Chapter 8

Passion and control

Lewerentz and a mortar joint

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'His passion for joints is obvious', writes Bengt Edman with regard to the mortar joints at Sigurd Lewerentz's Church of St Peter in Klippan, Sweden. The passion within the mortar joints at Klippan emerges from a process of conversation and risk (Figure 8.1). They remain, however, obsessively controlled. Prevailing practices of quality control in the field of architecture emphatically reject risk, prescribing certainty as a means of control, yet such practices arguably engender a quality of averages, and impede a quality of extremes. The quality of extremes - the extraordinary and shocking quality - present in the mortar joints at Klippan speak of a different process altogether.

Passion and control are both evident within the mortar joints at Klippan. The goal, observes Edman, 'is evidently not a conventional neatness [. . .] It's like baking a bread. The bricklayer is present'. 'Neatness' is rejected here in favour of mortar joints that narrate progressive decisions made throughout the construction process. The joints appear rough, irregular, unfinished: seemingly uncontrolled. Varying widely in dimension - ten, fifty, one hundred millimetres and beyond - wiped and smudged across bricks, bearing rough imprints of fingers, the mortar joints inverse conventional mortar and brick relationships, are brought forth as a primary material, taking over, subsuming the brick. At Klippan, the goal is categorically not a conventional neatness; yet, clearly, it is not uncontrolled. In fact, the mortar joints at Klippan are controlled with certainty (Figure 8.2).

Rules and deviations

The obsessive control of the mortar joints at Klippan began with strict adherence to three unyielding rules established by Lewerentz, as Colin St John Wilson describes:
In the first place we find that the use of brick is subject to three propositions stringently applied in the teeth of commonsense compromise. First, Lewerentz proposes to use it for all purposes: wall, floor, vault, rooflight, altar, pulpit, seat. Second, he will use only the standard, full-size bricks; there will be no specially shaped bricks. Third, no brick is to be cut.4

There is, emphasises St John Wilson, no ‘commonsense compromise’. No brick will be cut. There is to be no exception.

In standardised UK masonry construction, the mortar joint is instructed to remain dimensionally consistent. A nominal ten-millimetre joint is permitted a tolerable deviation of a millimetre, or two; the mortar joint is to remain subservient to the brick. The brick, a consistently prefabricated unit of assembly, is pre-cut and shaped to reconcile all foreseeable deviations. At Klippan, this hierarchy is reversed. At Klippan, it is the prefabricated brick that remains, without exception, dimensionally consistent. Because, according to the control of the three rules, no brick can be cut, the mortar joint must reconcile all irregularities during construction: accommodating slopes of wall and roof junctions, negotiating angular corners, mediating directional changes and masonry openings. At Klippan, the mortar joint, accommodating deviations, comes forth as a primary material. That this is permitted testifies to the engagement, care and tolerance of risk practised on site, between architect and builder, during construction.

‘The decision,’ writes Nicole Flora, ‘to use uncut bricks for the whole building, in fact, involved the commitment to be present every day on site to resolve problems arising there, calculating, in each case, the width of the mortar joint between the courses, and allowing it to vary according to particular needs.5 Inviting the mortar joint to vary at all invites interpretation, and any interpretation is risky; it cannot be precisely written or drawn in advance of construction. At Klippan, this risk was negotiated on an almost daily basis through conversations between Lewerentz and the site foreman, Carl Sjöholm. ‘Leverentz slowly made up his mind’,6 notes St John Wilson, by way of these conversations. Lewerentz and Sjöholm would often work ‘far into the evening, planning the next day’s work on endless alterations and on site revisions’.7 Frequent conversations between architect and builder permitted the risk of alterations and revisions during construction; on-site adjustments could respond to unanticipated circumstances and slowly developing ideas. The predictions of the drawings were overruled by conversation.

The dimensions of the mortar joints at Klippan are permitted to achieve extreme limits, structurally and visually. This construction speaks of far more than the consistent binding of bricks: these mortar joints could not be constructed with standardised repetition, inattention or thoughtlessness. Every joint, as a primary material, required careful attention and skill from the bricklayer. These unexpected, extreme mortar joints demand physical and emotional reactions; it is impossible to remain neutral when encountering the quality of extremes at Klippan (Figure 8.3).

Specialisation and separation

Such extremities are becoming rare in current architectural practice, which is increasingly averse to the engagement and risk practised at Klippan. Direct conversations between architect and builder, prior to or during construction, are discouraged in lieu of communication methods that purport to be precise and certain: the detailed construction drawing and the written specification. Reliance upon such communications is relatively new, emerging from developments that began at the end of the nineteenth century, as Mohsen Mostafavi and David Leatherbarrow write:

Architecture made out of a greater number of mass produced parts also changed the relationship between the architect and the builder by largely reducing the role of the latter’s knowledge of traditional ways of building and relying upon construction procedures almost entirely prescribed by the architect. Independent of the architect’s instructions for assembly, construction could not proceed.8

Integration of new, varied and complex construction methods exceeded traditional limits of construction knowledge in what Mostafavi and Leatherbarrow describe as an inversion of traditional architect/builder roles: no longer could the ‘gentlemen architects’ rely upon the knowledge of the builder.9 Historically, the architect, preparing instructions for construction, could draw from the builder’s accumulated knowledge and tacit skills; in a context of mutual trust and shared understandings, instructions to the builder could be limited. New, diverse and complex materials and
construction methods significantly revised these expectations, even as the professionalised conversion of the architect from the on-site 'master builder' to the office-bound intellectual cemented growing divisions between architect and builder. Specialisation became prevalent, and with it, a separation of knowledge. Instructions to the builder were now, increasingly, comprehensively detailed, subdivided within specialised roles, controlled by the architect. The architect in this new, inverted relationship would instruct; the builder would comply.

Subdivision of knowledge within professions is a common result, observes Donald Schon in The Reflective Practitioner, of the specialisation of professionals. 'Many practitioners,' he suggests, are 'locked into a view of themselves as technical experts.' Professional roles are rigorously protected. Schon suggests, by preserving the appearance of knowledge. Uncertainty, he thus concludes, is seen as a threat: 'Its admission is a sign of weakness.' Specialised professionals, in preserving control over specialised areas of knowledge, cannot admit uncertainty; to do so may undermine the appearance of knowledge and challenge authority and control. While specialisation and separation inevitably create gaps in knowledge, all attempts to bridge these gaps, to ask for advice, to engage in conversation in order to share knowledge are potentially to admit uncertainty and relinquish control. With conversation no longer viewed as a viable means of communication, it is to the certainty of the precise instruction that practitioners are now advised to turn.

'The objective is certainty': specifying quality

Architects today are thus urged, or required, by regulatory bodies, professional affiliations and practice manuals to assure quality control through the implementation of increasingly precise instructions. In the Architects Journal, Francis Hall states:

The one certain opportunity available to an architect to set down a definitive and enforceable expression of standard and quality is by way of a properly drafted specification. If this is done, there is understanding and certainty all round. If it is not, there is often disagreement and disappointment.

Hall is unequivocally clear on this matter: understanding and certainty emerge from the properly written specification. Quality, in his viewpoint, cannot emerge from the unpredictability and imprecision of conversation; all details of assembly must be comprehensively predicted and clearly communicated to the builder in advance of construction. There is to be no exception. 'The objective,' emphasises Hall, 'is certainty.'

The specification writer is thus bound to the onerous task of communicating, with certainty, every architectural intention to the builder. Jack Bowyer, in Practical Specification Writing, confirms this decisive role: the specification writer, he asserts, must be able to 'express the architect's requirements in clear, technical and precise written form, free from any ambiguity.' This presents a daunting task for the specification writer; every nuance of architectural intention must be shared between architect and specification writer, and interpreted and translated into a precise language, in order that the builder may 'correctly' receive and implement precise instructions into built form. The task is daunting, but assistance is at hand. The British Standards Institution (BSI) has, since the early twentieth century, responded to the growing complexity of construction materials and methods with a comprehensive and continuously updating framework of generic and specific categories of technical language. The specification writer is invited to turn to the language of BSI in order to outline and confirm virtually any aspect of the physical construction process, including that of the specification of a mortar joint.

The specification of a mortar joint

British Standard 5628 Part 3 states that, 'the joint is the medium where the variables due to both induced and inherent deviations can be absorbed.' Elsewhere, BSI prescribes that masonry should be set out with 'nominal 10mm joints, unless otherwise specified.' The masonry joint, thus prescribed, must remain dimensionally consistent - a nominal 10mm - while accommodating a wide range of predictable, unpredictable, man-made and material deviations. There is little room for error. The specification writer could be forgiven for viewing the mortar joint with some trepidation and suspicion. The mortar joint is, after all, the least certain moment in a masonry wall, as Eric Vastert warns in Architectural Science Review: 'The weak spots in the performance of buildings are not so much the building materials, but rather the connections between them. Dimensional variations of products become particularly clear in the joints.'

The brick, as a prefabricated unit subject to factory-controlled tolerances and verifications, can be considered acceptably predictable and certain. The certainty of the mortar joint, however, remains in the hands of the bricklayer; in accumulated, tacit and personal knowledge; in skill, and care, on site. As a generic, prefabricated unit, the brick may be tolerably predicted; as an individual in situ construction, the mortar joint remains vulnerable. Lack of skill or care threatens to invalidate the precision of the detailed drawing or written specification. In an ideology of certainty, the mortar joint is viewed as potentially deviant and disruptive; the only guarantee of quality may lie in the validation of the mortar joint, in a final agreement between architect, specification writer and builder that the mortar joint, as constructed, meets precisely specified standards.

If the quality of the construction of the mortar joint is placed at risk through personal interpretation, the validation of the mortar joint is equally at risk. Final acceptance may rely upon the architect's opinion. Yet any process that accepts personal judgement is uncertain; if certainty is to be the objective, this cannot be accepted. 'Although,' asserts Francis Hall, 'the architect's satisfaction may be a treasured thing, the question is whether it is a commodity which the contractor can reasonably cater for in his pricing and execution.'

BSI thus advises that 'design outputs should be documented in terms that can be verified and validated against design input requirements.' This presents another onerous task for the writer of the specification of a mortar joint.
who must now predict with certainty the quantification of visual quality. BSI initially offers little support, providing a disclaimer that its specifications are 'intended to provide satisfactory structural performance [...] they should not be regarded as defining acceptability of appearance'.22 If the specification writer must reject 'the architect's satisfaction', a more precise and predictable method of quantifying visual quality is required. BSI finally proposes, as a solution, the provision of an approved test panel of masonry, to be viewed next to a completed section of wall at a distance of three metres, at which distance the two panels should not differ 'significantly'.23 Even this detailed provision is fraught with uncertainty and imprecision, leaving the term 'significantly' open to personal interpretation; the 'architect's satisfaction' may yet determine the outcome.

The 'architect's satisfaction' is unpredictable; certainty, however, is the objective.

The precise quantification of visual quality

In Architectural Science Review, Eric Vastert is specifically concerned with this dilemma, contending:

The problem particularly figures in connections and joints between elements where dimensional deviations have become so visible and so large that they no longer are acceptable. But when exactly is that the case? Do we draw the line at 1, 2 or 5 millimetres? Indicating the proper visual tolerance is extremely difficult for a completely visualized and dimensionised design. The quantification of the required visual performance seems well nigh impossible.24

'... the architect's satisfaction' threatens the ideology of certainty, relying as it does on personal judgment. Even descriptions of dissatisfaction with the quality of a masonry wall are difficult to precisely quantify. 'Façades are often felt to be ugly',25 observes Vastert. Here, the validation of the visual quality reverts to emotional and personal judgement, and this, in the viewpoint of quality control, cannot be tolerated. As an alternative to the imprecision and unpredictability of emotional personal judgement, Vastert proposes a mathematical formula: A = M x C x V. The 'maximum permissible dimensional deviation A' is equal to the multiplication of a 'measurement factor M', a 'contrast factor C' and a joint breadht V'. This formula, along with the recommended use of 'reference patterns' and 'reference façades', offers to quantify the acceptability of accumulative deviations that may occur throughout a façade; 'unwelcome surprises due to the undesirable distribution of dimensional deviations', concludes Vastert, 'can be prevented' if formulaic precautions are taken.26

The quantification of the visual quality of a masonry wall is here taken to extreme measures, but such formulaic precision appears inevitable if the language of quality control is extended to its logical conclusion. In rejecting individual interpretation, quality control rejects the uncertainties of individual skill or care. To assure certainty in all circumstances, a lowest common denominator must be assumed; the goal must be set sufficiently low. Quality, thus viewed by BSI, is categorically not a degree of excellence, but is defined merely as 'fitness of purpose'.27 Yet, even at the scale of the specification, construction and validation of a single mortar joint, can 'fitness of purpose' ever be considered good enough? Quality assurance, Timothy Oster points out in the Architects Journal, 'will not make a bad architect a good one, but will just make him more consistent in producing bad architecture',28 assuming the lowest common denominator may reliably predict consistency, but it does not invite or celebrate practices that contribute to the pursuit of quality as excellence: passion, care and engagement.

More than 'good enough': an ideological stance

'It matters not what the thing is', wrote John Ruskin, 'as that the builder should really love it, and enjoy it, and say so plainly'.29 Quality control inverses this stance: it matters not at all what the builder thinks; all that matters is what the thing is, and whether the thing is predictable, certain and quantifiable. This has significant practical implications; George Atkinson, in Guide Through Construction Quality Standards, reports that 'lack of care was found to be a more important cause of faults on sites than lack of skill'.30 But it is in the expectation of quality where the implications are most evident. A framework that assumes lowest common denominators cannot expect any more of its practitioners than 'good enough'; a framework that rejects conversation and engagement does not invite care to occur in practice. Rather, it anticipates scepticism, mistrust and low expectations. It is difficult to ask for more than mediocrity in such circumstances.

At Klippan, the quality of the mortar joints could not have been precisely predicted in written or drawn form; equally, they could not have been validated though generic quantification. The mortar joints achieve quality by accepting and celebrating risk and engagement throughout construction. Despite this, control is obsessively maintained at Klippan, within Lewerentz's three rules — that brick would be used throughout, that no special shapes would be used, and that no brick would be cut — rules that permitted adaptation without loss of control. These rules did not, in themselves, assure quality. They proposed an ideological argument, a working method that developed and established itself through 'endless alterations and on site revisions'.31 Conversations between architect and builder on site were permitted to overrule predictions made by the drawings, raising the quality of the mortar joints at Klippan beyond predictably consistent construction. Conversations between architect and builder permitted the presence, knowledge and skill of the bricklayer to be intimately expressed within each mortar joint.

'What we have to admire', continued Ruskin, 'is the grand power and heart of the man in the thing, not his technical or empirical way of holding the trowel or laying the mortar'.32 While the legalities, economies, regulations and complexities of current architectural practice and construction procedures rarely permit the engagement and risk witnessed at Klippan, it is notable that, in a drive to promise quality control through certainty, it is a quality of mediocrity that has become acceptable, through a process that arguably engenders further separation, scepticism and lack of care. In the drive to pacify the growing complexities of
contemporary architectural practice, it is the simplest of human relationships that are being erased; without conversation and care, mediocrity is all that can be reasonably expected. The extraordinary quality evident in the mortar joints at Klippan speaks of a different quality control process altogether; control that begins with the certainty of passion, and risk (Figure 8.4).

Notes
3. Edman, p. 78.
7. St John Wilson, p. 22.
10. For a discussion of the emergence of the professional architect in the early nineteenth century in the UK, see Mark Cusen and Jules Lubook, Architecture: Art or Profession? Three Hundred Years of Architectural Education in Britain, Manchester and New York: Manchester University Press, 1994.
24. Vastert, p. 100.
31. St John Wilson, p. 22.
32. Ruskin, p. 21.