Peplos
The Dissimulating Façade.

"Irrational thoughts should be followed absolutely and logically"[1]
Sol LeWitt

A shining demonstration

In 2007 London won the bid to host the 2012 Olympics. The site for the games is a large tract of land near Stratford in the Lower Lea Valley in East London. In part, the bid was successful because of a commitment to use the infrastructure of the games to create a new urban quarter combining parks, sports venues, housing retail and workplaces. It was important that this great transient event would have a permanent impact on what was perceived as a run down part of the city. The site for the games, on old abandoned railway land, had previously been given Outline Planning Consent for a new urban area clustered around Stratford International train station.

The long-term ambition to build a grand new urban realm was naturally telescoped by the immediate requirement to have a working development in place by 2012. The ownership of the land changed hands, leaving the retail giant Westfield owning one parcel and the developer Lend Lease owning another. A new strategy emerged in which shopping and leisure would be provided within a huge mall developed by Westfield and the residential area would be built by Lend Lease as housing for the athletes. After the games, further residential phases would be built around the Olympic site. In this way, land ownership and time constraints created a separation of the previously integrated uses; a residential area would stand beside an enclosed mall and both would look on to a new park containing sports venues.

The decision to use the Olympics as a spur to develop an enormous area of the city is a manifestation of a particularly modern condition. This six-week festival, experienced by billions of people on television around the world, will leave behind a place, which is the permanent home for a large urban population. The fugitive, flickering event witnessed on countless screens is intended to leave a residue of permanent built form that will frame peoples' lives. It must become ordinary, embodied, and close knit.

Lend Lease adopted much of the master plan they inherited from the older Outline Planning Consent. The design consisted of regular grid of perimeter blocks of around 100m by 100m separated by streets of between 20m to 30m wide. Working with Fletcher Priest and the architects Patel Taylor, Lend Lease developed the plans to create a standard block layout where a central raised courtyard is built over car parking and surrounded by a ten-storey development of houses and flats. The lower three floors are town houses, while the upper floors are divided into flats and maisonettes, all for a mixture of private market, intermediate and social rented accommodation. The housing would be designed for long-term use but it would be subdivided for the eight-week period when athletes would occupy it in 2012.

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[1] Solomon LeWitt 'Sentences on Conceptual Art' *Art-Language Vol. 1 No. 1* (May 1969) p.11. From Rosalind E. Krauss, *The Originality of the Avant-Garde and Other Modernist Myths* (Cambridge, Massachusetts: MIT Press, 1984) p.255

The Olympic Development Authority (ODA) exported their obligation to build houses for athletes by employing an experienced private developer to carry out the work. They took on the money and time risks and they expected to make a profit on their investment of capital and expertise. Naturally the developer wanted to build the houses as cheaply and quickly as possible in a way that maximised their margins. However the ODA wished to promote its own values through the process whereby the development of the Olympic Village would be a shining demonstration of good design in which many young architects could showcase the best of British talent. The development would be an example of what enlightened patronage is able to do to improve the capital's housing stock and public realm. In light of this the ODA created an overseeing committee, the Design Review Panel, to regulate the developer's management of the process so that these values could be guaranteed**.

The Design Review Panel, working with the Architecture Foundation, carried out a competitive selection procedure to choose eighteen architectural practices to design the athletes' housing. Lend Lease did not want to work with such a number of practices all trying to solve the same problem so instead they chose four architects out of the group because they had demonstrated previous experience in the large scale production of urban housing for commercial developers. This small group designed the 'chassis' for all 2800 homes in order to produce a standardised internal layout, structure and services for each of the blocks across the whole 27-hectare development. However, the Design Review Panel wanted to create a greater urban variety, as well as a broader range of opportunity for architectural practices, so they insisted on a larger pool being used. In response, Lend Lease instructed their architects to appoint other practices as sub-consultants to design facades for the already standardised 'chassis'.

This arrangement illustrates a coming together of cultural aspiration and rational management. On the one hand, the celebration of athletic achievement is seen to have its correlative in celebratory built form but on the other, the prominence of the development necessitates that it is produced in a way that exposes the final client to the lowest financial risk. It is evident that one aspiration requires a celebration of particularity and difference while the other leads to a highly normative system of design delivery. Social modernism is characterised by this kind of marriage of capital and social values in which capital is used as an engine for growth but it is moderated to embody social aspirations through legislation, governance and specification. In the early twentieth century, social democracies used the wealth and organisational capacity of the state to create buildings for large public institutions in a system where both the institutions and their built correlatives were seen as embodying social democratic values. It is more common now in Britain for the government and local authorities to export the financing and risk of construction out to private developers, while trying to protect social democratic values through specification, legislation and rhetoric. The hobbling of the free operation of capital through prescription to protect social values creates a particular working tension in the development of buildings that is comparable to two characters running a three-legged race.

When Glenn Howells, one of the 'chassis' architects, asked us to participate as sub-consultants on his team we accepted. We recognised that the commission to design only the façade of a pre-ordained building core-form offered an opportunity to deal with a very clear example of a condition that is increasingly common in building construction; the separation of design and construction into an abstract system of component tasks and the precipitation of the representative part of architecture onto the thin layer of the building's perimeter. We were reminded of Kenneth Frampton's characterisation of a contemporary dilemma.

"Modern building is now so universally conditioned by optimised technology that the possibility of creating significant urban form has become extremely limited. The restrictions jointly imposed by automotive distribution and the volatile play of land speculation serve to limit the scope of urban design to such a degree that any intervention tends to be reduced either to the manipulation of elements predetermined by the imperatives of production, or to a kind of superficial masking which modern development requires for the facilitation of marketing and the maintenance of social control. Today the practice of architecture seems to be increasingly polarized between, on the one hand, a so called high tech approach predicated exclusively on production or, on the other, the provision of a 'compensatory façade' to cover up the harsh realities of the universal system"[2]

We began to think of the idea of an independent façade as an architectural commission in itself. Naturally, the site for this project lay between the standardised form of the housing block and the public space of the city, embodied locally in the master plan. The façade was conceived of as a screen standing between the private interior and the public realm, both of which had already been designed separately by others. The domestic interiors were based on the application of prescribed space standards and the streets and squares were conceived in sceneographic terms. In undertaking this commission, we did not intend to either condone or sarcastically undermine the development model. Instead, we wanted to represent this particular condition equivocally in a way that understood its origins, freedoms and difficulties.

Le Corbusier's hymn to the Parthenon

There is a new, project management led, risk-averse culture that is changing the nature of construction in the UK. Innovative forms of procurement put an increased level of responsibility for the completion of construction documents onto the contractor and the specialist. The corollary of this is that the role of the architect in determining the final design, during detailing and construction, is diminished. Buildings are increasingly conceived of as assemblies of approved, manufactured products, rather than individually crafted entities. The diminished new role offered to architects has the effect of distancing them from both the user and the maker. As this distance becomes the norm, a new generation of architects will arise who have limited experience of the realities of construction and occupation. The traditional role of the architect in overseeing the design and construction will be delegated to management specialists who focus on isolated particles of the whole reality of the building. It is, in effect, the application of Taylorism to the design process.

Taylorism is a broad range of 'scientific management' techniques applied to manufacturing that came to be associated with the nineteenth century engineer Frederick Winslow Taylor who proposed the Taylor System. He advocated an analysis of work processes leading to the division of labour into discrete standardised entities that could be completed with maximum efficiency. By analysing and dividing a complex task, each component could then be allocated to the cheapest competent worker. The role of integrating these tasks belonged to a new echelon of workers known as planners whose job it was to synthesise the divided

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[2] Kenneth Frampton 'Towards a Critical Regionalism' in *Labour, Work and Architecture, Collected Essays on Architecture and Design* (London: Phaidon Press, 2002) p.78

components into a new unity.[3] It seems clear that the managed division of the architectural conception of the buildings in the Athletes' Village into a broad master plan, detailed masterplan, followed by 'chassis', façade and detailed component design, each carried out by different practices and integrated by a team of project managers, represents the promotion of Taylorism from manufacture into design itself.

Taylor and his followers** promoted scientific management through books which, as Guillén points out, were part treatise and part manifesto.[4] The ideological aspect of Taylorism was very attractive to an emerging group of avant-garde architects in the 1920s. They saw the systematic organisation of labour in the production of buildings as an essential component of the modern *Zeitgeist*. These rational processes could herald a new industrial age in the manufacture of buildings. In general, Modernist architects saw in Taylorism a range of compelling attractions, a revolution in thought, an escape from the past and a utilitarian manifesto that promised a systemised process leading to ordered form which in turn would have an organising effect on human society.[5] Corbusier first read Taylor's *Principles of Scientific Management* in 1917 and gradually became convinced of the rational underpinning of this systematic approach.[6] He advocated that "in order to BUILD: STANDARDIZE to be able to INDUSTRIALIZE AND TAYLORIZE,"[7] and he also proposed that we make houses, "By machine tools in a factory, assembled as Ford assembles cars."[8]

The famous pairing on page 132 of Le Corbusier's *Vers une Architecture* of the Parthenon with an automobile invites us to find a common spirit between the conception of this ancient temple and the perfection of a modern wonder of engineering. The Parthenon is a machine for moving the emotions "la machine a emouvoir."[9] In his description, they are both products of selection. The car is a systematic assembly of machine-manufactured parts, each optimised by rational processes. The Doric Temple is also an assembly of basic components such as columns, entablatures and metopes; they equally have been perfected through a process of selection and specialisation.[10] For him, the spirit of Taylor and Henry Ford is alive in the Parthenon.

Le Corbusier, Gropius and other architects in the 1920s thought it was important to select and train apprentices to become expert parts of the managed system, but one clear assumption in their thinking was

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[3] Mauro F. Guillén *The Taylorised Beauty of the Mechanical Scientific Management and the Rise of Modernist Architecture* (Princeton and London: Princeton University Press, 2006) p.5

[4] Mauro F. Guillén *The Taylorised Beauty of the Mechanical Scientific Management and the Rise of Modernist Architecture* (Princeton and London: Princeton University Press, 2006) p.6 and Manfredo Tafuri *Architecture and Utopia* (Cambridge, Massachusetts: MIT Press, 1976) p.93

[5] Mauro F. Guillén *The Taylorised Beauty of the Mechanical Scientific Management and the Rise of Modernist Architecture* (Princeton and London: Princeton University Press, 2006) p.20

[6] Ibid. p.19

[7] Mauro F. Guillén *The Taylorised Beauty of the Mechanical Scientific Management and the Rise of Modernist Architecture* (Princeton and London: Princeton University Press, 2006) p.32 and Mary McLeod 'Architecture or Revolution: Taylorism, Technocracy and Social Change' *Art Journal Vol. 43 No. 2* (1983) p.143

[8] Reyner Banham *Theory and Design in the First Machine Age* (Cambridge, Massachusetts: MIT Press [1960] 1980) p.222

[9] Le Corbusier *Towards a New Architecture* (New York: Dover Publications, 1986) p.211 exact words?

[10] Richard A. Etlin 'The Parthenon in the Modern Era' from Jenifer Neils ed. *The Parthenon, From Antiquity to the Present* (Cambridge & New York: Cambridge University Press, 2005) p.376

that the architect would remain above them as a key thinker in the echelon of the planners. The architects' task was to conceptualise mechanical and manual processes and synthesise the manufactured particles into meaningful built form. In the Taylorised process "a strange foreman directs severely and precisely the restrained and circumscribed tasks."[11] Le Corbusier's description reveals the avant-garde architect's own self-image as the dispassionate author of a synthesised whole. In the separation of construction between conception and execution, there was no doubt on which side the architect lay.

What they did not appear to see was that the same process of division and specialisation could equally be applied to their own activities. The "strange, precise, severe foreman" need not be an architect. Architects with their manifestos, aesthetic cults and liberal training might not be suited to the dispassionate management of a systematic process. Architectural design could itself be divided, specialised and procured at the lowest unit cost for every operation.

The Parthenon in its place.

The Parthenon is a Doric Temple with Ionic elaborations dedicated to Athena Parthenos, constructed on the Acropolis in Athens. It contained a marvellous cryselelephantine cult statue of Athena, which is now lost. It was constructed on the site of an older archaic temple, dedicated to Athena, built after the battle of Marathon in 490BC, which was then burnt by the Persians during their brief occupation of the city. The new temple reused the same podium built upon the hill and, while it was dramatically wider, it inherited many of the old dimensions of the earlier construction. Old building materials were reused as well, including column drums that are said to have influenced the unusually slender proportions of the new building. It is evident that the new Parthenon was seen as a completion or rebirth of the older temple. This claim is reinforced by the apparently anomalous presence, on the northern stylobate, of a preclassical cult shrine dedicated to Athena Ergane that is situated in the exact location of its previous incarnation.[12] The Parthenon, far from a systematic deployment of rationally derived components, appears to have been deeply entangled in its own prehistory.

If we look at the general representational scheme of the exterior carvings we realise that the fragments, now scattered around the world, were once part of a richly connected arrangement tying the building to its setting. Whilst the west pediment showing the conflict of Athena and Posieden, related across to the site of the olive tree and the salt spring associated with the two gods, the east pediment depicting the birth of Athena from the head of Zeus, faced the Sanctuary of Zeus Polieus. Equally the metopes depicting the sack of Troy overlooked the courtyard of the Chalkoteke, which once contained a large bronze statue of the wooden horse. In particular, the highly unusual Ionic frieze around the cella walls related to the older adjacent site of the destroyed temple of Athena Polais to the north of the Parthenon. The subject of this narrative was the ancient Panathenaic procession in which the people of Athens presented the goddess Athena with a new robe called a peplos every four years. We can assume that the procession depicted in the frieze, which set out from the Sacred Gate and climbed the hill of the Acropolis, would have reached its

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[11] Le Corbusier *Towards a New Architecture* (New York: Dover Publications, 1986) p.275

[12] Jeffrey M. Hurwit 'Space and Theme: The Setting of the Parthenon' from Jenifer Neils ed. *The Parthenon, From Antiquity to the Present* (Cambridge & New York: Cambridge University Press, 2005) p.26

climax at, or in front of, this previous temple. The decoration on one building represented an event that was bound into the previous life of an older ruined building next door. Here was a building that painstakingly represented an excavation of its own origins. Its position, alignment, modules, proportions, materials and ritual places are an amalgam of earlier constructional, social and ritual practices. A visitor in 5th century Athens would not have read the building as idealised form but as one part of an unfolding narrative tying together people, gods and site.

The Ionic frieze is interesting because it used highly innovative means to tie the identity of the new building into the conditions of its emergence. A continuous frieze on a Doric temple is itself unusual, as is the depiction of citizens rather than gods or mythical subjects. It has been argued that the wider proportions of the building generated an exceptionally large number of metopes in the upper level that may have exhausted the repetoire of fixed panel decorations, therefore creating a problem of finding suitable subjects for framed Doric decoration on the walls of the cella beneath the eaves**. Whatever the reason, the continuous frieze provided an extraordinary opportunity to make a rhythmical sequence along the upper part of the wall that would have been visible to visitors or as they passed along the route to the eastern entry. Imagine looking up and seeing the running ream of figures of the ritual procession flickering between the columns high up as you passed.

The Parthenon was approached from the west along the steeply ramping end of the Panathenaic Way.[13] The approach, turning and ascending, transformed the symmetrical and axial organisation of the plan into an experience of rotational unfolding. First the northwest corner is seen above you as the ramp climbs past the enclosing walls, then you process past the whole northern flank of the building before turning back on yourself to enter at the east end facing away from your approach. The arrangement of the frieze shows a strong relationship with the approach to the building. Jennifer Neil argues that there is a clear temporal structure to the organisation of the figures. As you approach the building from the direction of the Dipylon Gate to the west, you are presented with a representation of the preparation of horses for the procession, which would have taken place there. Passing the northwest corner you see ranks of cavalry spring into motion and most of the length of the northern façade is taken up by rhythmic waves of horses and riders. Approaching the brow of the hill, the horsemen give way to walking processional figures carrying ritual objects such as olive branches and musical instruments. Once you arrive at the platform to the east of the Parthenon, you turn and see the immediate aftermath of the fixed ritual at the end of the procession. You move from before, to during, to after as you pass the building. A lovely pair of details lends authority to this interpretation. At the centre of the west façade a young man prepares to drape himself with his robe or *himation,* at the centre of the east façade a young boy is folding away the *peplos*, which had formed the heart of the ritual procession. The act of vesting and putting away a piece of drapery frames the continuous flow of the procession.

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[13] Ibid., pp.10-11. The Propylaia stands at the top of the ramp, framing the first views into the sacred site of the Acropolis. It is one of a collection of buildings, including the Artemis Brauronia, built during the period of Periclean redevelopment of the whole site, which can be said to form a designed setting for the ascent to the Parthenon. Passing through the doorways of the Propylaia the visitor is lead from an entrance court up a ramp towards the summit. The Parthenon, at first hidden behind the enclosing walls of the Artemis Brauronia, was gradually revealed on the high ground to the southeast as the steep path climbed the hill.

There is an evident formal translation between the position and flow of the procession along the north and south sides of the building but the representation on the northern side is considered to be far more sophisticated, innovative and lively**. It seems that as it was being made the building was already turning its expressive energy towards the arrival sequence. The matching of cavalry on the two long flanks suggests an illusion where the procession passes right through the depth of the building. There is a persuasive conjecture that the seated figures on the east façade form a semicircle notionally extending in an arc out from the façade**. These are all ambitious illusions of spatial depth. The frieze represents a temporal sequence from west to east, spatial depth passing through and projecting out from the plane of the wall and a twisting of the narrative sequence away from the organisational axis of the building and towards the approaching viewer who may even be a part of the procession mirrored in the frieze.

I have described a temple situated near the brow of a hill, just off the path leading to the summit. It takes its place among other buildings and ruins and it stands on the site of a previous version of itself. The people who made it set up a highly sophisticated network of local associations for practical and symbolic reasons. These associations range across the space of the site and they sound down into the history of the place. It belongs in a close spatial and temporal community where everything owes a duty to everything else. The previous temple on the site of the Parthenon celebrated the victory at the Battle of Marathon. Boardman makes the lovely speculation that the number of horsemen on the Parthenon frieze might equal the number of Athenian dead at Marathon.[14] The new building picks up a stitch from its vanished ancestor.

Le Corbusier made a drawing of the Parthenon that was published in *Vers une Architecture*. He drew the horizon and the dark silhouette of the Acropolis. The profile of the trabeated form of the Parthenon is set against the luminous backdrop of the sea. It is at the centre of a broad horizontal stripe that passes right across the drawing. This isolated figure is his “pure creation of the mind.”[15] He describes the setting, “The Greeks on the Acropolis set up temples which are animated by a single thought, drawing around them the desolate landscape and drawing it into the composition.”[16] The physical definition and isolation are reinforced in the text, “It is a question of pure invention, so personal that it may be called that of one man; Phidias made the Parthenon, for Ictinus and Callicrates, the official architects of the Parthenon, built other Doric temples which seem to us cold and uninteresting….Phidias, Phidias the great sculptor made the Parthenon.”[17] This establishes the conditions for the act of architectural creation that seems to occur almost instantaneously. “Every sacrifice, every cleansing has already been performed. The moment is reached when nothing more might be taken away, when nothing would be left but these closely knit and violent elements, sounding clear and tragic like brazen trumpets.”[18]

Le Corbusier strips Parthenon of its complex authorship, its entanglements in the loam of its origins, its finely negotiated relationships with its situation and its identity as the built manifestation of rituals. He replaces it with an abstract system of parts held up against a generalised idea of nature. The will to form of the individual author acts like a breath of life on the finely tuned components. He compares the parts of the

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[14] B.F. Cook *The Elgin Marbles* (London: British Museum Press, 1984) p.52
[15] Le Corbusier *Towards a New Architecture* (New York: Dover Publications, 1986) p.218
[16] Ibid., p.204
[17] Ibid., p.219
[18] Ibid., p.206

building to the front wheel brake of the Delage automobile. “This precision, this cleanliness in execution goes further back than our re-born mechanical sense. Phidias felt in this way: the entablature of the Parthenon is a witness.”[19] For him, the abstract and systematic production of the automobile in the Taylorised system represents the re-birth of a mechanical sense embodied in the Parthenon. “The Parthenon is a product of selection applied to an established standard.”[20]

The Scattering

By the time Le Corbusier idealised the Parthenon it had become a ruin, stripped of most of its carvings and left isolated amidst the wrecked remains of its previous setting. The preservation of this temple may have owed something to a Christian interpretation of some of its carvings and the ascription to Athena Parthenenos, the Virgin. This made it a place suited to Christian worship, which extended its life beyond the pagan era and forward to its conversion into a mosque under the Ottomans. Nonetheless, the building and its carvings were subjected to an extraordinary sequence of depredations during its two and a half thousand-year history.

An earthquake damaged the building around 426BC and it was burnt down during the Herulian sack of Athens in 267AD, destroying the interior and the roof. When the building was converted to a church in the early Christian era, details of the carvings were hacked off to accord with religious sensitivities and to reinforce a new interpretation of the subject matter. In the twelfth century windows were cut into the east and side friezes to bring light into the interior. In the fifteenth century it was converted into a mosque with a minaret. In 1687 the Ottoman Turks were using the building as a powder store when the besieging Venetian force under Morosini bombarded it. An explosion ripped the building apart and destroyed many of the original carvings.

The drawings of James Stuart in 1751 record many of the stones of the frieze still attached to the building. Some lay scattered on the ground and others were taken away for building work, souvenirs or for lime. In 1801 the Italian sculptor Lusieri began removing the stones of the pediments, metopes and frieze under instruction from Thomas Bruce, Lord Elgin. The backs were then cut off to make the stones lighter and more easily transportable. This pragmatic operation changed them permanently from deep walling elements to thin relief panels, changing their identity from structure to cladding. As a result, the Greeks usually to call them the Parthenon Stones, while the British call them the Elgin Marbles. The key central east frieze block was broken while loading it onto a ship at Piraeus, while one of the ships taking the stones to Alexandria sunk off Kythera harbour. The sunken stones in crates were eventually recovered by divers and carried away to London, arriving in 1808. In 1810 the stones were exhibited in a wooden shed behind the back of Lord Elgin’s London home. Indebted in 1816, Elgin sold them to the British Government and, since then, they have been kept within Burlington House and various rooms in the British Museum.

Having been taken from the place where they were carved, the stones experienced a new diaspora during the nineteenth century, as casts were made of the carvings and they were sent around the world to art

[19] Ibid., p.129
[20] Ibid., p.133

schools and museums. Fragments of stone ended up in Paris, Copenhagen and Basel. The stones remaining in Athens were subjected to further sieges during the War of Independence; to highly unsuitable restoration using ferrous material at the end of the 19th century and to atmospheric pollution during the twentieth century. In 1816 casts were made of some of the stones remaining on the Parthenon in 1801 and these casts act as a register of the damage done to the ones that remained with the building. The stones in London were kept in damp smoggy conditions in rooms heated by coal fires. Temperature fluctuations caused dirty condensation to coat the stone with a dark greasy residue. This was frequently cleaned with a range of substances many of which were not suited to delicate marble surfaces. The infamous unauthorised cleaning by the British Museum acting under the influence of Lord Duveen in 1938-9 was a culmination of sequential damage done during their years in London**.

What we observe in this complex branching history is a cyclical process of interpretation and idealisation, in which each generation and culture finds or invents meaning in the stones, while the objects themselves suffer an irreversible dissolution of their original physical condition. The interaction of idealisation and decay is most telling when it is the ideas imposed upon the artefacts that bring about a new episode of physical damage. Christians removed genitalia from human figures. Lord Duveen, in thrall to a Neoclassical ideal conflating whiteness and purity, instructed the natural patina of oxidised Pentelic marble to be mechanically removed using metal instruments**. Idealised, re-idealised and damaged the stones were both scattered and replicated. In this way they became truly deracinated. Their dissolution, replication and dispersal gave rise to many new representations, but the original objects endure in an uncertain, suspended state that is always present and always lost.

The Ionic frieze, ran like a garland around the site of a god, high up beneath the eaves; seen flickering between columns in light reflected up from the bright ground. It is now broken into hundreds of pieces, most of which can be seen, turned inside out, at eye level, in the flat light of a museum. The entanglements of place have broken away and yet the figures persist, marching, galloping rhythmically in procession. The structural substance has gone from the material and the spatial illusion of depth in the reliefs has been inverted. They hang there, siteless, homeless; like artworks, embodying nothing more than their own capacity for translation.

Mrs. Coade's Manufactory

The arrival of the Parthenon Stones in London coincided with a crisis in the debate between original figurative sculpture and architectural form. Just as individually commissioned monumental sculpture was disappearing from public buildings, mechanically reproduced casts were becoming more technically sophisticated and more common. The success of Eleanor Coade's cast-stone factory on the South Bank of the Thames from 1769 onwards is testament to a thriving industry in industrially produced ceramic stoneware. Her *Coade Artificial Stone Manufactory* worked for Robert Adam, James Wyatt, William Chambers, John Nash and John Soane**. This change in both cultural attitudes and technical capacity was reinforced and complicated by the writings of JJ Winkelmann who held that the way for the modern age to achieve greatness was through literal imitation of the Greeks.[21] Joseph Rykwert, observing this

[21] (BarryB 15)

phenomenon, suggests that the Parthenon carvings were seen as nonpareil and therefore incapable of improvement.[22] *"At the same time, mechanically produced casts were becoming increasingly common and accepted by architects as a near antique surrogate."*[23]

Rykwert shows that this occurred in London around the time of the re-planning of the axis from Regent's Park to Carlton House carried out by Nash under the patronage of the Prince Regent. The speed and economies of construction required by this development necessitated quicker, cheaper ways of building. Stone was not suitable, but the combination of brick and stucco, with decorative mouldings and statues mechanically replicated, proved practical for creating and embellishing the urban scene at a grand scale. Rykwert also associates this development with the Cubbitts and Decimus Burton. Burton's replication of the Ionic frieze of the Parthenon in stucco around the Athenium Club on Pall Mall is a good example. John Soane filled his house with plaster casts of antique sculptural details and he used cast-stone copies of Lord Elgin's Ionic caryatid from Athens repeatedly in different projects in London.[24] The Cubbitt brothers went on to develop stuccoed brickwork with cast decoration as the principal constructional technique for their development of the new residential areas of Belgravia, Paddington and Kensington for the emerging urban middle classes.

Nash's original development of the villas around Regent's Park set the standard, for better or worse, for a form of urban development based on thin housing stock clothed in a scenographic layer using the mechanical replication of antique sculpture in cast-stone and stucco. John Summerson describes Nash's villas as "not only a dream of antique architecture" but "just as much a finance-fantasia over risk and profit."[25]

"It is magnificent. And behind it all – behind it are rows and rows of identical houses, identical in their narrowness, their thin pretentiousness, their poverty of design. Where the eye apprehends a mansion of great distinction, supported by lesser mansions and service quarters, the mind must interpret it as a block of thin houses…The sham is flagrant and absurd." [26]

These new developments in urban design, initiated in Paris and London, mark a significant shift in the relationship between building stock, public space and the way in which meaning was represented. They are associated with changes in society emerging from the Enlightenment. New building types were needed to cater for the boom in commercial and administrative activity and the growing bourgeois class who conducted their affairs separately from the aristocratic and religious elites. New institutions like museums, schools and academies required a form of architectural representation that set them apart from the old idea of the city centred on the court and the church. Citizens circulating freely in public space were subjects for improvement in the spirit of the new age. Urban spaces and the buildings that framed them were required to have an exemplary character so that they might be instrumental in forging the values of this society, not

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[22] Joseph Rykwert *The Judicious Eye: Architecture Against Other Arts* (London: Reaktion Books, 2008) p.73
[23] Ibid.
[24] Joseph Rykwert *The Judicious Eye: Architecture Against Other Arts* (London: Reaktion Books, 2008) p.75
[25] John Summerson *Georgian London* (Harmondsworth, Middlesex: Penguin Books, 1978) p.185. Summerson is quoting Rasmussen's description of the Adelphi in *London, The Unique City* (Harmondsworth, Middlesex: Penguin Books, 1960)
[26] John Summerson *Georgian London* (Harmondsworth, Middlesex: Penguin Books, 1978) p.182

simply mirroring them. The wholesale import of an idealised Greek culture and the mechanical replication of its representations was consistent with a culture that linked commercial realism with a desire to emulate a perceived golden age in public life. Here is an early manifestation of the hobbling together of cultural improvement and bottom-line technique.**

There are two critical factors at work in the scenographic staging of exemplary public space on the scale of the city. An external set of representations is imposed upon communal life as a convention deemed to stand for cultural value but its hold on the communal imagination was necessarily unstable because these representations were not a product of the society that adopted them. The wholesale appropriation of another culture's images is already an abstract strategy that creates an immediate distance. This distance is amplified by the mechanical reproduction of these representations generating what Benjamin might describe as a loss of aura.**

The ease of manufacture of mechanically produced decoration made it accessible for all kinds of house building in the rapid development of London. Redgrave, in his 1851 *Supplementary Report on Design for the Great Exhibition*, wrote about the "sickening monotony"[27] of decoration produced by machine.

"Whenever ornament is wholly effected by machinery, it is certainly the most degraded in style and execution; and the best workmanship and the best taste are to be found in those manufactures and fabrics wherein handicraft is entirely or partially the means of producing the ornament."[28]

His most telling comments relate to the relationship between cheapness and excellence.

"It is this merely imitative character of architecture which so largely contributed to decorative shams, to the age of putty, papier maché, and gutta percha. These react upon architecture; and, from the cheapness with which such ornament can be applied and its apparent excellence, the florid and the gaudy take the place of the simple and the true."[29]

So, when imitation, produced cheaply, creates "apparent excellence," it is a sham. The queasiness at the heart of this proposition touches a key aporia in the development of Modernism. It conflates three inter-related uncertainties; a lack of consensus about an agreed order of images proper for public representation, a turning inward towards constructional processes and materials as the proper ground for architectural order, and an anxiety about producing popular representations cheaply for an emerging middle class.

The period of the Enlightenment and the early Industrial Revolution are characterised by the application of rational systematic thought to natural and human world. This inherently abstract thinking eroded the interwoven systems of complex ancestral beliefs that had underpinned society. TJ Clarke says,

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[27] Richard Redgrave 'Supplementary Report on Design' in *Reports by the Juries* (London: William Clowes & Sons, 1852) from Harry Francis Mallgrave *Gottfried Semper: Architect of the Nineteenth Century* (New Haven and London: Yale University Press, 1996) p.202

[28] Ibid.

[29] Ibid., p.203

“”Modernity” means contingency. It points to a social order which has turned from the worship of ancestors and past authorities to the pursuit of a projected future – of goods, pleasures, freedoms, forms of control over nature, or infinities of information. This process goes along with a great emptying or sanitising of the imagination. Without ancestor-worship, meaning is in short supply – meaning here meaning agreed-on and instituted forms of value and understanding, implicit orders stories and images in which a culture crystallises its sense of the struggle with the realm of necessity.”[30]

The figurative tapestry woven of images, stories and received truths that was stitched back into a hinterland of ancestral authority is replaced by abstract reasoning which does not in itself yield an embodied alternative. What resulted was the sense of a flight into emptiness. In architecture, the agreed external order, whether religious or natural, which a building could imitate, no longer had implicit authority. This created a tendency for architecture to appeal, not to a fixed external correlative, but to its own materials, processes and procedures. This is how something of apparent excellence can be described as a ‘sham’. What it lacks is integrity in how its materials where handled in the process of its becoming. Meaning is something turned in on the thing itself.

The Festival Scaffold

The question of what constitutes meaning in architecture lies at the heart of my interest in Gottfried Semper, a contemporary of Redgrave, and a participant at the Great Exhibition. Semper had confounded public opinion with his early investigations into the polychromatic paint applied to Greek temples, which had shattered preconceived notions about the purity of classical architecture as a product of its whiteness. He used his experience of the Great Exhibition to develop a conception of a practical aesthetics based on the relationship between ritual activity and human manufacture.

This theory valued both the intrinsic qualities of a building or work of art such as its material, organisational and tectonic properties and also its ability to represent the social, cultural and historical meanings that are part of the world in which it is made. Semper accepted Carl Botticher’s conception of a structural idea and its tangible presentation as one motive for architectural representation**, but he resisted the idea that a building only represents its own autonomous properties. Semper asked that architecture should also refer to the outer world from which it has emerged and that it should externally stage the ideals and experiences of the people who make it. In this he echoed the anthropologist Gustav Klemm.

“Man has the urge to manifest his experiences externally, and to adorn his environment with these representations.” [31]

Carl Botticher developed his investigations on textiles and ornamentation into a theoretical synthesis describing the representational character of Greek temple architecture. In a book called *The Tectonics of*

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[30] T.J. Clark *Farewell to an Idea: Episodes from a History of Modernism* (New Haven and London: Yale University Press, 1999) p.7

[31] Mari Hvattum *Gottfried Semper and the Problem of Historicism* (Cambridge: Cambridge University Press, 2004) pp.43-44

the Hellennes (1844-52)[32] he proposed principles by which the underlying structural order is made manifest. He conceived the building as having a core-form (Kernform) which is the mechanically and statically necessary structural lattice**. It embodies both the geometric structural principle and the material required to carry out the work of support. Conceived simultaneously, the art-form (Kunstform) is an idealised outward representation of the working structure. This duality between a concealed structural capacity and an external representative dressing differs markedly from the principle of structure as having a literal and direct truth-telling duty; one which lies at the heart of our assumptions in the English speaking world. That tradition which leads from Pugin through the Arts and Crafts movement into Modernism, insists on the literal truth of structural form**. For Botticher, structural form had a hidden working essence and an idealised outer representation.

One key limitation of Botticher's thinking was that he insisted on the autonomous properties of Greek temple architecture**. He saw the development of Greek architecture as something internal to Greek culture and therefore considered the stone temple to be a type that evolved through the working out of its own inherent order. Importantly, its representational capacity was limited to a showing out of its intrinsic structural properties. Gottfried Semper, though profoundly influenced by Botticher, saw the Greek temple as a highly refined manifestation of broader cultural, temporal and geographical continuities. He witnessed the arrival of Layard's Assyrian finds at the British Museum in the 1840s and he realised that the motif of representational dressing was clearly established in these earlier eastern palaces and temples. He made a drawing of an Assyrian carpet pattern carved on stone, suggesting the persistence of a textile metaphor across time, materials and cultures.

Semper characterised the chaos of the contemporary condition of architecture by illustrating the shortcomings of various approaches. He highlighted that Materialism raised the technical and material properties of a building above the idea; Historicism was limited to the dutiful replication of styles conceived and developed in other periods and Schematicism dwelt in the abstract formulae of contemporary aesthetics. He particularly derided "the boastful displays of thoughts, profundity, richness of meaning, and so on."[33] In order to avoid this trinity of temptations, he proposed a set of principles that defined the preconditions for a work of art and established the motive that directed its coming to form. For these he used the phrase 'practical aesthetics' to focus on social and cultural conditions and to avoid intellectual systems based on abstractions.

He sought to trace the origins and metamorphoses of the motifs of art and architecture so as to understand how the artwork allows us to establish our place in the world. It locates us and provides us with orientation. He saw this as a poetic activity in which a particular form of knowledge is reified through making. The simplest rituals and dances, which echo the harmonies we intimate from our surroundings and embody order in the world, are fixed into enduring form through analogous activities such as weaving, adorning and

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[32] Harry Francis Mallgrave *Gottfried Semper: Architect of the Nineteenth Century* (New Haven and London: Yale University Press, 1996) p.219

[33]

binding. Architecture comes into being when these woven materials are used to create space. They are held on frames creating vertical enclosure, the separation of "the *inner life* from the *outer life*"[34].

The primordial technical arts, which are defined as weaving, ceramics, carpentry, masonry and metalwork, are at the origin of subsequent architectural manifestations. He showed how, through a process of material metamorphosis, a technique of manufacture can acquire symbolic value and be carried through as an organising principle to new or more durable versions of the original architectural element. The primitive mat used as a spatial enclosure is remembered in hanging tapestries that are then represented in the stone carvings or bonding patterns of masonry walls. He insisted on a powerful connection between architecture and dressing, saying *"that the beginning of building coincides with the beginning of textiles"* (his italics).[35] The Greeks took this older eastern idea linking the encrustation of buildings to dressing. But Semper saw an important achievement in the Greek manifestation of this idea. The veiling or dressing of the spatial enclosure looked beyond technical representation, towards a symbolism that manifest a theatrical embodiment of the deepest human issues. Monumental architecture gave permanence to the transient festival stage on which both the structure and the participants appeared in temporary vestments.

"The festival apparatus, the improvised scaffolding with all the special splendour and frills that indicate more precisely the occasion for the festivity and enhance the glorification of the day – covered with decorations, draped with carpets, dressed with boughs and flowers, adorned with festoons and garlands, fluttering banners and trophies – this is the motive *of the* permanent *monument, which is intended to recount for coming generations the festive act and the event celebrated."*[36]

The actors on the Attic stage dressed in the Chiton and the bedecking of the scaffold apparatus of the stage with carpets, garlands and canopies are drawn together into a conception of architecture as giving permanence to these transient phenomena. In this formulation, the material and structural character of the parts is veiled and masked in order to deny its reality in favour of an idea.

"The denial of reality, of the material, is necessary if form is to emerge as a meaningful symbol, as an autonomous human creation."[37]

For Semper, the epithelial layer of paint applied to the constructional ground of the Greek temple constitutes an annihilation of the underlying materials. He describes the dual depictions on the pediments of the Parthenon by Phidias as a masking. However, it is not merely a material masking because the dramatic suppression of any highly demonstrative expression constitutes a second masking.

"Evidently he considered his task, the representation of the double myth and its actors (the deities), as the subject matter to be treated *(as was the stone in which he formed them), which he veiled as much as*

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[35] Gottfried Semper *Der Stil I*, p.227 from Harry Francis Mallgrave *Gottfried Semper: Architect of the Nineteenth Century* (New Haven and London: Yale University Press, 1996)) p.293

[36] Harry Francis Mallgrave *Gottfried Semper: Architect of the Nineteenth Century* (New Haven and London: Yale University Press, 1996) p.299

[37] Ibid., p.300

possible – thus freeing them of any material and outwardly demonstrative expression of their nonpictorial and religious-symbolic nature. Therefore, his gods confront us, inspire us, individually and collectively, first and above all as expressions of true human beauty and grandeur. "What's Hecuba to him?"[38]

I am reminded of Robert Lowell's evocation of a religious statue which "expressionless, expresses God."[39] It suggests an ecstatic state where, stripped of all particularity, we are taken outside time and place to something that happens everywhere, always. For Semper, this denial of the material can only occur through complete mastery of its technical characteristics.

For us, the commission to design a façade for ordinary housing stock in London, made first of all for Olympic athletes, has brought many of these issues together; the façade conceived as a dressing that embodies and perpetuates the festival event, the problematic relationship between the intrinsic properties of a building and their external manifestation, the interplay between truth-telling, technical excellence and masking, the impossibility of creating a common store of images representing instituted agreed-on values and the abstract, disconnected nature of the design and production of buildings. In response we set out to create a temporary festival structure that will endure long beyond the transient event and become an ordinary part of the architecture of the city. In addition, since the commission separated the façade from the underlying constructional and organisational order of the building, this invited questions about the relationship between this screen and the hidden identity of the core. It gave us the opportunity to consider the nature of the external representation of our collective experiences as well as the representation of intrinsic organisation and materials. Semper's concern with the relationship between human social experience and the forms of manufacture was articulated at a key moment in the nineteenth century when the advent of industrial culture was undermining the integrated relationship between collective experience and the way that we represent it through making. Today such disintegration is multiplied. The abstract, separately articulated process of design and manufacture that that we encountered in this commission has its correlative in the globalised, disembodied nature of the whole Olympic festival, in which a only tiny proportion of those who witness the event are even present.

For Botticher, it was important that the *Kernform* and *Kunstform* were conceived simultaneously and that one was not an arbitrary or wilful appendage to the other.[40] It was certainly not his intention to propose a literal separation between the inner constructional logic and its external manifestation. Semper proposed a destruction of the material and constructional identity of a work of art or architecture in favour of the manifestation of an enduring social idea that would transcend the particular. While engaging with these theories, we recognise the distance we have travelled from the ideal of collective experience embodied in the materials and manufacturing techniques directly at hand. The world that brings our building into being is

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[38] Semper, Gottfried *Der Stil I*, p231-2 n.2 from Harry Francis Mallgrave *Gottfried Semper: Architect of the Nineteenth Century* (New Haven and London: Yale University Press, 1996) p.301

[39] Lowell Robert 'The Quaker Graveyard at Nantucket' which, in turn, refers to Isaiah 53:2. "He grew up before him like a tender shoot, and like a root out of dry ground. He had no beauty or majesty to attract us to him, nothing in his appearance that we should desire him." From Mary Ann Steane *The Architecture of Light, Recent Approaches to Designing with Natural Light* (London and New York: Routledge, 2011) p.203

[40] Harry Francis Mallgrave *Gottfried Semper: Architect of the Nineteenth Century* (New Haven and London: Yale University Press, 1996) p.219

characterised by a fragmentation of the relationship between human experience, materials, means and the way we represent these in public space. Our difficulty was how to represent the fully embodied ideal while recognising its impossibility.

Our questions over the nature of representation are not new. Modernism is characterised by a retreat into materials and processes in the absence of a shared language of images.[41] However, the dilemma for architects working today is a compounded one, both the profound disruption of the means to directly represent materials, processes or constructional order, together with the absence of a viable language of shared images. And yet we must go on representing. Historically this constitutes a condition of aporia that cannot simply be resolved by a retreat into older certainties, but the dilemma can itself be represented.

The prison of repetition

Having abandoned ancestral authority, Modernism in art and architecture is predicated on the idea of a new beginning through the representation of a work's own origins. By positing a tabula rasa, or originary emptiness, it might be possible to construct a new introspective system of representation in which the work manifests its own intrinsic process of becoming. The avant-garde valued originality and therefore sought to express the moment of creation above every other property of the work of art.[42] The representation of the moment of creation and the materials and processes of becoming constitutes a figurative system in its own right. Rosalind Krauss identified originality as a safeguard.

"For originality becomes an organicist metaphor referring not so much to formal invention as to sources of life. The self as origin is safe from contamination by tradition because it possesses a kind of originary naïveté."[43]

Krauss identifies the grid as one persistent figure in avant-garde Modernism that exemplifies the conception of origins and its difficult relationship with duplication. She suggests that the grid is both a figurative manifestation of the fundamental material basis of a work (the woven canvas) and at the same time it lays claim to prefigure the work through its reference to all its previous manifestations in other works. She writes, "The grid's power lies in its capacity to figure forth the material ground of the pictorial object, simultaneously inscribing and depicting it."[44] Therefore the grid operates both as a metaphor for origins and as a material and conceptual duplication. This can also be true for construction. By inscribing the material of the façade with a grid we create a figure that embodies its organisational and material identity, but we also allude to every other grid employed in other works. In Krauss' terms, this constitutes an endless regression of references.

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[41] "Abstraction is parasitic on likeness, however much achievement in abstraction may depend on fighting that conclusion to the death. The 'non-figurative' happens because the world no longer falls into an agreed order of images, or one not overlaid with lies." T.J. Clark *Farewell to an Idea: Episodes from a History of Modernism* (New Haven and London: Yale University Press, 1999) p.364

[42] Rosalind E. Krauss *The Originality of the Avant-Garde and Other Modernist Myths* (Cambridge, Massachusetts: MIT Press, 1986) pp.156-7

[43] Ibid., p.157

[44] Ibid., p.158

These paradoxes, at the heart of Modernism, come close to some of the difficulties brought up by this building project. Using the figure of the grid to represent the fundamental material basis of the work is a strategy intended to signify origins but it creates a prison of duplications.[45] The paradox is heightened in this project where the intrinsic internal properties of the building are conceived separately from their external representation. The façade is a screen inscribed with lines and figures that claim to signify an independently conceived tectonic order, its own material identity and the regressive figure of the grid itself. By representing a grid on the surface of the building we deliberately engage with a stereotype. The effect we are seeking is one of indifference, distance, even of anaesthesia.

Krauss describes the grid's resistance to narrative. It denies the organic relationship between parts in favour of the organisational geometry of the grid itself and it is highly resistant to development.

"The absolute stasis of the grid, its lack of hierarchy, of center, of inflection, emphasizes not only its anti-referential character, but - more importantly - its hostility to narrative…….for the grid has collapsed the spatiality of nature onto the bounded surface of a purely cultural object." [46]

The grid therefore has the effect of removing things from history and from their natural relationship with the world. In that sense, it is an appropriate figure within which to represent ideas of abstraction and deracination. Figures or images organised in a grid lose some of their particularity. By duplicating figures and arraying them within a grid-like matrix we take away their individual identity and replace it with another quality associated with hypnotic repetition. This is what Andy Warhol did with his repeated stereotypical figures. He was looking for distance, or a kind of numbness. "When you see a gruesome picture over and over, it doesn't really have any effect."[47]

The visual language of abstraction constitutes a flight from the figurative, but it has its own handwriting. The closer abstraction gets to a point of apparent origin or silence, the more we are aware of the stereotypical figurative language of abstraction itself. Sol Lewitt's *122 Variations of Incomplete Open Cubes* is a histrionic, absurd playing out of the endgame of abstraction in which every permutation of a three dimensional grid-like figure is arrayed in a deadpan fashion. Andy Warhol, by serially arraying stereotypical images, acknowledges the impossibility of abstraction, but as he does so he undermines the special power of images by repeating them within an abstract matrix. The imaged is staged, but stripped of the ability to impose its subject matter on our consciousness. Both artists appear to be seeking a representation of the aporia brought about by our flight from the figurative into an apparently autonomous language of abstraction. Abstraction becomes its own figure that exists only in relation to its opposition to an older agreed language of images which has been emptied of its power to communicate shared meanings.

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[45] "And just as the grid is a stereotype that is constantly being paradoxically re-discovered, it is, as a further paradox, a prison in which the caged artist feels at liberty." Rosalind E. Krauss *The Originality of the Avant-Garde and Other Modernist Myths* (Cambridge, Massachusetts: MIT Press, 1986) p.160 Footnote repeated check???

[46] Rosalind E. Krauss *The Originality of the Avant-Garde and Other Modernist Myths* (Cambridge, Massachusetts: MIT Press, 1986) p.158

[47] Andy Warhol interview with Gene Swenson *Art in Theory 1900-1990* (Cambridge MA & Oxford: Blackwell Publishers, 1992) p.732

"To escape the crisis of representation, reality loops around itself in pure repetition"[48]

In our own project, we chose to make duplications of sections of the Ionic frieze from the Parthenon and to array them on a grid-like matrix inscribed on the façade of the athlete's housing. These carvings had two important properties for us; they are lost and they are stereotypes. By duplicating them using a purely digital medium, they become twice lost and more completely stereotypical. It was our intention that the stones would be staged in a state of suspension, stripped of their spatial, material and temporal context. On the face of it they seem to make a generalised connection to the Hellenic origin of the Olympics, but the connection slips if you examine it. They embody the desire to represent something directly without actually doing so. Eventually what they do signify is their own predicament.

Night in the Museum.

Once the screen had been conceived, we needed to obtain a series of consents to progress with the project. The Design Review Panel had to be satisfied that the facade would conform with the master plan guidelines, the Lend Lease project management team had to agree to build it, and the British Museum had to give consent to create and use digital scans of the Parthenon Stones.

In our presentation to the Design Review Panel we resisted the idea set out in the brief that the Athletes' Village was a continuation of a tradition of creating London streets and squares by designing independent facades. In the older tradition, first used in Place des Vosges in Paris, the façade was conceived as a scenographic backdrop to the square, behind which individuals could buy plots and develop their own houses organically. The façade brought unity to the piecemeal development behind it, where difference could be allowed because it was concealed from the principal public space. In the Athletes' Village the idea is inverted. Unity exists at the level of the standardised core-form of the 'chassis' and the facades were commissioned as an attempt to invent variety in the presentation of the buildings to the principal public spaces. Both ideas are scenographic, but the first imposes unity on variety while the second imposes a histrionic variety onto homogeneity. We argued that the façade should not attempt to suggest a complex inner order where none exits but to create a continuous lattice without an edge, top, bottom or centre and it should carry upon it a random array of duplicated figurative panels.

When we met the project managers at Lend Lease we presented a drawing like a spreadsheet, showing how the constructional parameters could be managed within a grid system where every variable could be altered in relation to another. The façade was made from grid dimensions, concrete mix, panel size, depth of relief, degree of undercutting, panel variety, depth of reveals and so on. In order to manage cost and time we could alter any variable in relation to another. If the windows are over budget, you could make the relief more shallow, reduce the panel mix or any other permutation. We savoured the performative aspect of this matrix, particularly the fact that those parts of the construction process perceived as most hostile to design integrity had been incorporated into the design concept from the outset.

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[48] Baudrillard 'The Hyper-realism of Simulation' *Art in Theory 1900-1990* (Cambridge MA & Oxford: Blackwell Publishers, 1992) p.1050

The shared discussions between the Design Review Panel and Lend Lease had a fascinating theatrical character. At their most compelling you could see the three-legged race between capital and shared values being run in front of your eyes. On one occasion, the chair of the Design Review Panel decided that every building should be redesigned to have a base, middle and top in order to demonstrate the principle of a shared visual language. We explained that this decree would undermine our fundamental strategy of staging a lattice without centre or boundary. The critics politely asked if we could introduce just a suggestion of base, middle and top. When we resisted the project manager suddenly interjected, “You! Base, Middle, Top! By Monday! Or we’ll put them on it for you.” On reflection, I advised my team to make these additions for Monday because I knew we were meeting the cost consultants on Wednesday and they would remove them again. So our building had a BMT for all of three days.

We contacted the British Museum and spoke to Ian Jenkins, the Keeper of the Stones. He acknowledged that there was no copyright and promised to help us as much as he could. He arranged for us to get nocturnal access to the Duveen Room at the British Museum where the stones are kept. We arrived in the darkness with our team of photographers and scanners. We scanned the stones in the small hours, surrounded only by cleaners and security guards. The event had an almost magical quality for all of us. It felt like a moment out of time.

I arrived at the Museum with a schedule of stones that I wanted to scan. I was especially interested in the vesting of the himation and the folding of the peplos. I was working towards a conceptual scheme based on ideas of veiling and vesting. As the team were scanning the first stones, I wandered across the room and became distracted by one particular horseman whose hidden leg reappeared behind the horse to show the palm of his foot facing the viewer under the horse’s belly. The soft sculpting of the arch of the foot captivated me and I loved the sense the turned foot gave that the rider was gripping the horse with his thigh and calf muscles. I had been up in the night with my own baby son and I had a strong sensual memory of holding him over my shoulder with the sole of his foot in the palm of my hand. I became absorbed in this lovely stone foot and went searching the frieze to see if there was another. At this point, Ian Jenkins came in to see how we were getting on. Of course he knew this foot and its only other partner on the other side of the frieze. Seizing his opportunity, he started to persuade me to abandon my conceptual schemes and to loose myself in the horses.

It was a privilege to be taken around the stones by Ian Jenkins. His description of the frieze was guided by a persistent musical metaphor. He illuminated the powerful spatial, rhythmic construction of the representation of the procession. Starting from the northwest corner of the Parthenon, the increasing sense of forward movement, interspersed with structured spaces, gestures and repeating postures. All the time he kept coming back to the horsemen. “I know you have lots of ideas Niall, but the people of London will love the horses.” I would come back to my ideas and he would listen carefully then patiently lead me back to the horses. It was a wonderful, gentle piece of persuasion. Within an hour, I had instructed the scanners to move across the room and focus exclusively on fragments of the processing cavalry. In retrospect, I like this still moment in the project, in the middle of the night, when the building found its defining characteristic. From then on we had a lost troop of horsemen, constantly processing, endlessly, rhythmically, captured in the weightless mesh of the constructional lattice. Seen in musical terms the duplication of fragments from

the continuous flow of the procession and their redeployment on a previously inscribed surface could be analogous to digital sampling. A conceptual strategy had emerged into a poetic idea. We had a project.

An army in the Fens.

Professor Tom Lomax and Chris Cornish digitally scanned the chosen fragments of the frieze. They used a standard projector linked to a laptop that cast gridded and striped patterns on to the stones. A tripod mounted DSLR digital camera recorded the patterns crossing over the surfaces. Since the position of the camera and the projector were definable, it was possible to use them to plot a third point in space. The accumulation of these points traced the surface of each cast. This data was relayed back to the laptop where a 4D Dynamics programme converted it into legible 3d digital surfaces. The scans were pieced together using Rapid Form software.

The file was edited in our office to solve any problems relating to the direct transfer of the surface into a cladding panel. We had to work out a viable ratio between the depth of the relief and the surface of the panel. The new panels are ten times the surface area of the older stones but the depth of relief available is the same. Increasing the depth of relief created significant cost and constructional challenges. We had to consider any upward facing ledges where water might become trapped to avoid weathering problems. We altered the model to get rid of any inward sloping surfaces on the upward-facing edges. We had to set a datum for the surface representing the constructional grid that frames all of the panels. We looked at different options but eventually set it at zero so that the panels projected forward of the surrounding frames. This gave the frames a slightly pressed or embossed quality and the panels seemed to project out into the space in front. Doing this meant that the relief of the panel was projected onto the structural frame when the sun casts shadows. When a panel is edited or cut, you see a section through the cut line set forward of the line of the building. In addition, we had to set a datum and surface texture for any gaps where the stones had been broken or cracked leaving a void in the originals. We aspired to a series of judgements that would be conceptually legible but leave the panels appearing natural in their setting. The slightly rugged, three-dimensional quality of the completed building is a result of these small decisions made at the scale of the digital file.

The digital information was exported to Metworks, the 3-d digital manufactures, who used Master CAM software to convert the information into tool paths for a CNC routing machine. This modelled the 3d surface onto high-density foam blocks. One particular challenge at this stage of the process was to persuade the contractors to use a company that employed a 5-axis routing tool rather than the more conventional 3-axis tool. The 5-axis tool is capable of creating undercuts in the modelling to match the original sculptor's undercuts and therefore enhancing the overall visual legibility of the panel. The 5-axis company were cheaper but had not worked with the contractor before and so had no established track record for delivery. For a while it seemed that contractual risk management would have its own manifestation on the façade. At this point, our prepared posture of stoic indifference to contractual contingencies was abandoned and we lobbied high and low to get the 5-axis router.

The positive relief panels were assembled into storey-high panels by gluing sections together. In a resolutely digital process it was impossible to achieve a seamless joint between sections without a certain amount of highly skilled manual filling and hand sanding. Those with a very keen eye can still see minute traces of the joints within the panels if the light is coming from the right direction. The panels were then taken to Leicestershire where a company called Patterns & Moulds used the high-density foam to make rubber latex casts. The digitally manufactured positive had been converted into a latex negative.

The precast panels were made by a firm called Techcrete in Lincolnshire. The concrete mix was specified to closely match Portland Stone. Each concrete panel was cast with one horizontal and one vertical section of the framing grid attached. Thus the production process beautifully undermined the conventional separation of frame and panel. For us this conflation was a happy accident that reinforced the idea that the whole façade is a representation delaminated from the constructional core. The panels were cast in sheds but moved outdoors into yards after a few days of indoor curing. The white panels were held vertically in rough wooden frames awaiting transportation. They formed long enfilades arranged in rows like a waiting army. The white ranks of cavalry had a spectral quality in the wintry Fens.

The concrete panels were driven to site in low loaders and hoisted up to their position in the matrix. Foam insulation was attached to the back and they were hung using metal brackets. Powder coated aluminium windows and glass reinforced concrete balconies were attached to the frame afterwards. We had little idea what the panels would look like once they were seen on the scale of the building. I arrived for the first time before dawn. As the sun rose, it cast oblique light across the north facade and the array of horsemen seemed to switch on like a projection. An hour later the early sun had moved away and the horses were like faint grey tracings on the concrete.

A great blankness

The design and construction of the Athletes' housing was an attempt to express certain dilemmas associated with modern building culture. There is an ideal of a society that draws upon its own local resources to make buildings through shared labour and consequently these buildings manifest the possibilities and limitations of available materials and represent commonly held ritual practices. This persuasive concept was cultivated by Romantics like Goethe in the late eighteenth century and developed into a coherent system of assumptions by nineteenth century architectural writers like Pugin, Ruskin and Morris. The power of the idea lay in its resistance to the abstract, deracinating character of social modernism, which was beginning to emerge in the Industrial Age from 1800. As the systems of production and consumption became increasingly detached from the lives of ordinary people, the apparent coherence of this pre-industrial model was held up as an emblem of resistance. Since the industrial manufacture of goods disrupted fundamental human habits, these newly manufactured artefacts were perceived to be false and, in contrast, works using traditional craftsmanship and natural materials were assumed to have a truth-telling capacity. These ideas were originally presented in a polemical fashion and were seen by their protagonists as a revolutionary act of resistance to the debasement of human culture. Soon however, such

ideas became internalised by wider culture and were perceived as having a self-evident quality. However, if these idealised systems of production from an imaginary prelapsarian age were held up as ideals in a time that employed very different means of production, the internal contradictions following on from that were likely to manifest themselves as some form of impasse.

These contradictions are often concealed in the twentieth century manifestations of modernism because the literal attachment to traditional materials and manual manufacture was replaced with intoxication with industrial techniques. However, many aspects of the original assumptions had been sufficiently internalised that they seemed self-evident and beyond contradiction. The rules and syntax for design with industrial materials contain an older order of assumptions that are rooted in a Romantic critique of social modernism. Structural integrity, truth to materials and the built manifestation of place are treasured although they interrupt the free deployment of goods and labour central to social modernism.

Avant-garde architects of the 1920s were enthralled by the scientific analysis of manufacturing espoused by Taylor among others. They believed engineering to be rational and implicitly truth telling because of its perceived scientific basis. The abstract, dispassionate analysis of materials and labour processes was bound to yield an authenticity in buildings that allowed them to escape the entanglements of historicism. Buried in this ambition was an assumption that buildings and cities produced by rational processes would yield a society amenable to rational management. The Romantic assumption that work produced by skilled handiwork from materials that lay close at hand had a truthful quality was conflated onto the new infatuation with engineering processes and industrial materials. The medieval mason and the modern engineer were both heroic types of their own times, far removed from architects in thrall to aesthetic cults.

Goethe's figure of the medieval master mason embodies an imagined resolution of two closely interlinked problematic aspects of representation. In the first, architectural representation was conceived as a showing out of the intrinsic properties of a construction. The grammar of representation was evolved around a manifestation of possibilities and limits relating to environmental and constructional matters. The advent of new industrialised materials, processes and systems created a crisis because it gradually undermined the natural limits that gave rise to the grain and texture of older buildings. The relationship between built form and constructional limits began to erode. The second crisis belongs to the stability of external representations. The Enlightenment dissolved the fixed external order to which all figurative representations could refer. The shared cosmic, social and political order became fragmented and it was no longer possible for buildings to carry representations that situated them within an indisputable framework. Looking to the future in 1848, Karl Botticher foresaw a "great blankness."[49]

During two decades at the start of the twentieth century, we witness an almost complete abandonment of external figurative representations in favour of a manifestation of the intrinsic properties of construction. Of course the figurative continued to assert itself at other levels of architectural representation; ships, bridges, vehicles, aircraft, landforms and bodily organs lie, thinly suppressed, close to the surface of modern building forms, but the direct deployment of figurative representations on the lattice of the construction was virtually

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[49] Karl Botticher

abandoned. Instead the building form was expected to directly manifest the rational processes and undisguised materials required for its own construction. At the heart of this is a naïve idea that truth slips the knot of representation. It constitutes a deus ex machina for the deep crises initiated by the Enlightenment of what buildings should represent. Perfect transparency became a convention for perfect truth. By telling the truth, they represent nothing other than themselves, but this creates a tautology; I am what I am.

The problems with complete transparency are both technical and conceptual. In the first instance, the increasingly laminated nature of modern construction prevented the honest showing out of core construction. In the second, the pure state of transparency is highly unstable. This fugitive figure was entirely vulnerable to any other representation. Thus the paradox is complete, the figure of transparency, conjured to resist the abstract deracinating forces of social modernism and therefore capital, is the figure least capable of resistance.

Enlightenment thinking is founded on abstract analysis and, as a natural consequence; there was no embodied ground out of which to create architectural representations. Kenneth Frampton has argued that the wholesale appropriation of classical building forms was used to stand for progress and rational thought.[50] Classicism as an exemplar, the grid as an origin and the mechanical instrument as a representation of rational processes, are persistent tropes in the avant-garde discourse of the 1920's. These figures exist as ghosts clouding the ideal of a transparent realm proper for intrinsic manifestations.

If buildings underwent a crisis of identity, so too did the architect. When Le Corbusier imagined the strange foreman directing tasks, he created a figment to stand for the unspoilt intellect at the empty place of origin, able to speak truthfully about rational processes. The problem is that Le Corbusier is up to his neck in metaphors. In identifying himself with the strange foreman he embodied these paradoxes. He was both the perfectly rational agent of objective order and the weaver of myths, transparent and yet alive with associations. The instability of the relationship between transparency and meaning was loaded onto the figure of architect. Le Corbusier did not attempt to resolve this dilemma; instead he suppressed it by creating an ecstatic synthesis; the truth-telling architect, stripped of figurative baggage, employing only abstract management processes to embody the values of a wide community. This was not sustainable. It is a figure highly vulnerable to the operations of social modernism. He imagined the architect in the higher realm of planners, guaranteeing synthesis in a Taylorised process. Soon enough the activity of architectural design itself became Taylorised and subject to oversight by managers and planners who made a higher claim to dispassionate analysis.

We chose the dispersed fragments of the Parthenon because they embody these difficulties. Le Corbusier saw the Parthenon as the refined coming together of separate fragments, honed to perfection by abstract selective processes. For him it was an ancient emblem of a synthesis he imagined could be made possible in a new age of reason. I see the contemporary power of this building, not in its becoming, but in its dissolution. The deep, contingent connections of community and place that allowed this building to emerge and change through generations were broken when it was treated as an abstraction. It was idealised and deracinated all at once and, broken into pieces, it entered the modern age. In their detached state the

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[50] Homo Faber

fragments had enormous power to carry new significations. Siteless, they were endlessly duplicated and used to stand in for an ideal of synthesis in an industrialised society predicated on the precise and calculated separation of things from the mesh of their becoming. The nineteenth century architects, who made London anew, adorned their plain housing stock with gimcrack casts of these antique sculptures, creating an absolute separation between the intrinsic properties of the construction and a representational system embodying the aspirations of an emerging middle class. *"Nothing can be more noble or magnificent and at the same time so absurd"* John Soane said of Nash's caryatids on Whitehall Palace.[51]

We digitally copied fragments of the cavalry on the stones and arrayed them randomly in a grid formation on the façade of the athlete's housing. By subjecting these figures to the matrix of the grid we intended to suppress their original rhythmic linear organisation. We hoped to emphasise their deracinated character but also to make something strange and beautiful. We were looking for a quality of weightlessness, distance, even eeriness, in the way that they hovered between windows, balconies and the ordinary stuff of London apartment life. The Ionic Frieze on the Parthenon establishes a clear linear development existing in time with a marked beginning and an end. Our lost troop of horsemen process endlessly, hypnotically, as if on an edgeless carousel. I wanted them to attest to the proposal that architecture does not need to suppress paradoxes. It can represent them.

The Panathenaic procession was an event dedicated to dressing the cult statue of Athena with a veil called the Peplos. The frieze depicting the procession begins with a man dressing himself and ends with the folding and putting away of the ritual garment. All along the procession people are handling, arranging and adjusting their clothing. At the climax of the event, the goddess Hera extends her arm to hold out her veil.[52] For Semper, the underlying frame of a building is dressed, or bedecked, in a fabric which bears representations of the hidden construction and the ideals of the society that brought it into being. In dressing ourselves, we show what we would like to seem to be. The modern avant-garde conceived of an impossible fictional garment for buildings, it was perfectly transparent so that they could seem to be what they truly are – "off with your coats and be what you seem."[53] This denies what Semper knew and what theatre enacts; we make masks and representations and we become what they are.

Architects working today are doubly bound, the fiction of transparency, or honesty, is more and more difficult to sustain in a system where technical demands delaminate the building's materials into increasingly specialised layers and where Taylorised management separates design into discrete particles of expertise. At the same time, there is no stable external order of figures that can claim to embody the ideals of an increasingly attenuated society. I suggest that the contemporary architect must rely on a form of irony in order to practice. Fernand Hallyn describes irony as "a representation of reality whose eventually fictive nature I recognise, but which I decide to employ as if it corresponded to reality."[54] In conjuring the horsemen on a screen we do not claim that they embody a better, prelapsarian age; in arranging them within a grid we offer no authority to origins or order. Any architect today might ask how to continue making pieces of the

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[51] Joseph Rykwert *The Judicious Eye: Architecture Against Other Arts* (London: Reaktion Books, 2008) p.391
[52] SB?
[53] Friedrich Nietzsche 'Untimely Meditations' from Daniel Breazeale ed. *Cambridge Texts in the History of Philosophy* (Cambridge: Cambridge Univeristy Press, 1997) p. 84
[54] Fernand Hallyn *The Poetic Structure of the World: Copernicus and Kepler* Trans. D.M. Leslie (New York: Zone Books, 1993) p.21

world without a common consensus about what that world should represent and the answer might be, in the words of Samuel Beckett, “you must go on, I can’t go on, I’ll go on.”[55]

[55] (SM,M)

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