



1 Xinzhai Coffee House, model exhibited at the 2018 Venice Architectural Biennale.

A project that illustrates tensions between ideas of ‘authenticity’ and ‘cladding’, considered here in relation to Gottfried Semper and Adolf Loos’s theories.

Site, programme, and tectonic expression: Hua Li’s Xinzhai Coffee House

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In contemporary Chinese architectural culture, Hua Li’s work stands out as a phenomenon. His architecture demonstrates little in the way of formalistic eccentricities, cultural symbolism, or indeed the ‘Chineseness’ that some others seek to pursue. Instead, what interests the architect is, most of all, the quality of material, construction, space, and place [1].

As indicated by Hua’s recent lectures, his concept of place remains connected to the larger site of a building project, its topography, climate, local materials, and craftsmanship. As such it is similar to, though also different from, the concept of place proposed by Christian Norberg-Schulz – the Norwegian architectural historian and theorist known for his theory of place influenced by philosopher Martin Heidegger, which was developed through various texts including: *Intentions in Architecture* (1963); *Existence, Space and Architecture* (1971); and *Genius Loci: Towards a Phenomenology of Architecture* (1979). The similarities consist in Hua Li and Norberg-Schulz’s imagination of place as meaningful and transcending merely the physical aspects of a site. Place, here, is a local condition, an atmosphere or a ‘spirit’ that is to be gathered, revealed, and visualised by the work of architecture. Hua also differs from Norberg-Schulz, in the sense that, unlike the use (or misuse) of Heidegger’s philosophy evident in Norberg-Schulz’s theoretical articulation of architectural phenomenology – concerning qualities of meaning, atmosphere, poetry, and the senses – his concept of place is fraught with fascination at the potential of a place. Instead of the ‘existential meaning’ of architecture, Hua’s interest in place calls for new possibilities of intervening and reconstruction through architectural operations.

Architectural operations

Where Norberg-Schulz wards off non-figurative abstraction – an attribute that he identifies as placelessness, and associates with non-phenomenological aspects of architecture – Hua Li finds Walter de Maria’s artwork *Mile Long Drawing* intriguing [2]. In Hua’s eyes, the lines that de Maria

drew in the vast landscape make possible our bodily sensibility thanks to its strong perspective indicating direction and depth. In the same vein, Hua believes that the nature of architecture turns on the bodily perception of a place through interventions in it, whether sensitive or violent, pertaining to a given site condition. For Hua, it is through intervention that new levels of meaning, and spirituality for that matter, come into being. In Anthony Gormley’s *Re-arranged Desert* [3], what is amazing for Hua is that – although the body is absent – the rocks scattered on the desert surface



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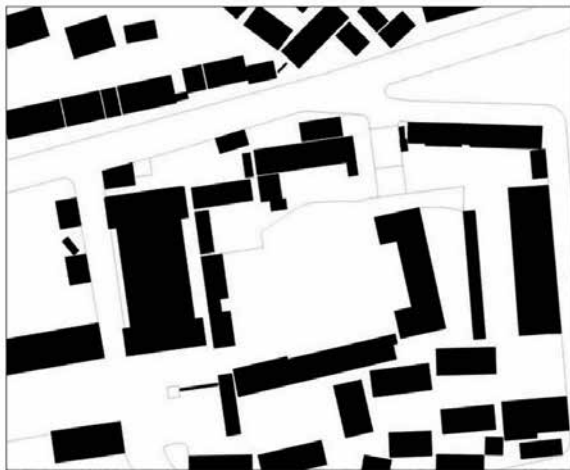
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2 Walter de Maria, *Mile Long Drawing*, 1968.

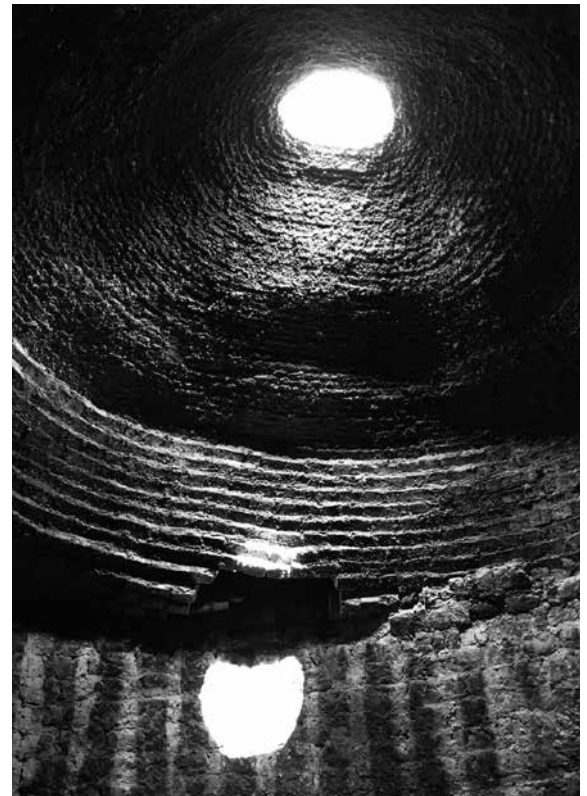
3 Anthony Gormley, *Re-arranged Desert*, 1979.



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serve to recall the artist's act of rock-throwing, which Hua Li refers to as the 'deferred impact of the body on the site'. To translate this into architectural terms, Hua suggests that the role of the architect is like that of the artist, and what he or she does through design is a sort of 'rock-throwing', which in one way or another, transforms the condition of a building site. That is not to mention Hua Li's sensitivity for *The Garden of Solitary Enjoyment* by Qiu Ying [4], a sixteenth-century Chinese painter, where the relationship between man and the natural environment, and thereby meaning and spirituality, is formed in a light, soft, permeable, and easy way.¹

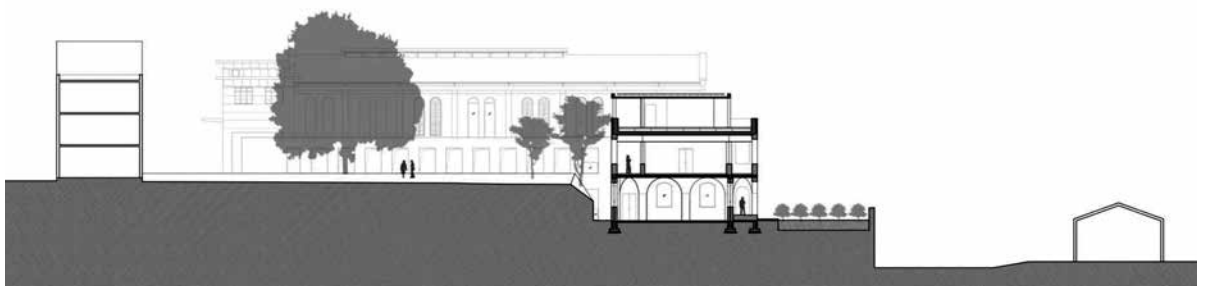
This essay hinges on the issue of tectonic expression through the case of Xinzhai Coffee House [1] – a recent work by Hua Li commissioned by Xinzhai Coffee Farm in Yunnan Province in southwest China – I will, however, refrain from a more extended discussion of the concept of place. What interests me is the interaction between site,

4 Qiu Ying, *The Garden of Solitary Enjoyment*, 1515–52.

5 Xinzhai Coffee House, pre-existing site plan.

6 Abandoned brick kiln near the site.

7 Xinzhai Coffee House, cross section.



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8 Xinzhai Coffee House, courtyard seen towards west.

9 Xinzhai Coffee House.

programme, and tectonic expression that an examination of Xinzhai Coffee House will illuminate. My point is that the tectonic implication of this cogent work cannot be fully understood without appreciating issues of site and programme. This evokes David Leatherbarrow's account of a similar trinity – consisting of site, enclosure, and materials – suggesting that 'attention to any one of these three would be inadequate because they are intertwined with one another in such a way that consideration of one affects and is affected by consideration of the other.'² Yet one has to begin somewhere, so let's start with the issue of site.

Site

Xinzhai Coffee House is located in China's Western Yunnan Province, bordering with Myanmar. This fact alone indicates local climatic conditions, sited in a mild subtropical climate with annual mean temperature around 15 °C. The winter is benign – dry and sunny with average lows in January well above freezing – while summer is warm, rainy, and overcast with August, the warmest month, averaging around 20 °C. Under such conditions, local buildings normally open embrace surroundings and the environment, merging inside with the outside. On the other hand, the region is known for volcanic activities and frequent earthquakes, and this in turn has led to a set of rather rigid seismic codes for building and construction.

The site of Xinzhai Coffee House [5] is situated on pastoral high ground overlooking expansive

vistas towards the north. To the south is a compound composed of a number of existing buildings including a dilapidated cinema along the western edge of the site. A vehicular way some ten metres below the site detours upwards through the main street of the village before bringing one into the compound, though a shortcut in form of steep walkway adjacent to the cinema. Within the compound, a number of substantial banyan trees dominate, forming focal points in an otherwise rather blank courtyard space.

The cinema is another strong presence in the compound. It was constructed in the 1980s with loadbearing brick walls and a steel truss roof. Like

many places in China, although the cinema might be perceived as an incarnation of local masonry traditions, what prevails now in terms of building technology is reinforced concrete frame with infill, which is then faced in cement rendering or bonded tiles. Nevertheless, a few hundred metres downhill, an abandoned brick kiln that Hua Li encountered during his first visit to the site stands as a signal of that memory, initiating an appetite for the resurrection of an old tradition [6]. In fact, I was told, it was during this visit that the idea of a masonry project came to Hua's mind.

In addition to the cinema to the west and a multi-storey building to the south and east, there were a



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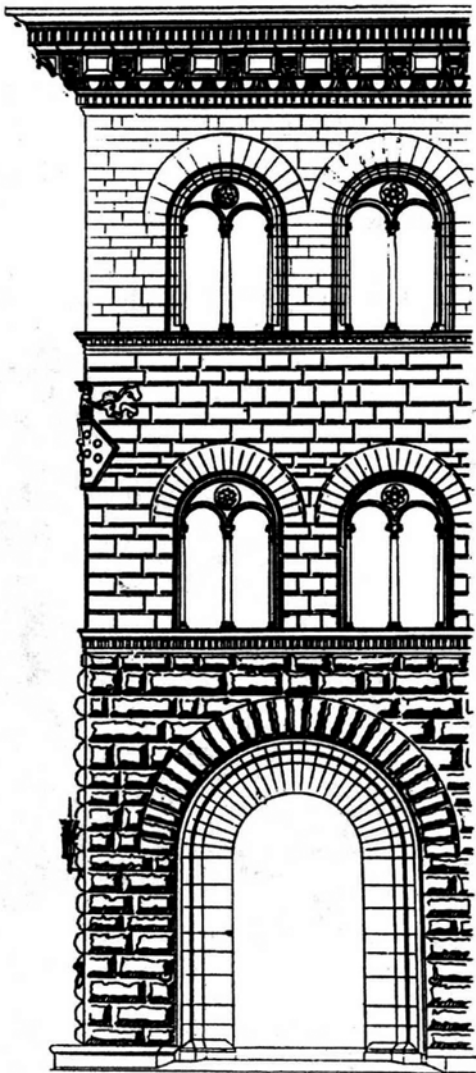
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10 Xinzhai Coffee House, lower floor.

11 Xinzhai Coffee House, second floor.



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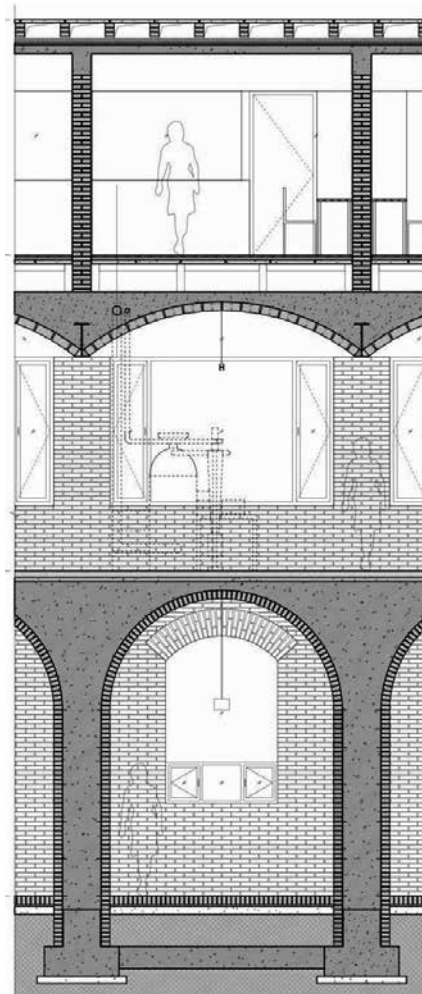


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12 Xinzhai Coffee House, third floor.

13 Palazzo Medici-Riccardi, façade, 1444–64.

14 Xinzhai Coffee House, section.



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15, 16 Beamless Hall,
Linggu Si,
Nanjing, 1381.

number of other existing buildings in the compound along its north edge. These buildings were to be replaced by new construction in the coffee house project. In this process, what has been removed was not merely the pre-existing buildings. As Hua's reference to Walter de Maria and Anthony Gormley would suggest, architecture is necessarily a site intervention and – as the primary move in this process – Hua's design transformed the terrain on which these buildings were previously located, evening out its topographic shapes and level differences. A major level difference is retained, though, between the courtyard ground and the lower platform where two new buildings are now standing [7]. Consequently, while the lower floor of the new construction appears subterranean as one is approaching from the courtyard [8], a dramatic

tension is created between the courtyard level and the new buildings, which, to the east part, takes the form of an interstitial space between the new construction and the revetment of the courtyard ground [9].

To elaborate on the interaction between site, programme, and tectonic expression at the Xinzhai Coffee House, I would like to focus on the three-storey building at the east end of the new construction, which is the main component of the new project, and the vertical and horizontal dimensions of its site relation. It is in the vertical dimension that programme and tectonic expression are implicated, whereas horizontally the dialogue between the building and the immediate, as well as remote, surroundings is established by structural and spatial means. Also, in this latter respect, the issue of fenestration can be discussed and a critique outlined in association with the north-south orientation of the building.

Programme and tectonic expression

Issues of programme and tectonic expression at the Xinzhai Coffee House should be considered together, because they are truly intertwined with one another in such a way that consideration of one affects and is affected by the consideration of the other. In fact, if both the subterranean aspects of the building and its dramatic tension with the revetment of the courtyard ground were derived from the site intervention, it is then in this subterranean embeddedness that issues of programme and tectonic expression coincide in Hua Li's design.

Here, the 'weighty' programme of a warehouse on the lower floor of the building was schematically conceived in order to reinforce the sense of embeddedness. Structurally, on the other hand, cross vaults were employed to create a more introspective, basement-like character in the space. In my view, the interpretation of programme in such an architectural way, directed towards the tectonic – rather than in purely functional terms – is one of the most remarkable features of Xinzhai Coffee House. This holds true despite the fact that this space has never fulfilled its functional use as warehouse since the completion of the building. 'Too fine to be a



17

17 Beamless Hall,
Kaiyuan Si, Suzhou,
1618.

warehouse', as the owner of the farm has put it, and his idea since is to transform this part of the building into a private coffee museum [10].

Compared to the lower floor, the programme and the structure of the first floor assume a different character. Programmatically, this is a coffee-processing showroom that ideally requires column-free space, whereas structurally it is made of a series of parallel lightweight long-span segmental vaults. Taken together, an open and much brighter space comes into being here. To underscore the sense of lightness, a special window frame was designed for the round-arched window along the north and south sides, where a semi-circular plate glass fanlight without frame is placed between a segmental vault above and a framed window element below. Equally important, H-shaped steel beams – rather than concrete beams – are deployed between the segmental vaults to demarcate the first floor further in relation to the lower one [11].

As opposed to the ground and first floors that seek to establish their presence out of masonry construction, however, the second floor is articulated in unfinished reinforced concrete frame construction. Between concrete walls at both ends the concrete frame is, like most buildings in the region, filled with bricks with cement rendering applied. Programmatically, this floor accommodates a number of lodging rooms accessed from a walkway to the south. Each lodging room has a terrace to the north overlooking the remote landscape. A shared living room is located next to the stairway with panoramic views both north and south [12].

Alongside this programmatic stacking, what is more remarkable is the architectural articulation of

the coffee house where massive, compressive forms diminish incrementally as the building rises upward and the cumulative load on the structure reduces. A progressive increase of loadbearing intervals can also be discerned in the south and north elevations. Read from bottom up, the techno-static diminishment, once expressed in terms of fenestration and surface materials in the Renaissance tradition [13] becomes substituted by more substantial shifts from one structural form to another. In this way, as Hua Li told me, Xinzhai Coffee House becomes 'a mini-history of building construction' [14].

As far as the masonry vault is concerned, precedents can be found in China too. Indeed, although Chinese architecture is known for timber frame construction throughout its history, evidence of masonry vaults has been traced back as early as to between the sixteenth and tenth centuries BCE.³ The Beamless Hall in Nanjing, for example, completed in the fourteenth century CE is a remarkable later example [15, 16]. Later still, Yongzuo Si in Taiyuan, Shangxi Province (1597), and the Kaiyuan Si (1618) in Suzhou, Jiangsu Province [17], offer two well-known instances in which 'the barrel vaulting runs lengthwise, with penetrations for doors and windows', whereas 'the exterior is treated with columns, architraves, tou-kung, and other elements'.⁴ In other words, different to the example in Nanjing, these 'beamless halls' of Yongzuo Si and Kaiyuan Si are characterised by their outer articulation mimicking the forms of timber frame structure.

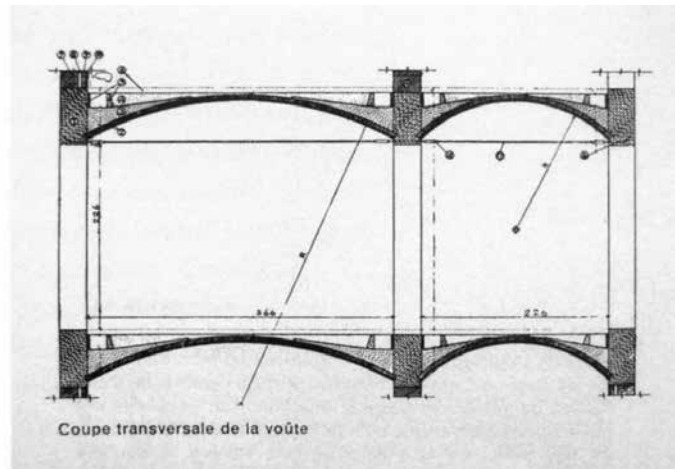
In this way, Yongzuo Si and Kaiyuan Si are not only precedents for the conundrum of the so-called Chinese Style haunting debates from the twentieth century up to the present – which essentially often mimics timber frame construction by means of reinforced concrete and, whenever necessary, steel – but also coincides with many of the examples architecture beyond China, from the Persian to the



18



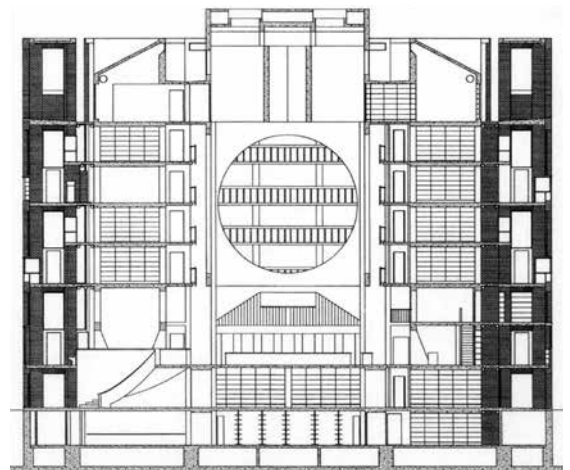
18 Xinzhai Coffee House, under construction.



19 Le Corbusier, Maison Jaoul, under construction and detail section.

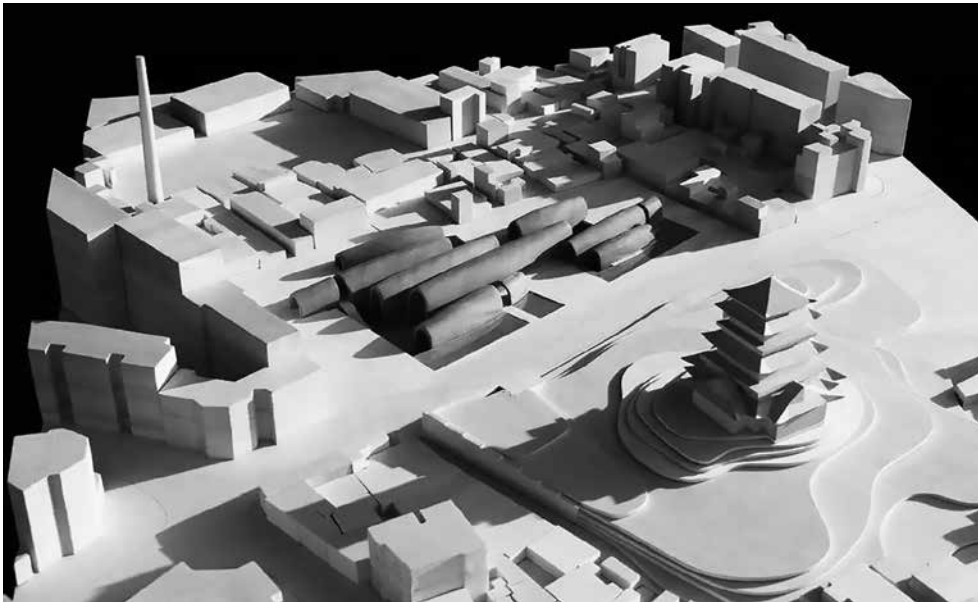
19

20 Louis Kahn, Phillips Exeter Academy Library, section.



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Greek, from Alberti to Post-modernism. It can be said that, from a 'tectonic' point of view, this is the distinction that Gottfried Semper articulated between what he called the *structural-technical* and the *structural-symbolic*, or in terms of his *Stoffwechseltheorie* meaning 'material metamorphosis in which the motif of art gradually translated from one material to another, while retaining their original significance'.³ It also relates to Semper's *Bekleidungstheorie*, according to which 'the primary motif of *Bekleidung* [facing] remained the same



21 Zhu Pei,
Jingdezhen Kiln
Museum, model.

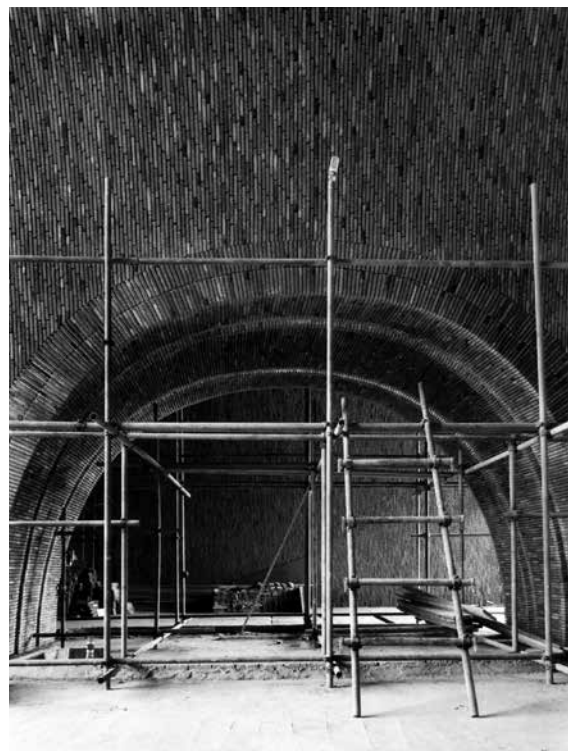
22 Zhu Pei,
Jingdezhen Kiln
Museum,
reinforced
concrete vault,
under
construction.

23 Zhu Pei,
Jingdezhen Kiln
Museum, interior,
under
construction.

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throughout [its] long development, but was modified through an imitative process of *Stoffwechsel*.⁶

Hua Li's architecture is superficially little concerned with Semper's *Stoffwechseltheorie*. In favour of the structural-technical rather than the structural-symbolic of construction, or more exactly, more concerned with structure-related construction than applied ornament, Hua takes a more architectonic approach to *Bekleidung*. To better appreciate this, I will refer to the concept of tectonics in the sense of Eduard Sekler's account:

when a structural concept has found its implementation through construction, the visual result will affect us through certain expressive qualities which clearly have something to do with the play of forces and corresponding arrangement of parts in the building,

*yet cannot be described in terms of construction and structure alone. For these qualities, which are expressive of a relation of form to force, the term tectonic should be reserved.*⁷

In short, as Sekler put it, 'structure, the intangible concept, is realised through construction and gives visual expression through tectonics'.⁸

Authentic masonry construction or *Bekleidung*?

At Xinzhai Coffee House, the substantial shift in structural forms is predicated on a combination of reinforced concrete frame and masonry, and occurs not only in the form of what is visible in the building's architectural appearance, but is also inherent to the loadbearing masonry of the ground floor and first floor. Pragmatically, this combination



24

derives from local and national seismic codes, which renders the masonry into a de facto *Bekleidung*. This last point is evident when one looks at the construction process of the building [18]. From the bottom-up, the steel bars of the Coffee House's reinforced concrete columns were located in place before anything else. Between the bunches of re-bar, centring cross vaults were then erected. When the cross vault was complete, re-bars for the floor slab were added before concrete was cast in situ. In the same process, the groins of the cross vaults, where the column bars for the reinforced concrete frame were installed, were also filled with concrete, which means a very robust construction indeed. As the construction went on, only perimeter concrete columns continue to the upper floors, providing support for the segmented vaults of the first floor, and forming the concrete frame of the second floor. The construction of the segmented vaults then largely repeated the procedure of the cross vault underneath.

Given the role played by the reinforced concrete frame, one thus understands what seems to be an 'authentic' masonry as virtually a *Bekleidung*, an applied cladding. This recalls, to some extent, Le Corbusier's Villa Sarabhai from 1955 and Maisons Jaoul from 1956 where Catalan vaults coalesce with reinforced concrete construction [19]. In this combination, the Catalan vault acted not only as formwork for reinforced concrete, but also as the *Bekleidung* expressing the reinforced concrete vault visually. One could also think here of Louis Kahn's Phillips Exeter Academy Library, where the *Bekleidung* takes the form of a perimeter masonry construction that programmatically accommodates reading and research spaces and is structurally attached to the reinforced concrete core [20].

Unlike the structural-symbolic aspect of Semper's *Bekleidungstheorie*, what one sees with the *Bekleidung*

in Hua Li, Corbu and Kahn is structural and spatial. If the former is predicated on precedents that, for better and worse, can be found throughout the history of architecture, the latter assumes a particular concern of modern architecture – with the authentic expression of construction, where what you see is what you get. I am not suggesting that modern architecture has in reality succeeded in dispensing with the former altogether – far from that. One might paraphrase Colin Rowe's words here concerning the distinction between literal transparency and phenomenal transparency that it is 'simply intended to serve as a characterisation of species and, also, as a warning against the confusion of species'.⁹

In the context of contemporary Chinese architecture, it is illuminating to compare Xinzhai Coffee House with Zhu Pei's Jingdezhen Imperial Kiln Museum. Zhu Pei's museum comprises an assembly of reinforced concrete vaults in a fantastic agglomeration [21, 22]. This deploys terracotta tiles inside and outside as *Bekleidung*, as cladding, to use the term in the sense of non-loadbearing. Here, the exterior use of terracotta tiles deserves special attention in the way that the tiles are bonded vertically, indicating the non-loadbearing nature of the cladding. The interior use of terracotta tiles, on the other hand, seems more problematic because of its simulation of the pattern of a masonry vault, particularly towards the end of the vault space, which, understood through the lens of authenticity, is no more than counterfeiting [23].

The contention here is that, tectonically speaking – after both Semper's theories and the preoccupations with authenticity of modern architecture – it is wiser to demonstrate the non-loadbearing nature of cladding than to imitate or counterfeit what it is not, which in this instance is masonry. Conversely, the non-loadbearing nature of cladding may serve as a motivation for design. For

that reason, I found Wang Shu's painting-like cladding, which more or less has become a 'trademark' of his architecture, is more convincing [24]. This, I think, is also what Adolf Loos meant by *Gesetz der Bekleidung*, insisting that cladding – while crucial to architecture's enclosure as well as the 'effect' of space following Semper's *Prinzip der Bekleidung* – should only be intended to be itself either in material or in form. Disapproving of how, at his time, 'one nails the structure to the façade with aplomb and hangs the "keystone" under main



25



26

moulding', Loos maintained instead that 'wood may be painted any colour except one – the colour of wood', and likewise 'stucco can take any ornament with just one exception – rough brickwork'.¹⁰ To be modern – a point enunciated by his eventual move from the *Prinzip der Bekleidung* to the *Gesetz der Bekleidung*, which basically sets Loos the 'cultural critic' apart from Semper the 'practical aesthete' – is not to dismiss ornament, but to make ornament in a reflective, disciplined and self-restrained manner.

Craft and commitment

This, it seems to me, is what Hua Li's approach to *Bekleidung* is about. Although different from the Loosian recipe, it should be understood – in the same vein as the work of Le Corbusier and Kahn – as an almost atavistic love of craft that engenders a commitment to assert the loadbearing meaning of masonry as a tectonic principle in an age where the construction of veneer prevails. Yet Hua Li's architectural interest goes beyond that. He is an architect looking for other modern expressions. To this end, the concrete frame of the third floor is a delicate touch, which has not only succeeded in playing a part in the expression of the Coffee House's upward techno-static diminishment, but also in imparting a contemporary accent to the otherwise rather archaic and agrarian character of the building. This last point also holds true to the concrete ambulatories that embrace the cinema: one is on the level of the main courtyard, while another is more like a patio descending to the subterranean level of the warehouse.

In Hua Li's own parallel, this overall plan of Xinzhai Coffee House can be understood as analogous to the European medieval monastery [25]. Notably, the main buildings of the new



27

25 Xinzhai Coffee House, site plan.

26 Xinzhai Coffee House, fenestration of the east end wall.

27 Xinzhai Coffee House, model of an earlier scheme.

construction have followed the north-south orientation of the existing ones. In this way, they not only take advantage of the prevailing wind during the larger part of the year, but also open the buildings to the remote landscapes in the north while forming an enclosure to the south. As far as the fenestration of the masonry part of the three-storey building is concerned, the shift from the round-arched openings of the south and north elevations to rectangular openings on the east end wall can be read as a move to attest to the architectural consequences of the north-south orientation [26], though, I would argue, compared to an earlier fenestration scheme in which a subtle differentiation was made between the bottom and the top, and between the front/back and the middle [27], this scheme as finally realised seems to torpedo rather than enhance the architect's intention.

Expressive integration

Reflecting on Hua Li's Xinzhai Coffee House, my intention has been to elaborate how site, programme, and tectonic expression are integrated into a whole. Conversely, it means that – without being understood in relation to site and programme – the tectonic expression of Xinzhai Coffee House cannot be fully comprehended. Embedded in relation to its site and orientation on one hand, and to the stacking of programme on the other, the Coffee House's articulation of techno-statical diminishment from the bottom-up is ingenious. In doing so, it brings us closer to the

tectonic conception of Sekler than that of Semper. For, while the former emphasised the structural and constructional aspects of tectonic expression, the latter insisted on the primacy of *Bekleidung* over structure.

It must be recognised, however, that – given the core role of the reinforced concrete frame in the overall structural system of Xinzhai Coffee House – the masonry component of such a tectonic manoeuvre is pretty much the same as a *Bekleidung*, not only to the extent that it constitutes the enclosure of the building, but also in the sense that it hides the primary structure of the concrete frame. What is raised, then, is a tectonic conundrum emblematic of our age. That conundrum is characterised, for better or for worse, by encrusted, layered, or even veneered modes of construction. The coalescence of reinforced concrete construction with masonry *Bekleidung* from Le Corbusier to Kahn to Hua Li shapes design strategies out of this conundrum by playing on the loadbearing or technostatic potential of *Bekleidung*. Nevertheless, the problem remains – in that pure veneering is widely at play in contemporary architecture, as exemplified here, in this essay, by Zhu Pei's Kiln Museum. In this regard, the *Gesetz der Bekleidung* that Loos called for a century ago seems to remain relevant and compelling.

It is my contention that, unless subject to critical awareness in the ethos of Loos, architecture will have little to gain from a revival of the *Bekleidungstheorie* that is now widely taken for granted as the weightiest legacy of Semper's 'practical aesthetics'.

Notes

1. Hua Li, 'Place & Place', lecture delivered at *The Viewpoint* in Hangzhou, 1 April 2018.
2. David Leatherbarrow, *The Roots of Architectural Invention: Site, Enclosure and Materials* (Cambridge: Cambridge University Press, 1993), p. 2.
3. Liu Zhiping, *Types and Structure of Chinese Architecture* (Beijing: China Architecture and Building Press, 2000), p. 50 [Chinese].
4. Liang Suu-ch'eng, *A Pictorial History of Chinese Architecture: Chinese-English Bilingual Edition* (Beijing: Baihua Literature and Art Publishing House, 2001), p. 463.
5. Mari Hvattum, *Gottfried Semper and the Problem of Historicism* (Cambridge: Cambridge University Press, 2004), p. 11.
6. *Ibid.*, p. 73.
7. Eduard F. Sekler, 'Structure, Construction, Tectonics', in *Structure in Art and in Science* (New York: Brazil, 1965), p. 89.

8. *Ibid.*, p. 92.
9. Colin Rowe and Robert Slutzky, 'Transparency: Literal and Phenomenal', in *The Mathematics of the Ideal Villa and Other Essays* (Cambridge, MA: The MIT Press, 1976), p. 176.
10. Adolf Loos, 'The Principle of Cladding', in *Spoken in the Void, Collected Essays 1897–1900*, introduction by Aldo Rossi, trans. by Jane O. Newman and John H. Smith (Cambridge, MA: The MIT Press, 1982), pp. 67–8.

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Competing interests

The author declares none.

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