filled around the clock. A small amount of this fresh water is constantly being *pumped* into the individual pools by the circulation system: flowing in through *brass outlets* at calf level, flowing out through the *overflow gulleys* at the edge of the pools and in the top step, it is channeled via *temporary storage reservoirs* to the filter system. In the *Drinking Stone* *ferrous water* still *warm from the spring* spouts from a *chrome steel pipe* high above your head and splashes into the round fountain opening in the floor, it spurts out of brass pipes at head level in the corridor at the rear wall of the bath, the so-called *Fountain Hall*, offering guests as they enter the bath a fivefold glimpse of this new experience: like a cryptic fresco, the *red water* leaves ochre and rust colored traces on the concrete wall, splashing a wide arch of brownish color on the stone floor before disappearing into the narrow gulley. Contact with the oxygen in the air produces iron oxide the rust-red separates and settles, in the four-meter-deep *fresh water reservoir* it falls to the bottom of the pool. This natural process, however, does not sufficiently rid the water of its iron, so that *quartz sand filters* are used to remove the remaining iron before it is released into the individual pools. In the bottling plant, iron is also separated from the water before it is bottled: what is a cosmetic measure there is more than that here - at the bath, the rust-red sediment would make all surfaces slippery, especially the floors, due to this hazard there were filters in place even in the old bath. Twice a week a mixture of air and water is used to clean the filter sand.

To get rid of bacteriological contaminants ozone is added to the running water, this is done in two stages, before and after filtration. Ozone is the expensive version of water treatment and disinfection, but that is its only disadvantage. It is an *instable molecule of three oxygen atoms, at normal temperature it is gaseous with a clearly bluish hue*. Incontaminated water it splits: one of the oxygen atoms not only oxidizes and destroys metals but bacteria, viruses, and organic impurities as well. At the same time, the other two oxygen atoms become a normal oxygen molecule, as a by-product this oxygen enriches the water and the surrounding air. No *more than 0.02 mg/l* of ozone is permitted in the water, the on-duty bath attendant is responsible for constantly monitoring the ozone level in all of the pools: one cup of water is enough, the testing equipment is in the *custodian's* room. Around the inlets the gas can be detected by tiny bubbles. Ozone is largely odorless - that is another advantage it has over chlorine.

The used water flows into the *wastewater reservoir* beneath the *Outside Pool*, where it is stripped of valuable heat to be used for the heating system, before it is filtered and released into the nearby river. At the end of each season all the pools are drained, then space and stone are left to themselves and for a while allowed to breathe fresh air and gather new energy.

Peter Hartmann, Die Entstehung des Valser Mineralwassers, dissertation ETH, Zürich 1998 (a summary is available at the visitor center of the Valser Mineralquellen AG).

Rainer Weitschies, The Circulation of the Thermal Waters; in: Hotel Therme Vals (ed.), Information and Prices - Winter 2001/02, Vals 2001 (and subsequent issues).

Peter Schmid, Die Heüquelle, in: Hotel Therme Vals (ed.), Stein und Wasser - Kultur Sommer 2003, Vals 2003.

Serpent symbols and serpent cults are linked closely to water in all religions and myths in which they are found. Serpents are the guardian spirits of springs and thus of life, sacredness, fertility, and immortality. The Celtic Druids also kept snakes as guardians of their sacred and healing springs, thus in the Celtic religion they were the symbols and attributes of the corresponding gods, like of Cernunnos, the stag god. Most springs were guarded by female deities, by *Sirona*, for instance, *goddess of springs, fertility, and healing*. She, too, is depicted with a serpent. The Celts believed the serpent possessed great wisdom and abilities: *it was just as much a creature of the earth as of the water*, it knew what went on underground, *its sinuous movements were like those of underground rivers*, like the flow of the spring through the earth, and its favored sites were where these springs rose. A Celtic **CULTIC WATER SITE / WASSERKULTSTÄTTE** was presumably a thermal spring that served healing and cleansing purposes and, in this connection, was also used for various ceremonies to worship the spring and water spirits. The site itself was considered sacred, neither temples nor large buildings were erected, though they were marked by stone constellations, menhirs, or dolmens. The Druids were *priests, philosophers, judges and scholars of law, poets, musicians, seer, astronomers, sorcerers, and doctors*. They knew about the healing properties of various springs and used them for medical purposes. They discovered thermal springs and ran thermal baths - the Romans profited from this immensely: traces of Celtic baths have been found buried beneath the ruins of many Roman baths on Gaulish territory. The Druids didn't write down their extensive knowledge but passed it on orally, what is known about them was recounted by Roman historians or unearthed by archeologists. Some sites appear to be of particular importance, this includes certain fountains where water baptisms were performed as a communal ritual of initiation or sites that served as religious or political gathering places. To get to these places the Druids set out on long journeys, the springs and thermal baths were the stops along the way, a pilgrimage not in the sense of penitence or intercessory prayers, but one of mental and physical invigoration through the energy of the site. The strenuous pilgrimage was at the same time a kind of treatment in itself, and from this perspective, the Druids were the first thermal bath tourists.

Barbara Hutzl-Ronge, Quellgöttinnen, FluBheilige, Meerfrauen - Mythen, Sagen und Sternzeichen zum Wasser, Munich 2002.

Peter Berresford Ellis, A Brief History of the Druids, London 1994.

Jean Markale, Die Druiden - Gesellschaft und Götter der Kelten, Darmstadt 2005.

Back in the twentieth century, the villagers from the valley communities made a pilgrimage to the Maria Camp chapel near Vals every year. It was built in the late seventeenth century to replace a smaller chapel and owns a copy of the famous Marian icon Maria Pócs with child that is said to have miraculously shed real tears three times in the Hungarian village it originates from. For this reason and against the will and *despite the great lamentations* of the faithful of Pócs the Austrian emperor had it transferred to St. Stephen's Cathedral in Vienna. There are many copies of it scattered throughout the Hungarian and German-speaking worlds, in the original in Vienna the Madonna never cried again, but the Vals child is smiling. The path of **ACCESS / ZUGANG** through the valley leads past several chapels, each of them tied to its site in a very unique way, they follow the road or stand off to the side along an old mille trail, punctuate ravines, switchbacks, or the former dam just before arriving at the pilgrimage site in Camp.

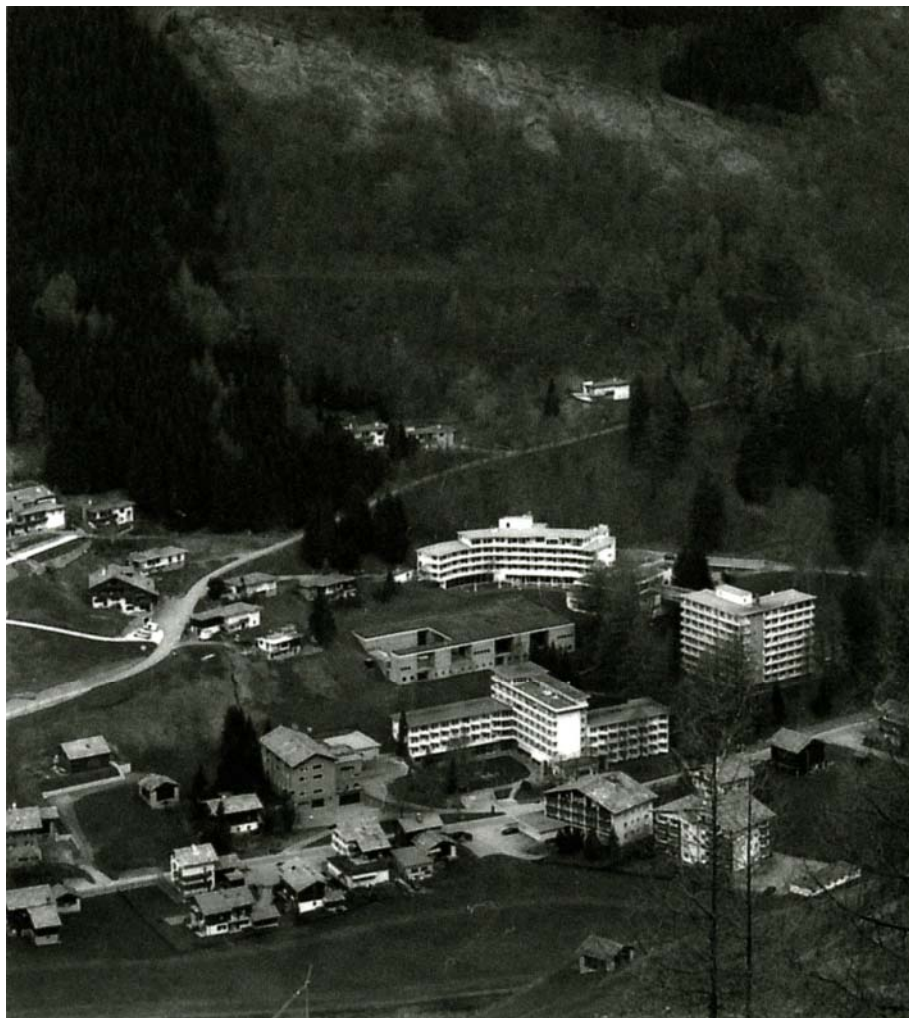
The chapels are the stops on the long road, a hidden entrance provides access to the building, the secret unfolds inside, via different themes the text finds access to architecture and its theory, keywords lead the text from one theme to the next, the alphabet or rather its structure is the method of presentation, the meanings of the concepts are not always translatable, often ambiguous, and sometimes lead to other meanings and other themes, for example: *roughly twenty percent of all people do not have access to clean water.*

István Ivancsó, Das Gnadenbild von Máriapócs, Passau 1997.

Peter Schmid, Kirchen und Kapellen im Valsertal, in: Kur- und Verkehrsverein Vals (ed.), Tschifera - Sommer 2004, Vals 2004.

UNESCO, Water for People, Water for Life, Barcelona 2003.

REALITY In May 1994, the old outdoor swimming pool of the hotel, built in the 1960s, was razed. The new building had begun. It was inaugurated on December 14, 1996. Since the bathing facilities had expanded somewhat in the course of the planning phase, the cost of the project ran to a total of 26 million Swiss francs. It was originally budgeted for 24.5 million. The objective of attracting new guests to Hotel Therme and the village succeeded from the first day. Ten years after the opening of the baths, the number of overnight visitors in Hotel Therme and neighboring accommodations has shown an increase of 45 percent on average. Every year over 140,000 visitors make use of the baths, which can accommodate some 140 people at any one time for an unlimited period. Visitors are young and old; they come from all over. Many come back. They love the beauty and serenity of the baths, they say. For many, there is something meditative, something mystical about the atmosphere; others speak of sensuality. The baths have found their visitors.



The Thermal Baths in Vals were never envisioned as a marketing product that would attract attention through name recognition or by being an extravagant land mark. Architectural tourism was not an issue. The overriding concern throughout was the quality of the services: bathing as an experience and a ritual. We wanted to create a place of rest and relaxation for the encounter between the human body and the water issuing from the spring in the mountainside just a few meters above the baths: vigorous, self-contained and rooted in the valley. It is a joy to see how a building born of these ideas is now experienced and enjoyed in the fashion in which it was conceived. People often say walking into the baths is like being immersed in another world. The baths are an inspiration, a font of images.



We architects were able to think the Therme Vals in radical terms because the people in Vals permitted us to think it in radical terms. They wanted special baths to suit them and their place; they proudly made it clear to us that they and their village are special, too.

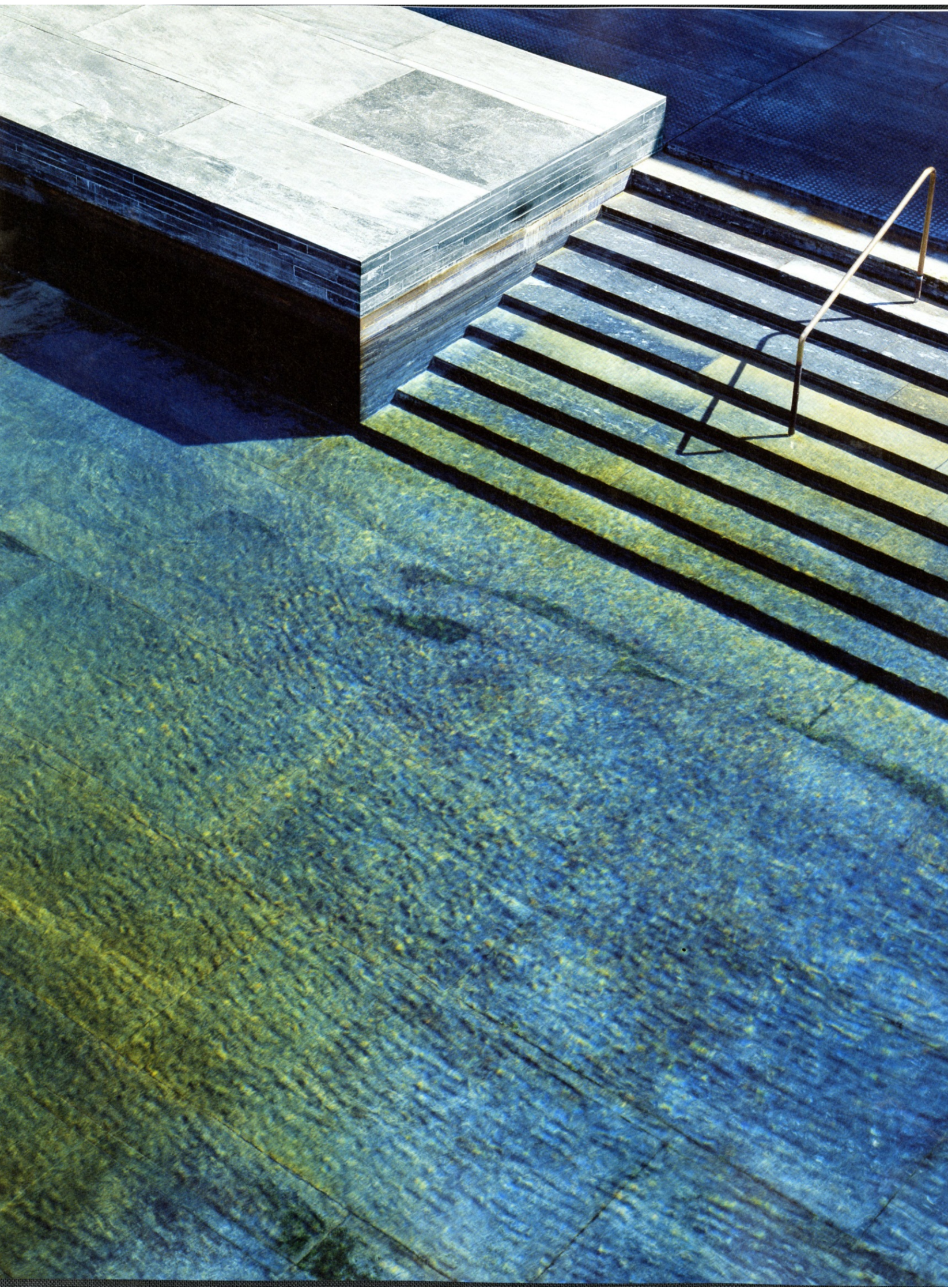
The Zervreila Dam started operations in the winter of 1957 and has since provided the community with an annual income, which amounted to 840,000 Swiss francs the year that construction on the Thermal Baths began: the community can afford to invest in being special. Pius Truffer, businessman, sportsman and president of the community-owned Hotel und Thermalbad AG, and his friend Peter Schmid, journalist and shepherd, were the driving forces behind a group of young men from the village who, at a number of town meetings, successfully convinced their fellow citizens to

approve the project and the new building. The group engaged in the political activism required to inform and involve important people in the village. Obviously, the majority of citizens in Vals did not make a commitment to a specific architectural signature or philosophy for the baths but rather to a process, a path. They wanted something special. They trusted the judgment of the men from the village who had chosen the architect and had spent years working with him to develop the special baths. But there was something else, one concrete aspect that probably tipped the scales: the baths would be built exclusively out of stone from Vals.









Bibliography and Filmography Therme Vals

- Nosedá, Irma:** ****Hotel Therme in Vals. Architekt: Peter Zumthor. Vorprojekt für den Neubau eines Hotels mit einem Thermalbad, in: *archithese* 16, 1986, No. 6, pp. 29-32.
- Zumthor, Peter:** Thermal bath at Vals, Architectural Association: Exemplary projects 1, London: Architectural Association, 1996.
- Tschanz, Martin:** Das Thermalbad in Vals, in: *archithese* 26, 1996, No. 5, pp.34-35.
- Tschanz, Martin:** Das spezifische Gewicht der Architektur. «... begeistert vom Körper». Ein Gespräch mit Peter Zumthor, in: *archithese* 26,1996, No. 5, pp. 28-33.
- Sack, Manfred:** Wasser, Stein und Licht, in: *Die Zeit*, 3.1.1997, No. 2, p. 36.
- Adam, Hubertus:** Fliessendes Wasser, geschichteter Stein. Die Felsen-therme in Vals, in: *Bauwelt* 88,1997, No. 14, p. 738-745.
- Luchsinger, Christoph:** Täuschend echt/ Illusion réelle/ Deceptively realo Thermalbad in Vals von Peter Zumthor, in: *Werk, Bauen + Wohnen*, 1997, No.7/8,pp.4-11.
- Le terme di Vals**, in: *Casabella* 61, 1997, No. 648, pp. 56-75.
- Ingersoll, Richard:** Light boxes, in: *architecture*, 1997, October, pp. 90-101.
- Steiner, Dietmar:** Peter Zumthor. Bagni termali, Vals, Svizzera/Thermal bath, Vals, Switzerland, in: *domus*, 1997, No. 798, pp. 27-35.
- Kübler, Christof:** Therme Vals: zurück in die Steinzeit? Peter Zumthors «Elementarismus» als Kontrapunkt zur virtuellen Welt, in: *Kunst+Architektur in der Schweiz* 49,1998, No.1, pp. 53-59.
- Peter Zumthor Works**, Baden: Lars Mueller Publishers, 1998.
- Irace, Fulvio:** La grande pietra/The great stone, in: Pavan, Vincenzo (ed.): *Spazio pietra architettura/Space stone architecture*. Premio internazionale architetture di pietra 99, Veronafiere. Mostra internazionale di marmi, pietre e tecnologie, Faenza: Litografica Faenza, 1999, pp.120-143.
- Lithiques.** Thermes et bains de Vals, Suisse, in: *Techniques & Architecture* 442, April 1999, pp. 84-89.
- Mandal Hansen, Peter:** Erindringer, Billeder, Associationer. Termalt Bad, 1996, in: *Arkitekten magasin* 102,2000, January, pp. 3-9.
- Takigawa, Kaori:** A space of stone containing a thermal bath. Felsen Therme in Switzerland. Designed by Peter Zumthor, in: *Comfort Interior Magazine*, 2000, June, No. 42, pp. 13-31 [Japanese].
- Peter Zumthor.** Therme Vals, Graubünden Schweiz, in: Mayr Fingerle, Christoph (ed.): *Neues Bauen in den Alpen/ Architettura contemporanea alpina*. Architekturpreis/ Premio d'architettura 1999, Basel/ Boston/ Berlin: Birkhäuser, 2000, pp. 30-45.
- Peter Zumthor**, in: *A matter of art. Contemporary architecture in Switzerland*, Basel/Boston/Berlin: Birkhäuser, 2001, pp. 40-43.
- Minimal moralia.** Reflections on recent Swiss German production, in: Kenneth Frampton: *Labour, work and architecture. Collected essays on architecture and design*, New York: Phaidon Press, 2002, pp. 325-331.
- Weitschies, Rainer:** Der Thermalwasserkreislauf, in: *Hotel Therme Vals* (ed.): *Hotel Therme Vals. Informationen und Preise*, 2002/2003, p.7.
- Zumthor, Peter:** Material und Präsenz - Zur Architektur des Bades, Teil 2, in: *Hotel Therme Vals* (ed.): *Hotel Therme Vals. Informationen und Preise*, 2002/2003, pp. 4-5.
- Zumthor, Peter:** Das Mauerwerk der Therme Vals, in: *Hotel Therme Vals* (ed.): *Stein und Wasser. Hotel Therme. Kultur*, Winter 2003/2004, pp. 34-36.
- Zumthor, Peter:** The Hotel Therme Vals is an establishment..., in: *Hotel Therme Vals* (ed.): *Hotel Therme Vals. Informations and Prices*, 2004/2005.
- Vals thermal bath**, Vals, Graubünden, Switzerland, 1990-1996, in: *World architecture*, 2005, No.175, pp. 62-71 [Chinese and Engl.].
- Schaub, Christoph:** Ort, Funktion und Form. Die Architektur van Gion Caminada und Peter Zumthor/Lieu, funcziun e furma. L'architettura da Gion Caminada e Peter Zumthor. *Televisiun Rumantscha*, 1996. Director of Photography Matthias Kälin, Sound Marti Witz. Documentary, Video, 24 min. [Roman and German].
- Böhm, Ursula:** Peter Zumthor. Der Eigensinn des Schönen, SWR, 31.10.2000, Video, 59 min.
- Copans, Richard:** Les thermes de pierre, Arte France + Centre Pompidou, 2001,Video, 26 min.
- Copans, Richard/Neumann, Stan:** Architectures 2, les thermes de pierre [a.o.],Arte France, 2001, DVD, 160 min.

Biographies

Hélène Binet

Born 1959 in Sorengo (Switzerland), studied photography in Rome. She is now an independent architectural photographer based in London, working for some of the foremost contemporary architects such as Daniel Libeskind, Zaha Hadid and Peter Zumthor. Hélène Binet has had several group and solo exhibitions.

Recent projects and publications: *Dimitris Pikionis 1887-1968: A Sentimental Topography*, Architectural Association 1989; *John Hejduk from A+U*, Yoshio Yoshida 1991; *A Passage through Silence and Light*, Daniel Libeskind, Black Dog Publishing 1997; *Peter Zumthor Works*, Lars Mueller Publishers, Baden 1998; *Alvar Aalto's North Jutland Art Museum*, Aalborg Museum, Aalborg 2000; *Architecture of Zaha Hadid in Photographs by Helene Binet*, Lars Mueller Publishers, Baden 2000; *Cornerstone: 7 Projects*, Shine Gallery, London / Guiding Light, London 2002; *Wiel Arets*, Ediciones Poligrafica, Barcelona 2002; *paysages en Poésie*, Infolio éditions, Gollion 2004; *Holocaust Memorial Berlin*, Lars Mueller Publishers, Baden 2005.

Sigrid Hauser

Born 1954 in Merano (Italy), graduated with a degree in architecture from the Vienna University of Technology, where she also did her PhD and habilitation. She won the Josef Frank-Scholarship in 1991 and has been a professor of Theory of Architecture at the Vienna University of Technology since 1996.

Selection of her numerous publications on architecture and art: *Idee, Skizze, ... Foto - Zu Werk und Arbeitsweise Lois Welzenbachers*, Löcker, Vienna 1990; *Sprache - z.B. Architektur*, Löcker, Vienna 1998; "Annähernde Entfernung / Approaching Distance", in: *Walter Niedermayr, Reservate des Augenblicks / Momentary Resorts*, Cantz, Ostfildern-Ruit 1998; "Die Stadt zwischen Erinnerung und Gedächtnis", in: Peter Mörtenböck (ed.), *Körper- Räume - Medien*, Böhlau, Vienna 2003; "Bilder mit Folgen / Images with Sequels", in: Marion Piffer Damiani (ed.), *Josef Rainer*, Folio, Vienna - Bolzano 2004; "Doppelt übersetzt", in: Zsuzsanna Gahse, Johann P. Tammen (ed.), *Im übersetzten Sinn / Vam literarischen Übersetzen [= Die Horen*, 218, vol. 2/2005], Bremerhaven 2005; "Tone, Glasuren, Blendwerke", in: *Gerold Tusch, in den geschickten Polsterungen der Sinne*, Bibliothek der Provinz, Weitra 2006.

Peter Zumthor

Born 1943 in Basel (Switzerland), trained as a cabinet maker and was educated as designer and architect at the College of Applied Arts in Basel and the Pratt Institute in New York. He has had his own architectural practice in Haldenstein (Switzerland) since 1979.

Important buildings: *Protective structure for archaeological excavations*, Chur 1986; *St Benedict's Chapel*, Sumvitg, Graubünden 1988; *Residential building for the elderly*, Chur 1993; *Gugalon House*, Versam, Graubünden 1994; *Spittelhof Estate*, Biel-Benken, Baselland 1996; *Therme Vals*, 1996; *Kunsthau Bregenz*, 1997; *Swiss Pavillion Expo 2000*, Hannover 2000; *Documentation center Topography of Terror*, Berlin, parts built in 1997 demolished in 2004 by the city of Berlin; *Zumthor Studio and Residence*, Haldenstein 1986/2005; *Kolumba art museum*, Cologne 2007; *Field Chapel for Brother Klaus*, Wachendorf, Eifel 2007.

Therme Vals

Proprietors: **Borough of Vals, Hotel und Thermalbad AG**

Architect: **Architekturbüro Peter Zumthor**, Haldenstein (CH), with **Marc Loeliger, Thomas Durisch, and Rainer Weitschies**,

Civil engineers: **Jürg Buchli** and **Casanova + Blumenthal**,

structural engineers; **Franz Bärtsch**, site engineer;

Ferdinand Stadlin, building physics; **Meierhans + Partner**, heating, ventilation and climatisation design; **Schneider Aquatec AG**, heat equipment and sanitation technology

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