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CONSTRUCTING ARCHITECTURE
MATERIALS PROCESSES STRUCTURES
A HANDBOOK

The pathos of masonry

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Fig. 1: The intermeshing of nature and the built environment in the image of ruined masonry
Mario Ricci: "Capriccio" style with ancient ruins, pyramid and decoration

Layers

Pathos is "in" – despite its bad reputation for being "hollow", a reputation that, shadowlike, accompanies every emotional expression. Region, identity, space – terms that formerly were used with care – now take on an excessive force, probably in order to become points of reference in a rather uninteresting situation, or just to cause a sensation. And in architecture what could be more emotional than masonry? Where masonry is concerned we think of a figure with characteristics that tie the masonry to a certain place; characteristics like material, colour, weight, permanence. It is the artistic characteristic of masonry that provides the ethical and aesthetic resonance that legitimises many things. A wall with a coat of plaster or render is not necessarily masonry, regardless of how well it is built and coated. Masonry is "a structure that remains visible in its surface and works through it"[1] – regardless of the material used: natural stone or man-made bricks or blocks.

The relationship between nature and the built environment, as it was represented in the ruined masonry of the late Renaissance "Capriccio" genre, was intended to demonstrate the vanity of building and the corrupting power of death. In the end nature is waiting to take revenge for its violation "as if the artistic shaping was only an act of violence of the spirit".[2]

But the connection between masonry and nature can also be looked at from a less melancholy standpoint. Rudolf Schwarz described in his book *Von der Bebauung der Erde* (Of the Development of the Earth), published in 1949, the material structure of the Earth as masonry built layer by layer, starting with the seam "made from waferthin membranes of the universal material", from precipitation and sedimentation.[3]

Viewed by an unprejudiced onlooker the masonry *itself* should appear as a rather commonplace product when compared with the complex structures of high-tech industry. However, we sense the pathos quite clearly when masonry becomes the symbol for the building of the Earth, for the creation – or for homeliness as a contrast to modernisation. Brick-effect wallpaper, which decorates many basement night-clubs and discotheques, shows the sentimental meaning that attaches to masonry.

There are at least two debates about masonry: one about its surface as a medium for meaning and a boundary, the other about its mass as a product of manual work. Although both debates overlap constantly, I shall deal with them separately here.

The lightness: the wall, the art

No other theoretical study has formulated more new ideas regarding the double identity of masonry (and inspired a lot more) than the two volumes of Gottfried Semper's *Style in the Technical and Tectonic Arts: or, Practical Aesthetics*. The basis of Semper's system is the typology of human production methods: weaving, pottery, tectonics (construction in timber) and stereotomy (construction in stone). These four types of production correspond to the four original elements of architecture: wall, stove, roof and substructure (earth fill, terrace). What is important here is the ontological dimension of this breakdown: those four elements are not formally defined, but rather are aspects of human existence. It is remarkable to witness the flexibility that the seemingly rigid breakdown of architectural techniques allows with regard to the determination of its components. Even a mere sketch would be beyond the scope of this article. At this point it is important to establish that masonry artefacts could be products of the two "original techniques" – weaving and stereotomy. Tectonics, "the art of joining rigid, linear parts"[4] (an example of this is the roof framework), is alien to masonry.

Semper's observations were influenced by the remains of walls discovered during excavations in the Assyrian capital Nineveh, which he saw in 1849 when he visited the Louvre. In his opinion these masonry fragments confirmed his clothing theory: the wall as boundary is the primary element, the wall as a load-carrying element in the construction is of secondary importance. The stones forming the surface of the Assyrian masonry (the remains at least) were assembled horizontally on the ground, painted, enamelled, baked and only then erected. In his manuscript *Vergleichende Baulehre* (Comparative Building Method) Semper wrote: "It is obvious that clay brick building, although already well established in Assyrian times, was not focused on construction. Its ornamentation was not a product of its construction but was borrowed from other materials."[5] This theory still provokes – and inspires – us today because of its apparent reversal of

Fig. 2: The wall as a boundary element is the primary function, the masonry as loadbearing element the secondary function.
Nineveh, excavations of town walls between 1899 and 1917

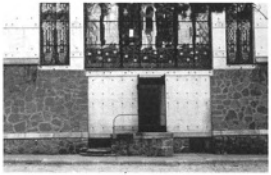

Fig. 4: Stereotomy and marble-clad masonry
Otto Wagner: Steinhof Church, Vienna (A), 1907

Fig. 3: Lightweight rendered facade over heavyweight masonry
Jože Plečnik: Sacred Heart of Jesus Church, Prague (CZ), 1939

cause and effect. It is the appearance of the masonry, its wickerwork-like surface, that determined the technique, and not vice versa. Semper states that the knot is "the oldest technical symbol and … the expression of the earliest cosmogonic ideas",[6] i.e. the prime motif of human *tekhne*, because a structural necessity (the connection of two elements) becomes an aesthetic, meaningful image. The effect of an oriental carpet is based on the rhythmic repetition of its knots; the whole surface is processed uniformly. Art is always a kind of wickerwork: a painter – no matter if he or she is a landscape painter of the 19th century or an "action painter" like Jackson Pollock working in the 1950s – works uniformly over the whole of the canvas, instead of placing coloured details onto a white surface. Only this calligraphy allows us to experience masonry. "The mesh of joints that covers everything, lends … the surface not only colour and life in a general way but stamps a sharply defined scale onto it and thereby connects it directly with the imagination of human beings", wrote Fritz Schumacher in 1920.[7]

Although Semper's theory regarding the textile origin of the wall has it roots in historicism and has been misunderstood and criticised by many representatives of the modern theory of material authenticity, it still influenced the aesthetics of masonry in the 20th century. Naturally, this fact cannot always be attributed to the direct influence of Semper's theory. But in the architecture of Vienna the acceptance of Semper's ideas is unmistakable and even today architects like Boris Podrecca still feel bound by this tradition. Above all, it was the group led by Otto Wagner who interpreted Semper's theses early on in an innovative way. The facades of the Steinhof Church (1905–07) and the Post Office Savings Bank (1904–06) in Vienna are structured according to Semper's distinction between lower, stereotomic and upper, textile bays.

A pupil of Wagner, the Slovene Jože Plečnik interpreted these themes in a new way, as can be seen in his works in Vienna, Prague, and Ljubljana. "New" here means that he integrated his knowledge about ancient forms with virtuoso competence: distortions, alienations, borrowed and invented elements balance each other. The facade of the Sacred Heart of Jesus Church in Prague, built (1932–39) according to Plečnik's plans, is clearly divided into lower, brick-faced and upper, white-rendered zones with granite blocks projecting from the dark brick facing. The facade of the library of the university of Ljubljana (1936–41) is also a membrane of stone and brick. In this case the combination probably symbolises Slovenia's twofold bond with Germanic and Mediterranean building cultures.

Louis Henry Sullivan compared the effect of facades built with bricks made from coarse-grained clay to the soft sheen of old Anatolian carpets: "a texture giving innumerable highlights and shadows, and a mosslike appearance".[8]

Fig. 5: A weave of natural stone and clay bricks
Jože Plečnik: University Library, Ljubljana (SLO), 1941

As its name alone indicates, Frank Lloyd Wright's invention, "textile block" construction, tries to achieve the fabric-like effect of precast blocks made of lightweight concrete. In 1932 he wrote an article in which – distancing himself from the sculptor-architects – he called himself a "weaver" when describing the facades of his buildings in California, e.g. La Miniatura or Storer Residence (1923): "The blocks began to reach the sunlight and to crawl up between the eucalyptus trees. The 'weaver' dreamed of their impression. They became visions of a new architecture for a new life… The standardisation indeed was the soul of the machine and here the architect used it as a principle and 'knitted' with it. Yes, he crocheted a free wall fabric that bore a great variety of architectural beauty…

Fig. 6: Decorated brickwork
Louis Henry Sullivan: National Farmers' Bank, Owatonna (USA), 1908

Palladio! Bramante! Sansovino! Sculptors, all of them! But there was I – the 'weaver'."[9]

Ancient and Byzantine masonry and the religious architecture of the Balkans show in many different examples how the surface of the masonry becomes a robe when decorations are used instead of a structural configuration with pilaster or column orders, e.g. by inserting glazed ceramic pins or small stones into the mortar joints. These buildings manage without a facade formulated with the aid of openings and sculptural embellishments and instead favour the homogeneous impression of the masonry fabric. In the late 1950s the Greek architect Dimitris Pikionis designed the external works to a small Byzantine church on Philopappos hill, near the Acropolis in Athens. His plans included a footpath, an entrance gate and other small structures. Here, Dimitris worked, even more than Wright, as a "weaver", knitting together landscape, existing and new elements to form a colourful story.

Fig. 7: Wright's second "textile block" house in Los Angeles
Frank Lloyd Wright: Storer Residence, Hollywood (USA), 1923

Carlo Scarpa created a similar work with historic wall fragments and new layers at the Castelvecchio in Verona. Dominikus Böhm, Rudolf Schwarz and Heinz Bienefeld also used decorative masonry "clothing", often with inclined courses, brick-on-edge courses and lintels in order to illustrate that the shell is independent of the foundation. The facades to the Markus Church in Björkhagen (1956–60) designed by Sigurd Lewerentz demonstrate yet another strategy: the horizontal bed joints are as high as the masonry courses themselves. For this reason the brick wall exudes a "calm" expression, as if it was made of a completely different material to that used for the construction of, for example, the Monadnock Building in Chicago – an ancient skyscraper which, in the era of frame construction, was built in brickwork at the request of the building owner. In this building the enormous compressive load could be visually expressed.

The textile skin corresponds to the idea of the "decorated shed" propagated by the American architect Robert Venturi. The Venturi practice, an imaginative workshop of post-Modernism, strives for a rational (according to American billboard culture) separation between the building and the medium conveying the meaning. The facades of many buildings designed by this practice employee large-format panels covered with a floral pattern that leave a naive, ironical impression. The decorative brick facades of the Texan architectural practice of Cesar Pelli also underline that the outer skin is a shell – like almost all masonry, at least since the oil crisis, when the new thermal insulation regulations made solid masonry quite uneconomic.

Fig. 8: The interweaving of the structure and its surroundings
Dimitris Pikionis: Landscaping and refurbishment of St Dimitris Lumbardiaris Church, Philopappos hill, Athens (GR), 1957

In the works of SITE, the architecture and environmental arts organisation led by James Wines, masonry as a kind of shell becomes a symbol for the consumer society; its character as a false, glued-on decorative layer

Fig. 9: Historical wall fragments, new layers
Carlo Scarpa: Reconstruction of the Castelvecchio, Verona (I), 1958–74

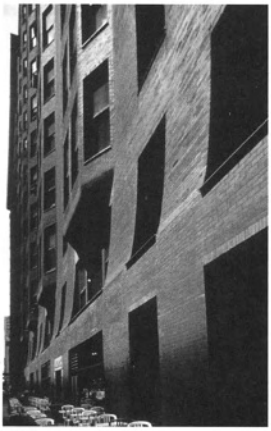

Fig. 11: The world's tallest self-supporting brick facade
Burnham & Root: Monadnock Building, Chicago (USA), 1884–91, extension: Holabird and Roche, 1893

Fig. 10: Bed joint widths approaching the height of an individual brick
Sigurd Lewerentz: Markus Church, Björkhagen near Stockholm (S), 1960

peeling away from the substrate was featured in several department store projects. Such preparatory work was obviously necessary in order to pave the way for dropping all moralising about clothing as an illusion, about masonry as a mask. In today's architecture the material authenticity of masonry is often perceived as a myth – in keeping with SITE ideals, just a bit less pithy. The Swisscom headquarters in Winterthur (1999) by Urs Burkhard and Adrian Meyer asks whether a facade system, a product of industrial technology and consisting of prefabricated masonry panels, still needs the pathos of manual skills, or – perhaps on closer inspection and thanks to the unusual precision and the joints between the panels – whether it comes closer to the modern ideal of brick as a material that has freed itself from manufacture (according to Ernst Neufert). The loadbearing structure of the apartment block in Baden designed by Urs Burkard and Adrian Meyer (2000) consists of the masonry of the facades, the concrete service tower and the in situ concrete floors. The distinctive floor edges allow for the stacking of the individual storeys, which is done by displacing the plain masonry panels and large window openings in successive storeys.

Fig. 12: Brick wall as peel-off skin!
SITE: Peeling Project (Best department store), Richmond, Virginia (USA), 1971–72

Fig. 13: Prefabricated brickwork panels
Urs Burkhard, Adrian Meyer: Swisscom headquarters, Winterthur (CH), 1999

Fig. 14: Colossal masonry wall
Giovanni Battista Piranesi: Masonry foundation to the Theatre vin Marellus in Rome

Massiveness: the wall, the craft

In Semper's system of original techniques stereotomy is an ancient element. The weighty earth embankments and terraces do not have the anthropomorphic, organic traits of the other components of the building, but rather an inanimate, mineral quality that is, at best, rhythmically subdivided. Stereotomy works with materials "that, owing to their solid, dense, and homogenous state, render strong resistance to crushing and buckling, i.e. are of important retroactive consistency, and which through the removal of pieces from the bulk and working them into any form and bonding such regular pieces form a solid system, whereby the retroactive consistency is the most important principle of the construction."[10] The ancient function of stereotomy is the representation of the "solid ashlar masonry of the Earth", an artificial elevation that serves as a place of consecration where we can erect an altar. The symbol of stereotomic masonry is the "most primitive and simplest construction", the "grass-covered and, as such, fortified mound".[11] It is about hollow bodies, "cell structures" – Semper emphasises that the root of the word construct, *struere*, implies the filling in of hollow spaces.[12] Giovanni Battista Piranesi dedicated the four volumes of his *Antichità Romane* to the overwhelming effect of the colossal masonry walls of his "Carceri d'invenzione". Since then masonry architecture has been associated with the underground atmosphere of dungeons. This also correlates with the method of construction of the fortress. Masonry construction was in that sense originally the filling of the fortress walls; in contrast to wattling walls it meant heavy, physical labour that was definitely intended for strong male labourers, as opposed to the art of weaving and wattling.

In his book *Das Wesen des Neuzeitlichen Backsteinbaues* Fritz Schumacher actually speaks about two worlds of masonry, a Western and an Eastern model of masonry: "The main difference therein is that in contrast to our structural way of formation the superficial ornamentation is the focal point and depicts the brilliant achievement of the Islamic masonry culture. In the light of the carpet design fantasies of Eastern artists, this is no surprise".[13]

Correspondingly, in "structural", massive masonry the joints, the "weakest" element in the masonry, are also interpreted differently. In Semper's concept the network of joints is the image of the rhythmic rows of the knots of the carpets or wattling. Rudolf Schwarz, in his book quoted above, associates the joints with the cosmic process of the Earth's creation: "A superstructure has horizontal layers and continuous joints and vertical fibres. The joints form the layers and together they provide the structure. The joint is the spaceless place where one layer abutting another starts a third".[14]

The pathos of masonry as a consequence of honest craftsmanship in the service of a national ideology cries out of every line of the book *Mauerwerk* (Masonry) by Werner Linde and Friedrich Tamms. "We have learned to master nature's powers but have lost our reverence for it," the authors claim in order to formulate their aims clearly; "The development of the masonry trade shows the

Fig. 15: Rubble stone wall
Ancient Temple of Apollo, Delphi

way the entire culture will travel".[15] An aesthetic claim is not intended here but rather an indispensable cultivation of attitude. "When such an attitude is awoken again and fortified even in the humblest tradesman it will fill him with the true joy of labour; then the labourer and his work will be one again. And that is needed!"[16] Lindner and Tamms begin their narrative with the retaining walls of terraced vineyards along the Rhine to show the beginnings of "a power of form that advanced to the ultimate consummation" – which then collapsed in the 19th century. The "desire to return to the fundamentals of all good design" makes it important to compare good and bad examples of masonry with the proven "home defence" pattern of Paul Schultze-Naumburg's cultural works.

We can follow these arguments back to the idea of material truth. John Ruskin compounded in his various writings the demand for morality with aesthetic expression. In the American architecture of the late 19th century bulky masonry arose out of granite and brick as the first results of the search for a national building style that could be called "American", expressing traits of originality, raw power, or a bond with nature. The first influential examples in this direction in the United States are the buildings

of Henry Hobson Richardson such as Ames Gate House, North Easton (1880–81), and Allegheny County Courthouse, Pittsburgh (1883–88).

The modern conception of the true identity of material, the determining character of masonry, has increasingly suppressed Semper's clothing aesthetic. The question of why a brick facing is celebrated as material truth, but render is rejected as a deception, has not been put forward. One problem, however, was quickly recognised: the industrial mass production of bricks eliminated every individual irregularity of the masonry that had always been a characteristic of "honest" handiwork. Architects contemplated (as Ruskin did earlier) "the quest for exactness" as "the source of evil", as the cause behind monotony and tediousness in masonry architecture at the turn of the century. Justice and honesty vis-à-vis the material were nothing more than the code-words of those who intended to conceal nostalgia.

"Brick boredom" was recognised around the turn of the century as a consequence of technical perfection, the quest for purity. Many architects proposed the subsequent manual working of masonry. The advantage of this method according to Walter Curt Behrendt is that the "original workmanship" would be preserved which would guarantee the finished building a certain freshness. According to Behrendt the brickwork gains an artistic expressiveness when its surface is processed afterwards. The production of brick profiles on site – a proposal that suggests sculptors on scaffolding chiselling ornamentation into the facade – means that the building process should not be rationalised and industrialised but rather should remain an individual, creative act. In this sense the brick facades of the Ledigenheim in Munich (1925–27) by Theodor Fischer were "individualised" with sculptured figures.

Fritz Schumacher, on the other hand, expected the answer to come from the material itself: for him the brick was an individual, a teacher who – unlike rendered and plastered forms that willingly accommodate "all lustful instincts of inability and arrogance" – does not allow immature whims to be given shape. "It is not very easy to get it [brick] to do just what you want it to, its earnest countenance is averse to prostitution, and so it has an inherent natural barrier against the effervescence of misconstrued or hackneyed entrepreneurial fantasies."[17]

Schumacher's buildings are today being investigated primarily from the perspective of the of the turn-of-the-century reform movement, and that is the reason why his early decorative brick facades especially are reproduced, although his school buildings constructed between 1928 and 1930 (Wendenstrasse School, Hamburg-Hammerbrook, 1928–29) are outstanding examples of modern brickwork. Stone and brick masonry were the stepchildren of Modernism; too many courses, which linked the pure surface with country, region, time or work, have contaminated the purity of the International Style. Time is not to be understood here as a stylistic epoch. It is present in the form of sediments and pollution which could enrich the surface of traditional masonry or destroy the purism of classical Modernism.

And yet architects of classical Modernism such as Hugo Häring, Ludwig Mies van der Rohe or Alvar Aalto have also constructed buildings of brick or stone masonry. The brick masonry walls of Mies van der Rohe, e.g. those illustrated in the well-known publications of Werner Blaser, are suitable for conveying precision as a sublime quality, even as drawings. In the case of Aalto it is another issue entirely. As he had pursued the idea of "flexible standards", which, like the cells of a living organism, allows a variety of forms,

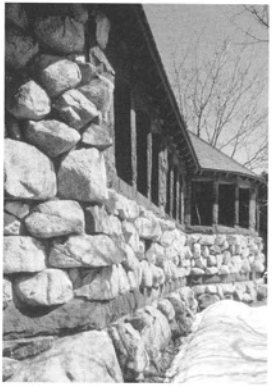

Fig. 17: The search for a national building style for the USA
Henry Hobson Richardson: Ames Gate House, North Easton (USA), 1881

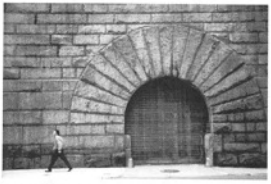

Fig. 18: Rusticated ashlar masonry as a symbol of the power of the state
Henry Hobson Richardson: Courthouse and prison, Allegheny County, Pittsburgh (USA), 1888

Fig. 16: Masonry in Berlin (1937)
A comparison of masonry by Werner Lindner and Friedrich Tamms

Fig. 19: Decoration cut into brickwork after erection
Theodor Fischer: Ledigenheim, Munich (D), 1927

he found brick to be a common denominator, comprising not only the values of mass production and industrialisation but also the warmth and identification, signs for a "new humanism".

The new humanism of the postwar period was also sought by Louis Kahn and Eero Saarinen. Kahn's library for the Philips Academy in Exeter, New Hampshire (1965–72) is a compromise. Originally, he visualised massive brick walls with arched openings; however, a concrete core with brick facing was implemented. The government buildings in Dhaka (1973-76) deliberately sought the connection to a Piranesian style for ancient engineering structures. In an interview Kahn emphasised the sought-after contrast between the coarseness of "viaduct architecture" and the fineness of the structures of human institutions.[18] This aesthetic and at the same time social vision was also a theme in many American student accommodation projects of the postwar period. Eero Saarinen wanted to suggest the atmosphere of a fortified city on the campus of Yale University; the buildings of Ezra Stiles College and Morse College (1960) are concrete walls with large natural pieces of stone "floating" in the aggregate. Saarinen reckoned that one of the reasons why modern architecture does not use masonry is the anachronism of the manual implementation: "...we found a new technological method for making these walls: these are 'modern' masonry walls made without masons."[19]

In comparison with concrete or even stone, brickwork is not a suitable material for roofing over interior spaces. The small format of the brick makes either the use of brick vaulting or additional strengthening in the form of metal ties or concrete ribs essential. According to his conviction that it is precisely the weaknesses that challenge the performance, Schumacher is of the opinion that from an aesthetics standpoint the art of envelope design is surely "the pinnacle of all possibilities" possessed by masonry construction.[20] Without doubt the works of the Uruguayan architect Eladio Dieste, whose design concepts follow in the footsteps of Antoni Gaudi's, belongs to the zenith of the envelope design. Dieste used freestanding brick walls with conoid surfaces in double curvature (church in Atlántida, 1960). He developed a vocabulary of structural forms of masonry that was rational but likewise highly expressive like Gaudi's designs. He thus challenged the prevailing attitude of the large firms where rationalisation and efficiency meant nothing more than routine, bureaucracy and the inflexible application of predictable solutions. According to Dieste it is accumulation of capital and not efficiency that drives such organisations. This is why he chose the other way, and used an ancient material with constructive intelligence instead of the newest developments from materials research as a thin covering, a "veneer".

Fig. 20: Example of a modern building using facing masonry
Fritz Schumacher: Wendenstrasse School, Hamburg-Hammerbrock (D), 1929

The restrained resistance of masonry

The purely decorative use of brick walls can always be defended with historical associations. For an artist like Per Kirkeby, who builds masonry objects as works of art, it is even more difficult – the work must exist in

itself, even as a fragment it must be convincing and self-reliant. The brickwork in its double entity of structural purity and craftlike stigma opens up vast historical perspectives. An artist like Per Kirkeby finds his identity precisely through this: "The brick and its rules, in other words the bond and whatever else belongs to this thousand-year-old handicraft, form a pure structure corresponding to everything one could call conceptual vision. And on the other hand brickwork was full of associations and clues to the great historical architecture with its ruins and other set pieces, the wafts of mist and the moonlight. And for me full of childhood connotations in the shadow of overpowering boulders of Gothic brickwork".[21]

An early attempt to link the idea of standardisation with an intensified material presence was Baker House, the student accommodation by Alvar Aalto on the campus of the Massachusetts Institute of Technology (1946–49).

Fig. 24: Curving brickwork shells
Eladio Dieste: Church in Atlántida (Uruguay), 1960

Fig. 21: Maximum openness...
Louis I. Kahn: Library of the Philips Academy, Exeter (USA), 1972

Fig. 22: ...versus the "bricked-up" appearance of a fortification
Louis I. Kahn: Government buildings in Dhaka (Bangladesh), 1976

Aalto pointed out that standardisation is evident even in nature "in the smallest units, the cells". According to Aalto: "This results in millions of elastic joints in which no type of formalism is to be found. This also results in the wealth of and never-ending change among organically growing forms. This is the very same path that architectural standardisation must follow."[22]

How can a brick possibly have the same "elastic soul" as an amoeba? Aalto's decision to use distorted, scorched bricks is rather a metaphorical statement of the problem than a solution. He uses this as a reference to ancient forms of brick architecture, to massive walls constructed from amorphous, air-dried clay lumps. The bricks of Baker House – in his words, the "lousiest bricks in the world" – are elements of this alchemistic process, with the vulgar and worthless playing a crucial role in the longed-for harmony. Aalto avoided an either-or approach for the newest or most ancient; architecture joins the two and is neither of them. A crucial aspect is that his work did not remain an individual protest. Siegfried Giedion reacted immediately in his historiography of Modernism by adding "irrationalism" to his vocabulary.[23] The materiality of the facade exercises a restrained resistance in the face of the threat to resolve architecture into the all-embracing spatial grid proposed by Ernst Neufert. This resistance of the material made it possible for Aalto to conceive his idea of standardisation as opposition to the complete availability of architecture in the service of technicised demands.

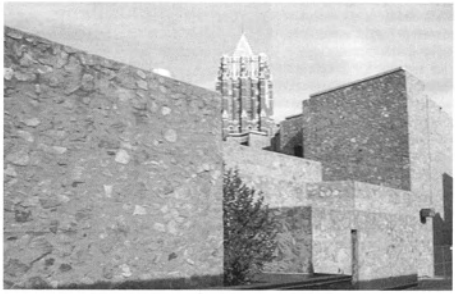

Fig. 23: Unconventional masonry
Eero Saarinen: Ezra Stiles College and Morse College, Yale University (USA), 1960

At first glance Baker House, with the powerful effect of the material of its facade, appears to be related to modern struggles to create a setting for materiality. On the other hand we sense that the aura of the sacred, these days frequently the outcome of semantic cleansing attempts, does not surround Aalto's student accommodation. The "lousiest bricks in the world" give the masonry bond so much local earth that every dream of retreat to a pure state must remain an illusion.

Another, serious alternative today is the change in the situation that came about with the new thermal insula-

Fig. 25: Organic form making use of the identical, smallest "cell"
Alvar Aalto: Baker House, Massachusetts Institute of Technology, Cambridge (USA), 1954

tion standards introduced after the oil crisis. The use of solid masonry walls with a high heat capacity, combined with appropriate heating systems that exploit precisely this property of masonry, can make solid masonry walls useful again. The Art Gallery in Marktdorf, Bavaria (Bearth & Deplazes, 2001) consists of – just like the systems of medieval dungeons and city walls – hall-type rooms and peripheral rooms. The latter are stairs and intermediate spaces located on the periphery of the building which Kahn used to achieve his longed-for separation of "servant" and "served".

So the pathos of masonry must not lead inevitability to the reinstatement of metaphorical qualities such as craftsmanship, regionalism, or heaviness – the latter understood as an answer to the increasing media compatibility of architecture. The accurate and correct questions address the use and fabrication from the perspective of rationality, not romanticism. If convenient conventions do not form a barrier to our thinking, then from a metaphorical presentation of the questions, masonry will be the right answer.

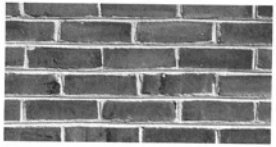

Fig. 26: The presence of the material is strengthened by using distorted, "reject" bricks. Alvar Aalto: Baker House, Massachusetts Institute of Technology, Cambridge (USA), 1954

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