FABRICATORS

Let's try this statement on for size (or scale): all architects are fabricators.

In both senses of the term. In the sense of those who make things *and* make up things. As in the legal definition: 'to make up with the intent to deceive'. As in the fact that all architects make real the imaginary, make up imaginary worlds in order that they can be constructed, that they fabricate reality … with the intent to what? To deceive or to conceive? That we as architects rather than receive reality as is, de-conceive one reality and conceive of another, in the manner and matter of fabrication?

The definitions of fabrication range between all these states: 1. To make by art or skill and labour, construct; 2. To make by assembling parts or sections; 3. To devise or invent (a legend, lie, etc.); 4. To fake or forge. But doesn't this define the very act of architecture as well: a skilled assembly of parts and sections, with the intent to devise and invent, to forge anew, a new (as of yet) still fictive reality in advance of it being constructed into the world? Reality is indeed parametrically mutable: by adjusting the parameters of parts or sections of reality we can fabricate anew[1]. This is the ineluctable oscillating play – between the parameters of the received reality (the documentary mode) and the parametric fabrication of a re-conceived reality (the fictional mode) – that is architecture.

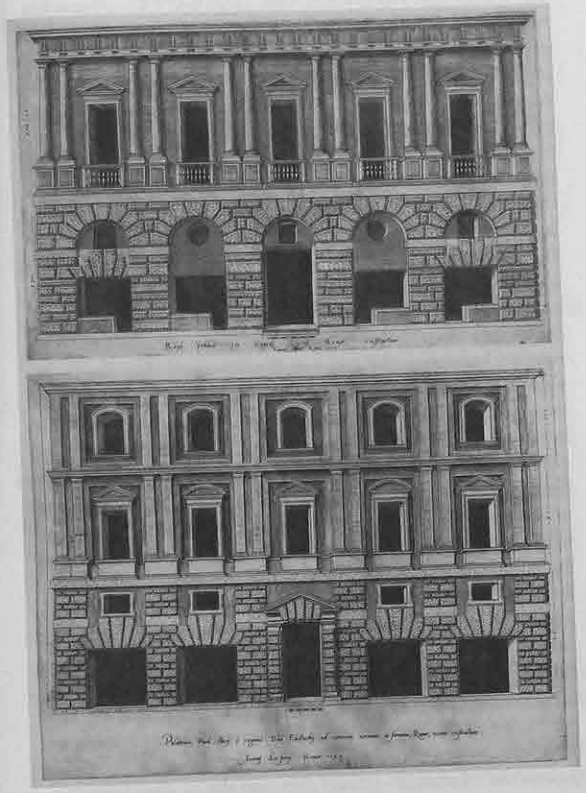
Now this goes against the received story we often like to tell ourselves: that we architects are engaged in the real manner and matter of real construction, except of course in periods when architects play with matter and manner as in Mannerism. Something someone like Giulio Romano does when, with a nod and a wink, he fabricates, in both senses of the term, a triglyph as if it were slipping down

from its 'crucial' position in the entablature of his 1534 Palazzo Te courtyard. Even if, or especially because, a triglyph is just a faked beam end, a fabrication of the legendary wooden origin-myth of classical architecture. Or as in Luigi Moretti's 'fake' rustication of his 1947–50 Casa Il Girasole. But what makes Moretti's rustication fake? Given that it is real stone, developed parametrically along the diverse range of material and cultural parameters of its identity – as picturesque landscape elements, rusticated blocks, fluted surface, classic figural statuary, modernist thin cladding – a transformative performance not only of the historical biography of stone in architecture, but also of Moretti's own autobiography as an architect.

At Casa Il Girasole, Moretti reveals stone in its then real factual constructive condition as a form of veneer, in contrast to the deceiving stucco-over-brick 'rustication' Bramante devised 450 years earlier for the *piano rustico* of his 1501 Palazzo Caprini. Contrary to certain received notions of architectural authenticity, this fabrication was already a performative material mode in the High Renaissance, given that the architects of the Cinquecento were imitating the rustication of the ancients, putting on a fictive front – frontin', as it may be said on the street today, fake playing. This stuccoed fabrication of 'rustication' (and other attributes of classical antiquity) reduced, as Christoph Frommel notes, 'the costs of construction considerably and made the possibilities of a direct imitation of the ancients very inviting for patrons of reduced financial means. Without this economical technique, Bramante's direct successors – not just Raphael, Peruzzi and Giulio Romano, but also Jacopo Sansovino, Sanmicheli and Palladio – would never have been able to achieve some of their most important works.'[2] Thus it can be said that the very production of the Renaissance in fact depended on this wholesale full-scale fabrication.

Speaking of Palladio: standing in front of his 1565 Palazzo Valmarana in Vicenza, Guido Beltramini, Director of the Palladio Centre, said to me that this was his favourite, because it 'has all this nervous energy', and

Luigi Moretti, Casa Il Girasole, Rome, Italy 1949-53 (Photograph by Author)



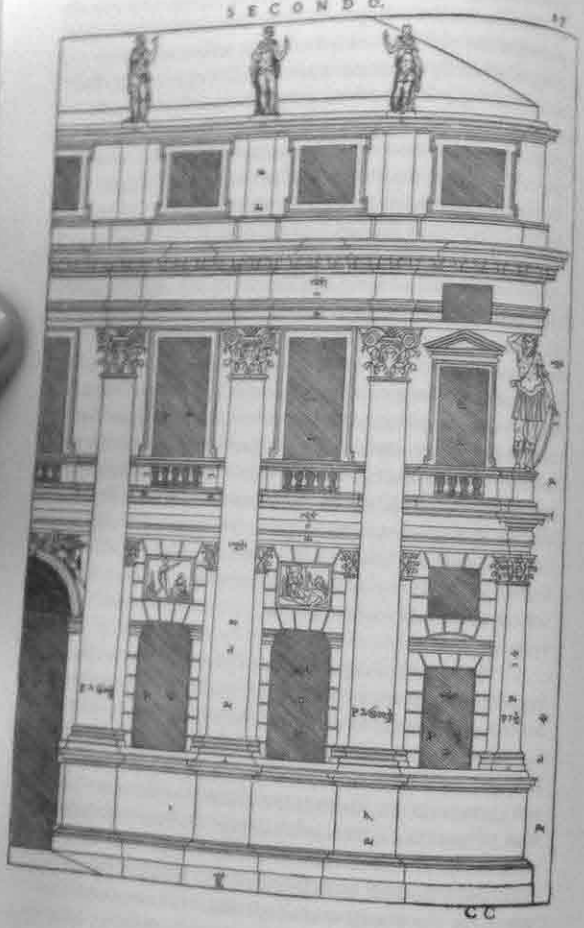
Antonio Lafrery, Palazzo Caprini and Palazzo Stati Maccarani, 1549

directing my attention to the mezzanine window cut out in the middle of the top entablature, said that here Palladio 'lets us know this joke'. Now jokes and fabrications are what we expect from Giulio Romano not Andrea Palladio, particularly as – to cite chapter and verse, chapter XX line 10 in Book I of his 1570 *Quattro Libri*, in the section entitled 'On Abuses' – Palladio rails against any fabrication of any building element that diminishes its primary purpose, which according to him is 'to appear to produce the effect for which they were put there, which is to make the structure … look secure and stable'.[3] The equivocal choice of words is telling – 'appear', 'effect', 'make the structure look' – but appearance, affect, fabricated structure are, as Renaissance historians tell us, some of the main modalities of the Cinquecento, which was a matter and manner of representation rather than reality. But then again this is no more or less fabricated than the applied 'columns' of Roman antiquity, applied as they were all over amphitheatres and temples and triumphal arches, or the applied bronze-bling columns on the facade of Mies's Seagram Building. So these forms of double fabrications go way back. And in fact at Palazzo Valmarana, Palladio abuses the standard forms of security and stability in three radical ways. First, by the aforementioned window cut right out of the primary horizontal structure that is the entablature. Second, by pushing the giant composite order into the building facade so much that it cuts into *and* through the lower implied entablature to such an extant that the cut is revealed by the top edge of this cornice sticking out past the pilaster, brutally destroying any sense of the horizontal distribution of load at that level. And third, there is the really shocking 'oh no he didn't' moment: the removal of the giant order from the ends of the facade – at exactly the points that classically would demand the most support, security and stability – so that the edges of the building are left to lone caryatids perched on single-storey secondary pilasters to hold up the visual load now weakened even more than by Giulio Romano's slipped triglyph.

This nervous built fabric of a facade relates to the degree of creative nervousness Palladio most likely felt

in his imaginary 'reconstruction' of antiquity, particularly in the illustrations he provided for Daniele Barbaro's 1556 publication of Vitruvius, wherein he makes up, fakes, forges, invents, fabricates parts of buildings (such as the use of the giant order for a private house) that have no reference or justification in Vitruvius, but which he will then use in his own work to reconceive the very form of the villa and the palazzo. And in the case of Palazzo Valmarana he reinvents his own received transmission of contemporary Roman palazzo design. He transfers and transforms the Bramante Palazzo Caprini model – of the rusticated ground level and the use of orders in the *piano nobile* that he adhered to in his earlier 1552 Palazzo Porto – from the social fabric of Rome to that of Vicenza, by expanding the orders across levels, representing (with some still nervous leftover Porto traces of rustication and those single-storey *piano nobile* secondary columns) that the nobles there occupied both the ground level and the *piano nobile*. All those tectonic elements – columns, entablatures, rustication – which even in Bramante's palazzo were faked depth, Palladio now develops as multiple superimposed layers collapsed into a radical surface relief yet still maintains the legibility and interaction of the separate layers – which certainly has made many an architect and historian nervous since.

This kind of superimposed pictorial and tectonic layering had already been suggested on the exteriors and interiors of Giulio Romano's Palazzo Te, and by now it has been demonstrated that Palladio took a lot from Giulio Romano, a lot more than had generally been assumed, and not just credit for the Palazzo Thiene commission (which was in fact Giulio Romano's design and for which Palladio was the local on-site assistant). In his 1546 Basilica, Palladio was also inspired, as Beltramini and Howard Burns have noted, by the elastic and adaptable serliana system that Giulio Romano developed in a radically iterative and responsive manner in the renovations at San Benedetto Po of 1540. The serliana – that motif so associated with Palladio that it is mistakenly labelled the Palladian Window



Andrea Palladio, elevation of Palazzo Valmarana, *I Quattro libri dell'architettura* (Venice: Domenico de' Franceschi, 1570), Book II, Ch. III, p. 17

Andrea Palladio, Palazzo Valmarana, Vicenza, Italy 1565 (Photograph by Author)

(originated in fact by Bramante, promoted subsequently by Serlio) – is all too often described as an arch with flanking rectangular openings. In fact it should really be understood as a mutant figure, a hybridising of the two structural forms to the point of endangering the actual structural stability of both – the arch interrupting the top chord of the trabeated rectangular frame, the rectangular frame removing the arch sides – were it not for the crucial column supports that arrive at this precarious moment of interface to save both from mutual collapse. Which in Andrea Palladio's use in the Basilica creates the effect of an extraordinary if repetetive diaphanous screen, syncopating major and minor order, with its notable compression at the corners.

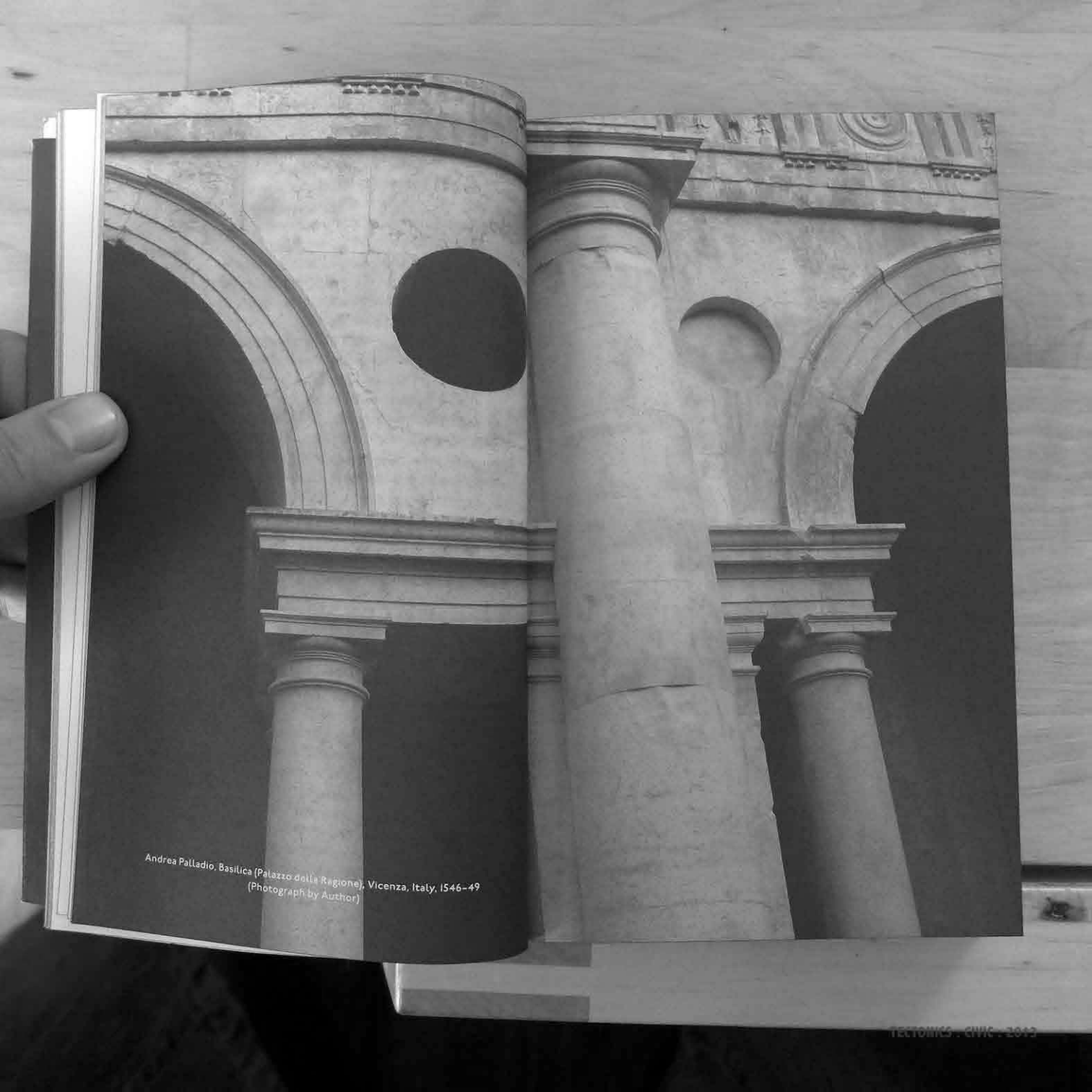
What Giulio Romano developed (in the 1520s and 1530s at Palazzo Te and in 1540 at San Benedetto Po), and what Palladio borrowed from him in part, is not the repetitive serial use of certain motifs, but what has been claimed as the very definition of parametric design: iterative systems that are able to adapt and respond in a motivated manner to internal and external forces. Parametric systems have been a main wave of exploration, in name or approach, for the past two decades, although it turns out that in 1950 Luigi Moretti referred to the design use of parameters right from his editorial send-off in the first issue of his journal *Spazio*, and by 1952 was calling for an *'architettura parametrica'*, even before he was pioneering the use of computers in his 1960–65 design for the Watergate complex. As for Giulio Romano, Burns has noted his extensive use of responsive hybrid systems: 'Further combinations of arched and trabeated solutions, like the serliana, always elastic, expressive and adaptable to irregular or pre-existing facades, are ever present in his work',[4] which is particularly evident in his radically iterative play on Bramante's Belvedere through compression and expansion in the lateral façade at San Benedetto Po.

Having now measured and digitally modelled and animated Giulio Romano's Palazzo Stati Maccarani (known to many solely as the site of the best coffee in Rome,

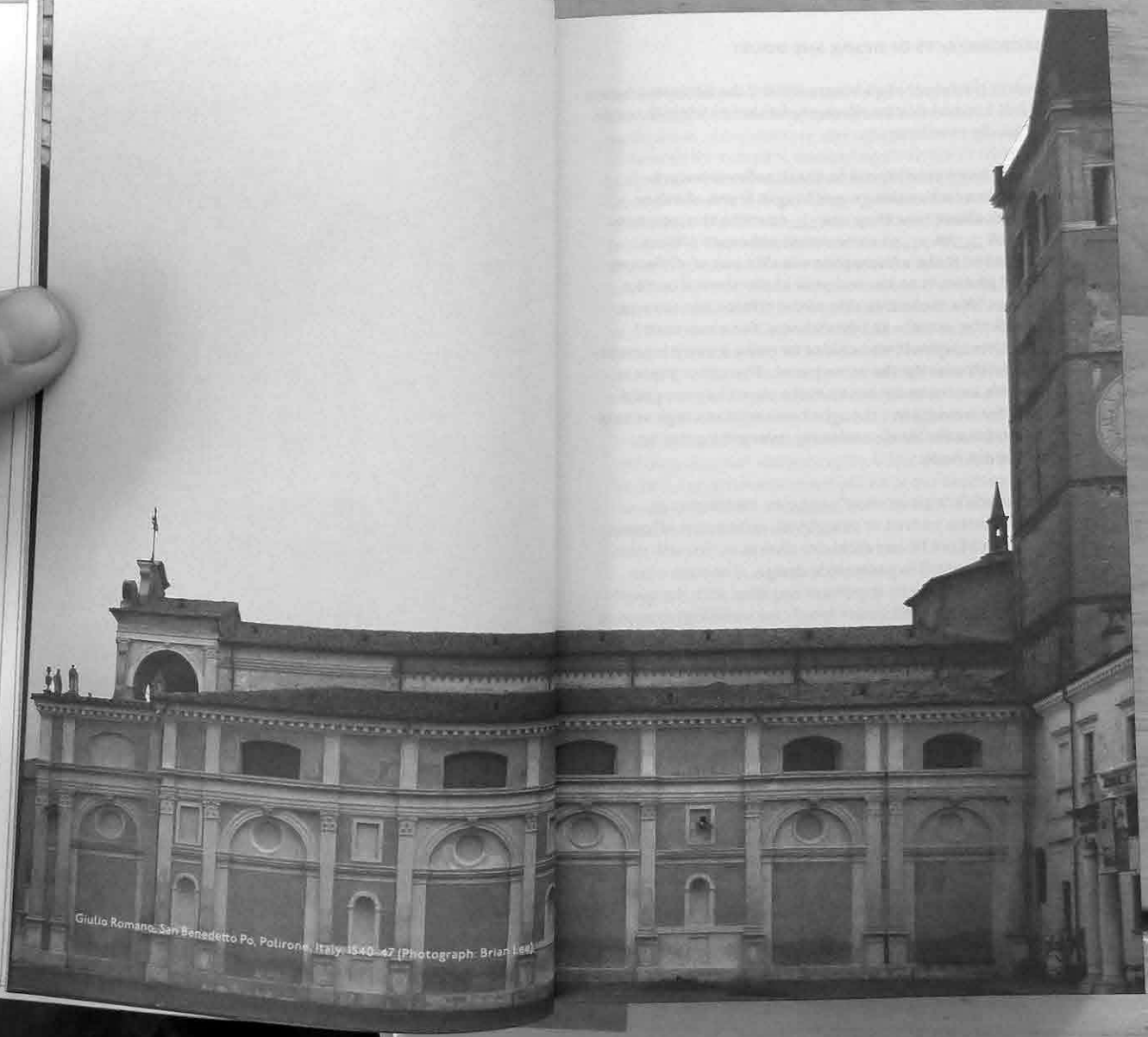
Sant'Eustachio Il Caffè), I can say that it turns out that Giulio Romano was operating parametrically even in the early 1520s. In this palazzo he developed a series of tectonic elements in the *piano rustico*, *piano nobile* and attic storeys, which transform along a set of parameters horizontally in each of the three exposed facades and vertically up through the building levels. The latter transformation begins to radically shift and mutate the strict class division of *rustico* retail and *nobile* residential of Bramante's Palazzo Caprini, remixing the mixed-use palazzo in ways that resonate with the rise of the merchant and middle class in this period, as already indicated by Frommel's assessment of the shift in patronage at this time.

These themes of parametric and performative mutability are evident throughout Giulio Romano's work, from the buildings to the decorative arts to the tapestries to the frescos to the drawings. In the same period as his design of Palazzo Stati Maccarani, Giulio Romano is preparing his infamous etchings for *I modi* (*The Positions*), a collection of representations of erotic couplings paired with smutty sonnets from leading author and cultural figure Pietro Aretino, which as Bette Talvacchia has noted was scandalous not for its smuttiness but for its expression of the mutual desire of both sexes in the exchange.[5] Indeed, what are Kama Sutra-like manuals – move her leg now here, move his arm now there – but a form of relational parametric positionings? Yet in Giulio Romano's case these iterations of relational and interactive body components or building components are not merely a formal parametrics, but a parametrics of identity. A social parametrics, addressing and enacting the social and psychological transformation of class and gender relations in his time.

Lest anyone think I'm trying to fabricate a justification from the past, rather than a provocation for the future, I would concur with Manfredo Tafuri that the past is only useful when used not to settle but rather to unsettle the present and future – just as the possibility of new parametric and performative techniques of analysis and fabrication should unsettle our understanding of the past. So let's get



Andrea Palladio, Basilica (Palazzo della Ragione), Vicenza, Italy, 1546–49
(Photograph by Author)



Giulio Romano, San Benedetto Po, Polirone, Italy, 1540–47 (Photograph: Brian Lee)

back to the future of architecture then, the fabricated future of full-scale fabrication. Recently Eduardo McIntosh wrote, incisively, to tell me:

They have been sending me to these software workshops, where companies go and brag in front of other companies about how they use ___ to make the new hotness. From ___ to ___ to some small unknown offices, the project is: make a homogeneous skin out of different panels. If you want to be cool your claim should be like ___'s team: 'We made this skin with 1 trillion panels and no panel is the same' – so I don't know, for a moment I thought that maybe it was cooler to make a more interesting form with exactly the same panel. The other topic is curves: 'We evaluate curves to make sure they are good curves' – for a moment I thought I was with my high school buddies in Ecuador. And continuity, everything has to be continuous here.

As Eduardo's 'for a moment' suggests: continuous or discontinuous, curved or straight, all different *or* all same, these should not be our exclusive choices in this still new century. In regard to parametric design, if anyone were asked to explain some important situation with the question 'what are the parameters here?', the meaningful answer would never be a trillion gradient responses, but a very limited set of relational and consequential actions (and reactions and interactions). As any other performative medium teaches us, some of these actions and reactions and interactions would logically sequence the events in question and some would cause a surprising turn of events. What parametric fabrication promises today is the ability not just to indiscriminately slide the software slider bar or CNC mill or waterjet contour cutter back and forth in an infinite gradient, but instead to track certain sets of parameters. Exploring the parameters of social and cultural identity through the exploration of formal identities. And if we take the word fabrication even further back to its root as 'fabric', it is still amazing to realise that all the

definitions, beyond the first ones regarding cloth, have everything to do with the conceptual and material and social sense of architecture and urbanism, everything to do with the complex, underlying structure of what we make and what we make up: 1. Framework, structure: the fabric of society; 2. A building, edifice; 3. The method of construction; 4. The act of constructing, esp. of a church building; 5. The maintenance of such a building. Even the petrography definition refers to the *'spatial arrangement* and *orientation* of the *constituents'* of a rock, a definition that if understood in the material and political meaning of constituents could parametrically refer as well to the fabrication of the city, to a skilful and responsively adaptive assembly of parts and sections, with the intent to devise and invent, to forge a new urban fabric.

So let's imagine new spatial arrangements and orientations of our tectonic and cultural constituents, investigating and instigating the fabrication of those underlying structural assumptions of our seemingly 'secure and stable' social and built fabric. Let's fabricate social relations – at every scale.

NOTES

Forthcoming in Phillip Anzalone and Bridget Borders (eds.), *Full-Scale* (New York: Columbia University Graduate School of Architecture, Planning and Preservation).

1. For a discussion of the fabricated assembly of ideology and culture as 'Bits & Pieces Put Together to Present a Semblance of a Whole', and its manifestation in and through social space, see the Foreword in this volume and Mark Rakatansky, 'A/Partments', *Assemblage* 35 (1998), 48–61.
2. Christoph Luitpold Frommel, 'Living *all'antica*: Palaces and Villas from Brunelleschi to Bramante', in Henry A. Millon, ed., *Italian Renaissance Architecture: from Brunelleschi to Michelangelo* (London: Thames and Hudson, 1976), 195.
3. Andrea Palladio, *The Four Books on Architecture*, trans. Robert Tavernor and Robert Schofield, (Cambridge MA: MIT Press, 1997), 56.
4. Howard Burns, '*"Quelle cose antique e moderne belle de Roma"*: Giulio Romano, The Theatre and the Antique', in *Giulio Romano*, ed. Manfredo Tafuri (Cambridge: Cambridge University Press, 1998), 141.
5. Bette Talvacchia, *Taking Positions: On the Erotic in Renaissance Culture* (Princeton: Princeton University Press, 1999).