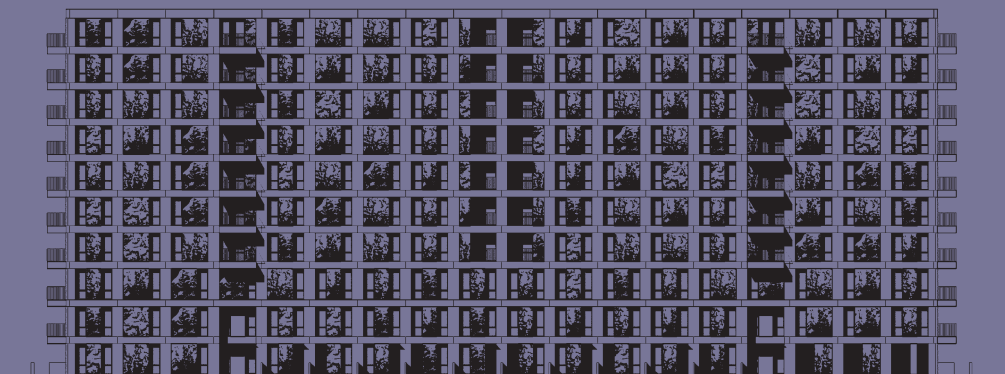


Block N15 Façade, Olympic Village



by Níall McLaughlin Architects

Project Details

Practice: Níall McLaughlin Architects

Designer: Níall McLaughlin

Níall McLaughlin realised this project through his practice Níall McLaughlin Architects.

Title: Block N15 Façade, Olympic Village

Output type: Building

Function: Housing

Location: Stratford, East London

Client: Olympic Delivery Authority

Practical completion: April 2011

Budget: £18 million (N15 cores E&F)

Area: 9,200m²

Main contractor: Lend Lease

'Chassis' architects: Glenn Howells

Structural engineer: Robert Bird

Services engineer: Hilson Moran

Subcontractors: Pre-cast concrete: Techrete;
3D scanning: Sample and Hold with Tom Lomax;
Windows/doors: Dane Architectural Systems;
Balconies: CMF;
Lightweight cladding: Dane Architectural Systems





Statement about the Research Content and Process

Description

The project is part of the wider regeneration of Stratford for the London 2012 Olympics. Níall McLaughlin Architects were appointed to design a façade to clothe a building core developed by Glen Howells Architects. The façade is arranged as a grid of relief castings, which sample fragments of the Elgin Marbles. The panels were produced from digital scans of the scenes from the original frieze in the British Museum, enlarged and re-cast in concrete.

Questions

- 1. To ask how architecture can convey meaning within the abstracted and Taylorised methodology of contemporary procurement structures.**
- 2. To explore themes of representation and decoration for the two projected lives of the building, one as an embodiment of the temporary festival event and one as a permanent addition to the fabric of the city.**
- 3. To explore the use of digital software and fabrication to produce cladding panels for a multi-storey building.**

Methods

The research methods for the project were wide ranging and included:

- 1. Text-based research to examine the history of the making and dispersal of the Parthenon Frieze.**
- 2. Analysis of 19th- and 20th-century modes of representation (Semper, Botticher, Nash, Krauss, Warhol, LeWitt).**
- 3. Experimentation with new styles of drawing to communicate research ideas through spreadsheets and time-based scores.**
- 4. Experimentation with digital methodologies for scanning and enlarging sections of the Elgin Marbles.**
- 5. Working through prototypes to refine the manufacturing process for the façade panels.**

Dissemination

The façade for Block N15 has been the subject of a refereed article for *Archithese* and several lectures by McLaughlin in the UK and the University of California, Los Angeles, USA. It has been extensively reviewed in the architectural press, including in *Architectural Review* and *Architects' Journal*.

Statement of Significance

The façade for Block N15 won the British Precast Concrete Federation Creativity in Concrete Award (2012).







3

2 (previous page)
The façade of the
Athletes' Housing

3
The façade panels
being lifted
into position

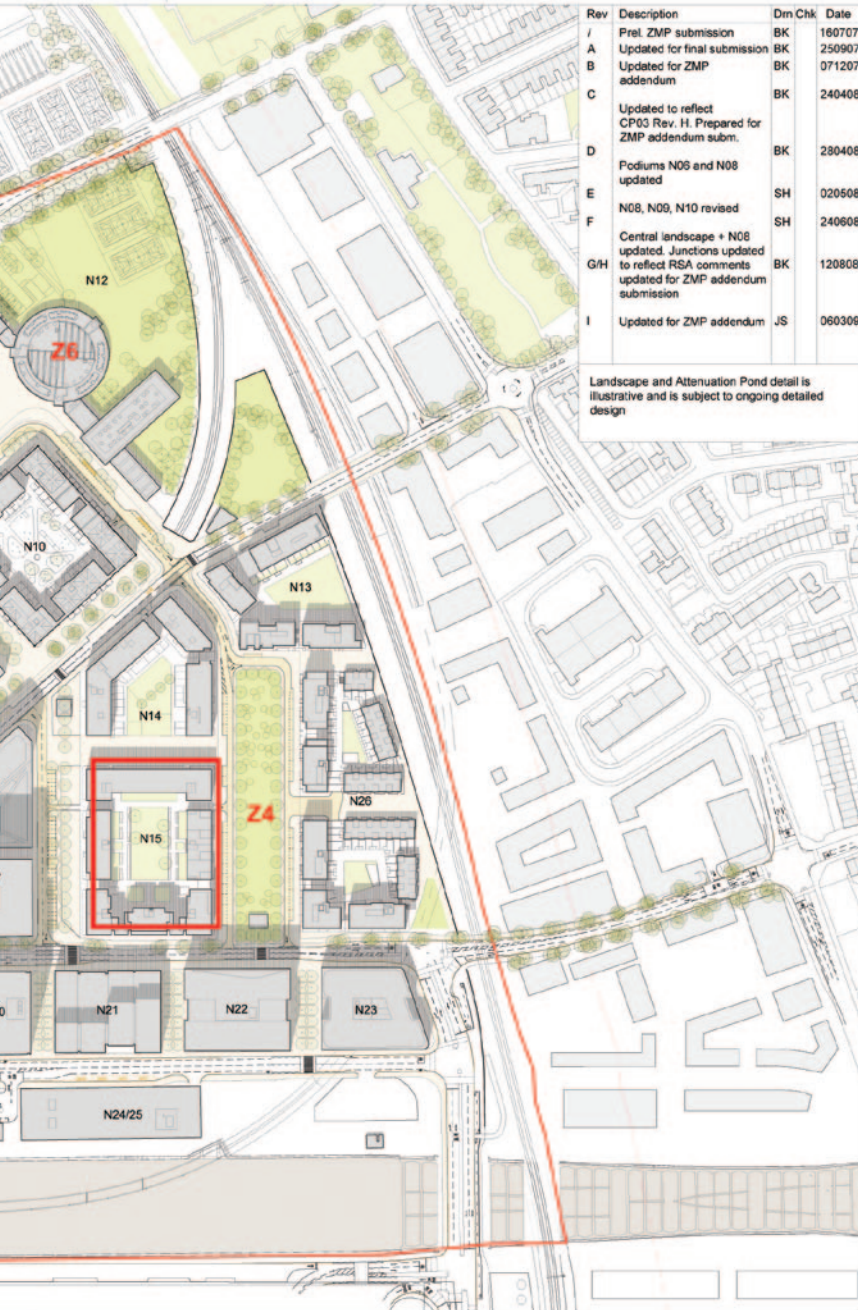
Introduction

The athletes' housing for the London 2012 Olympics was designed to a standardised model with an identical internal layout, structure and services for all 2,800 homes. The uniformity was a means of creating maximum efficiency for the developer Lend Lease, who had undertaken to deliver the Olympic Village for the Olympic Development Authority. The developer took on the money and time risks and expected to make a profit on their investment of capital and expertise. However, the Olympic Development Authority also wished to promote its own values through the process. London's bid to house the games had been in part successful because of a commitment to use the infrastructure of the games to create a new urban quarter. There was discomfort as to whether such standardisation would leave behind a

positive urban legacy and a desire that the Olympic Village would be a shining demonstration of good design to the rest of the world. In response, Lend Lease instructed their architects to appoint practices as sub-consultants to design façades for the already standardised 'chassis'.

Against this backdrop, Níall McLaughlin Architects were commissioned by Glen Howells Architects, to design the façade for Block N15. The practice celebrated the paradox at the heart of this commission with a façade arranged as a grid of relief castings, which sample fragments of the Elgin Marbles. The panels were produced from digital scans of the scenes from the original frieze in the British Museum, enlarged and re-cast in concrete.





4
Master plan of athletes housing (Stratford city zonal master plan zones 3-6 by Fletcher Priest Architects)
 Fletcher Priest Architects



Aims and Objectives

This research project for the design and construction of the façade for the athletes' housing was an attempt to express the dilemmas of architecture 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. The procurement of the Olympic project held up a mirror to how far removed modern building culture has shifted from this position. The façade for Block N15 aimed to attest to the premise that the contemporary architect must rely on a form of irony in order to practice. This

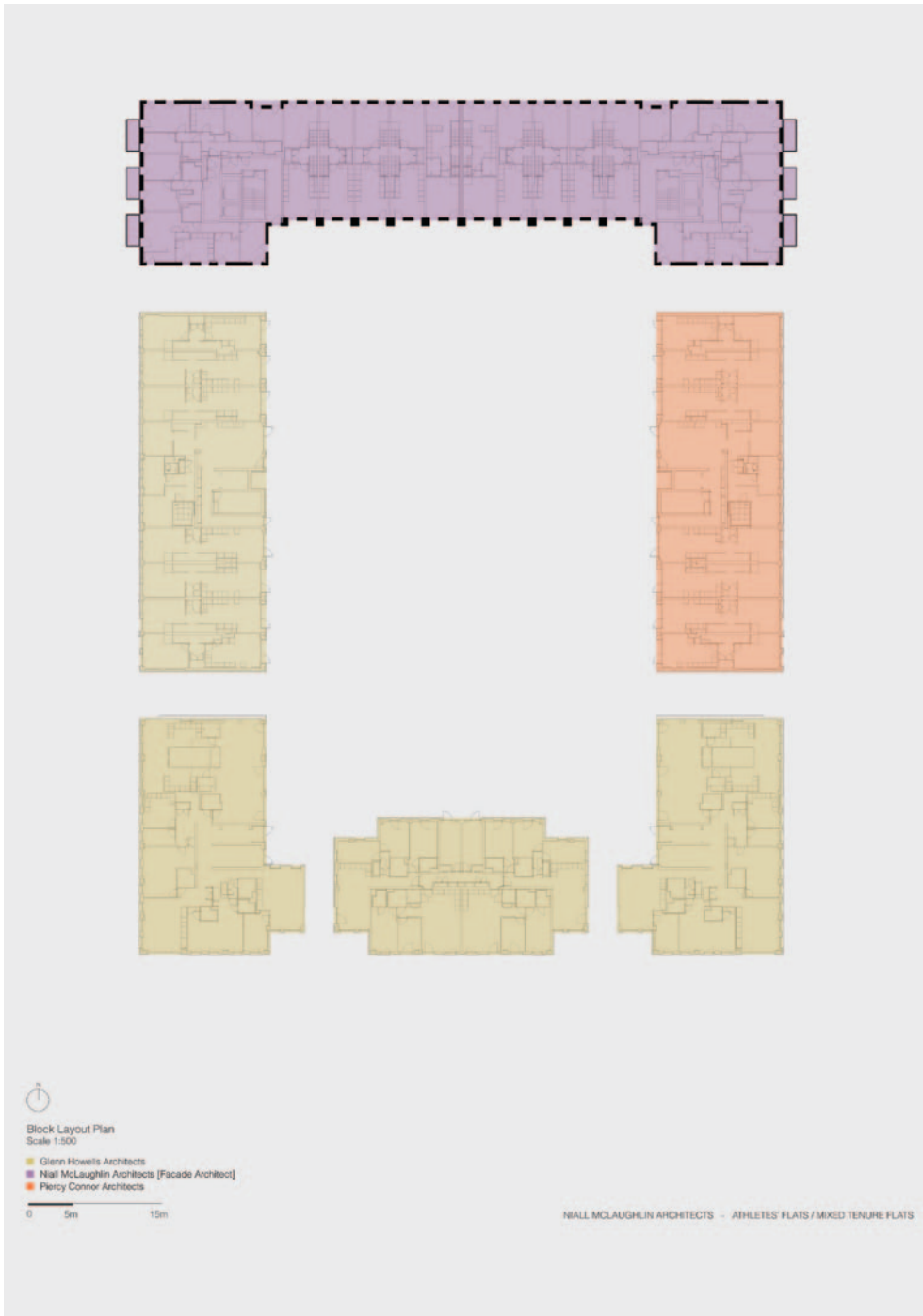
seems to be an authentic mode of representation for the present day. Fernand Hallyn describes irony as 'a representation of reality whose eventually fictive nature I recognise, but which I decide to employ as if it corresponded to reality' (Hallyn 1993). In conjuring the horsemen on a screen we did not claim that they embodied a better, prelapsarian age; in arranging them within a grid we offered no authority to origins or order. The project aims to ask how an architect today might continue making pieces of the world without a common consensus about what that world should represent. An answer, in the words of Samuel Beckett, might be, 'you must go on, I can't go on, I'll go on.'

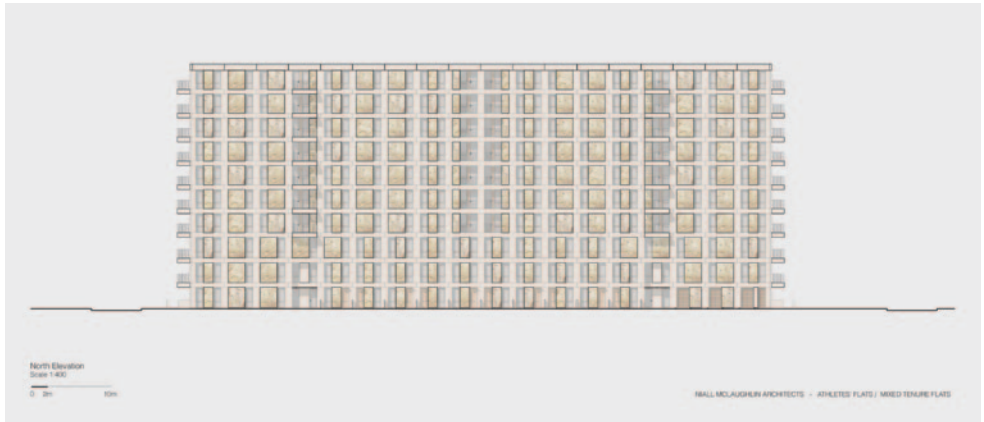


6

5
**The façade on the
standardised chassis**

6
A façade panel





8



9

7
**Ground-floor plan
(block N15 in purple)**

8
**North elevation
drawing**

9
East elevation drawing

Questions

To ask how architecture can convey meaning within the abstracted and Taylorised methodology of contemporary procurement structures.

We accepted the commission to design only the façade of a pre-ordained building core-form because we recognised that it 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.

The method of separating the design of structure from that of the skin illustrates a coming together of cultural aspiration and rational management practices. 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, which creates

a particular working tension in the development of buildings that is comparable to two characters running a three-legged race.

The project offered an opportunity to ask how architecture can convey meaning within this Taylorised methodology of contemporary procurement structures. We sought to understand and represent this particular condition equivocally in a way that understood its origins, freedoms and difficulties. [fig. 12–14]

To explore themes of representation and decoration for the two projected lives of the building, one as an embodiment of the temporary festival event and one as a permanent addition to the fabric of the city.

The development of the Olympic Park as a whole was designed in such a way that it would make a festive statement for the big event but have a longer life as a new urban quarter with housing for a mix of tenure types. The project challenged us to explore appropriate forms of representation for the two projected lives of the building, one as an embodiment of the temporary festival event and one as a permanent addition to the fabric of the city.

We chose the dispersed fragments of the Parthenon because they seemed to embody these paradoxes of representation.



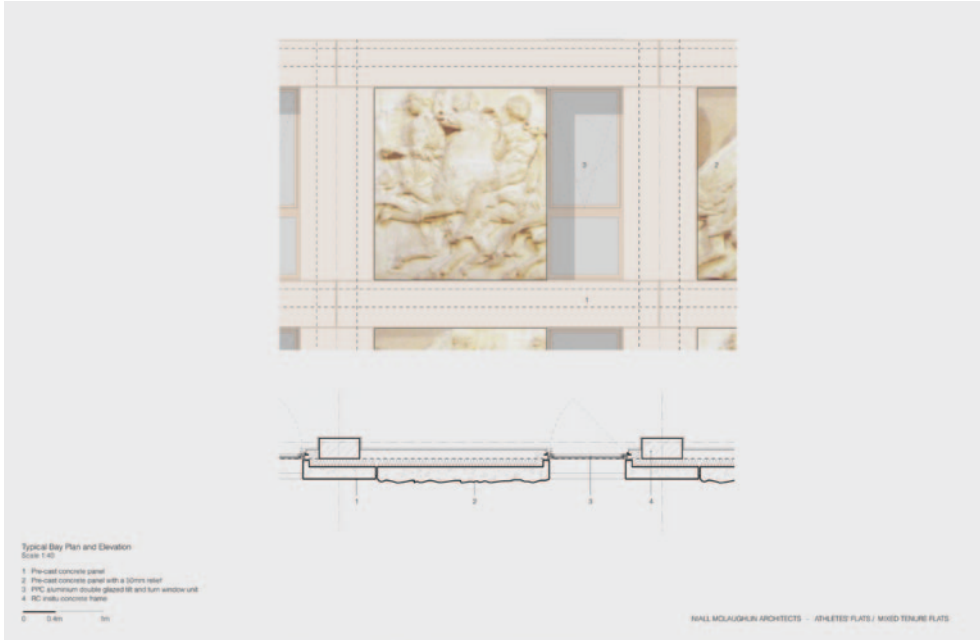
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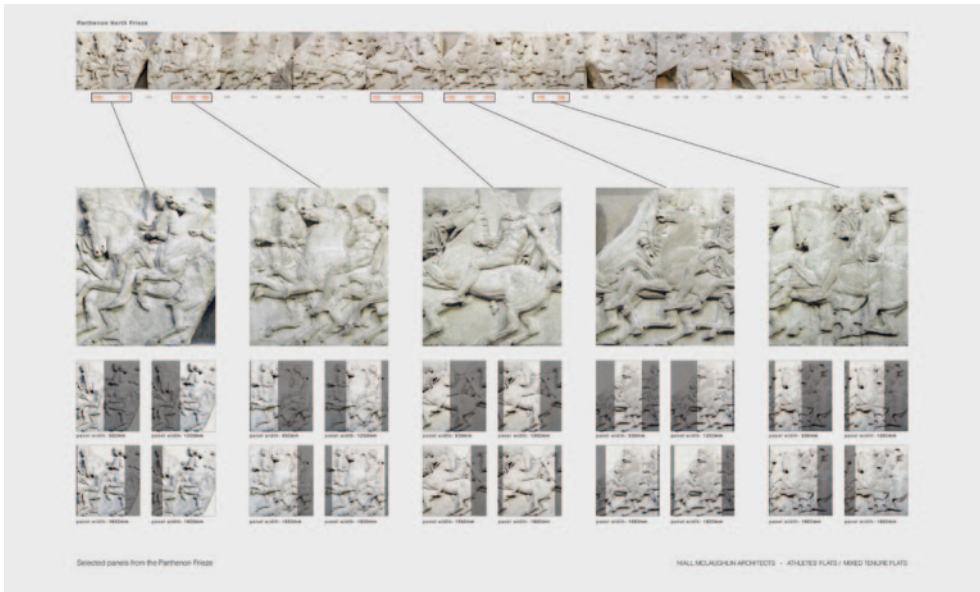
10

10
Young man dressing
in a himation, west
frieze, slab XLVII,
British Museum

11
Folding away the
peplos, east frieze,
slab V, British Museum



12



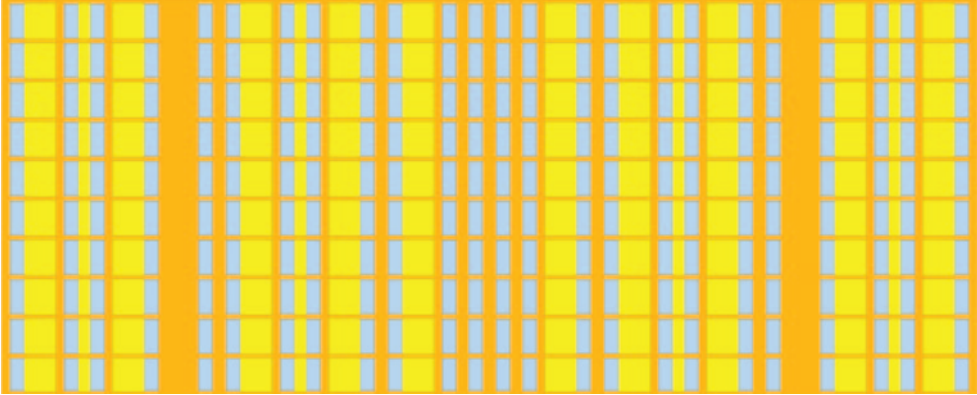
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12
The skin of
the façade

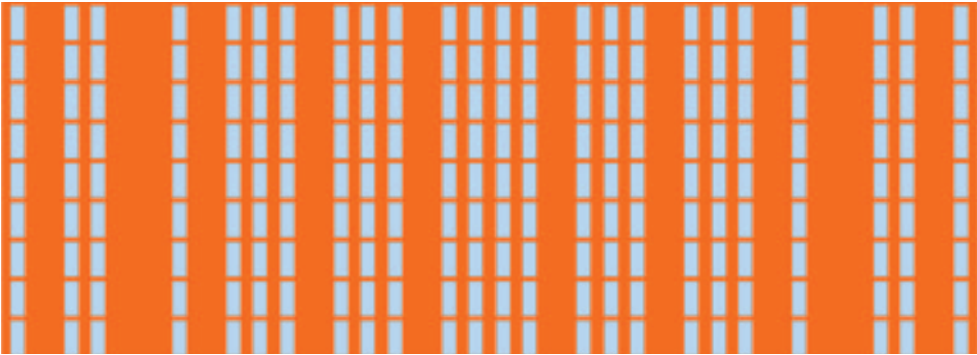
13
Selected panels
from the frieze

14
Façade panels





15a North Elevation



15b South Elevation

15
Níall McLaughlin
Architects,
spreadsheet drawings
of the south and
north elevations of
the Athletes' Housing

16
Clothing the façade

The subject matter of the frieze relates to a wider research interest in the history and significance of the screen in architecture, through the writings of Gottfried Semper. The Panathenaic procession that the frieze depicts was an event dedicated to dressing the cult statue of Athena with a veil called the peplos. 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 (Semper 2004). In dressing ourselves, we show what we would like to seem to be. What Semper suggests is what the theatre of the Panathenaic procession enacts; we make masks and representations and we become what they are. [fig. 10 & 11]

For the dressing of Block N15 we hoped that in subjecting these figures to the grid of the pre-ordained building core we would emphasise their deracinated character, and also make something strange and beautiful. We wanted them to attest to the proposal that architecture does not need to suppress paradoxes. It can represent them.

The use of repetition and the grid were key aspects of the project. We studied examples of 20th-century architecture and art that emphasise the grid and the role of repetition in their production and final manifestation, in particular works by Andy Warhol and Sol LeWitt. [fig. 15, 18 & 19]

To explore the use of digital software and fabrication methods to produce cladding panels for a multi-storey building.

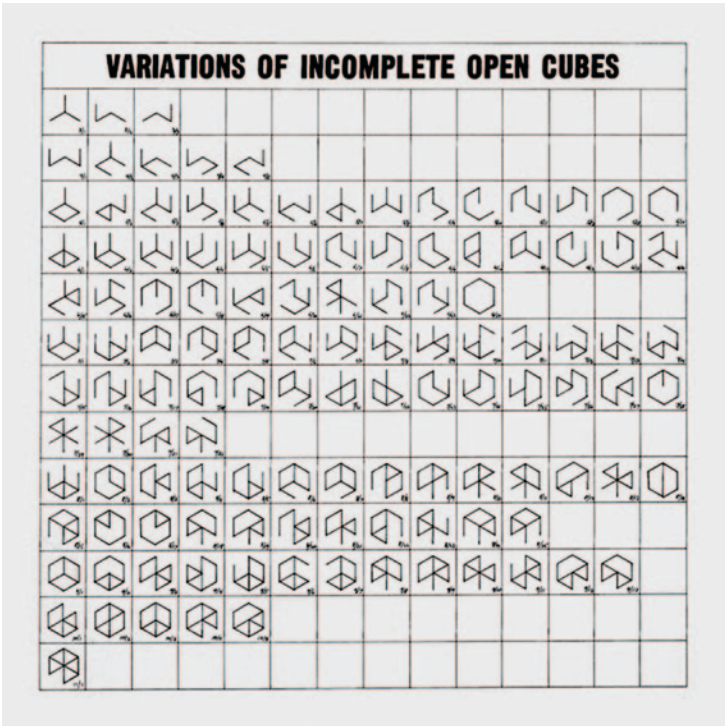
For the production of the cladding panels a thorough process of digital scanning, editing and pre-cast manufacturing was followed. This is explained in detail under the section Methods.







18



19

17
The grid of
the façade

18
Andy Warhol,
Marilyn Diptych (1962)
© 2015 The Andy Warhol
Foundation for the Visual
Arts, Inc. / Artists Rights
Society (ARS), New York
and DACS, London

19
Sol LeWitt,
122 Variations of
Incomplete Open
Cubes (1974)
© ARS, NY and DACS,
London 2015



20

20
John Nash, Regent's
Park, London



21

21
The Athenaeum Club,
London

Context

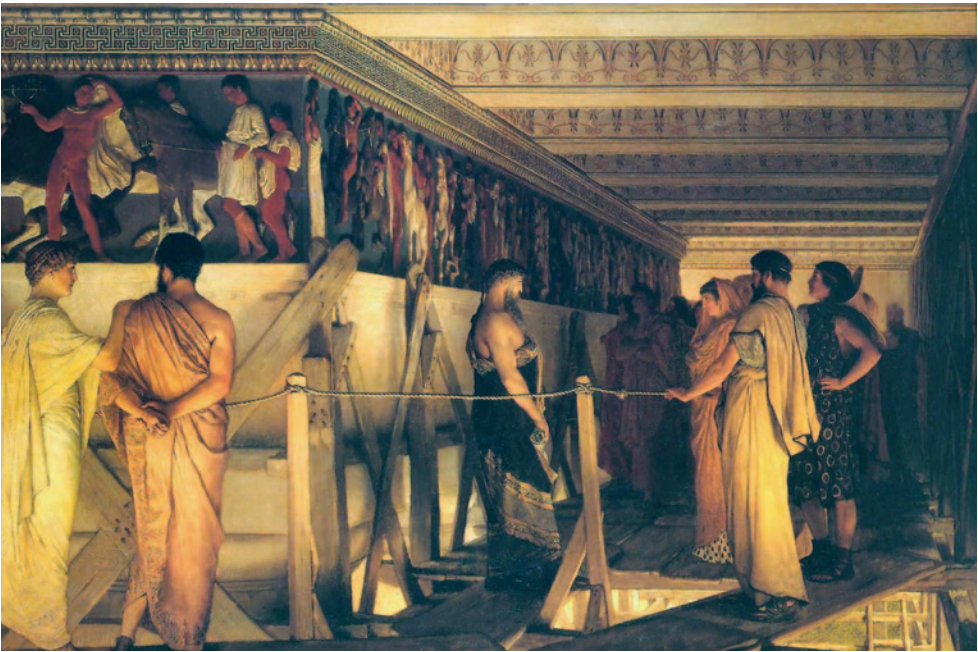
The history of the Parthenon Stones provides the framework and context for this research. The stones have been re-used and re-imagined in this project to reflect the themes of representation of the day. In charting the history of the stones we tried to develop a position for architecture to hold meaning within the contemporary context.

The fragments of the frieze, once in a detached state and scattered round the world, held enormous power to carry new significations. In the 19th century, 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 19th-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. [fig. 20 & 21]

For Le Corbusier in the 20th century, the Parthenon was the refined coming together of separate fragments, honed to perfection by abstract selective processes. The famous pairing of the Parthenon with an automobile in Le Corbusier's *Vers Une Architecture*, published in 1923, 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. With this image and others Le Corbusier strips the Parthenon of its complex authorship, its entanglements in the loam of its origins and its identity as the built manifestation of rituals. He replaces it instead with an abstract system of parts held up against a generalised idea of nature. For him, the spirit of Taylor and Henry Ford was alive in the Parthenon. [fig. 24 & 25]

We saw the contemporary power of the Parthenon, 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. The modern avant-garde conceived of an impossible fictional garment for buildings, which was perfectly transparent. However, that 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.



22

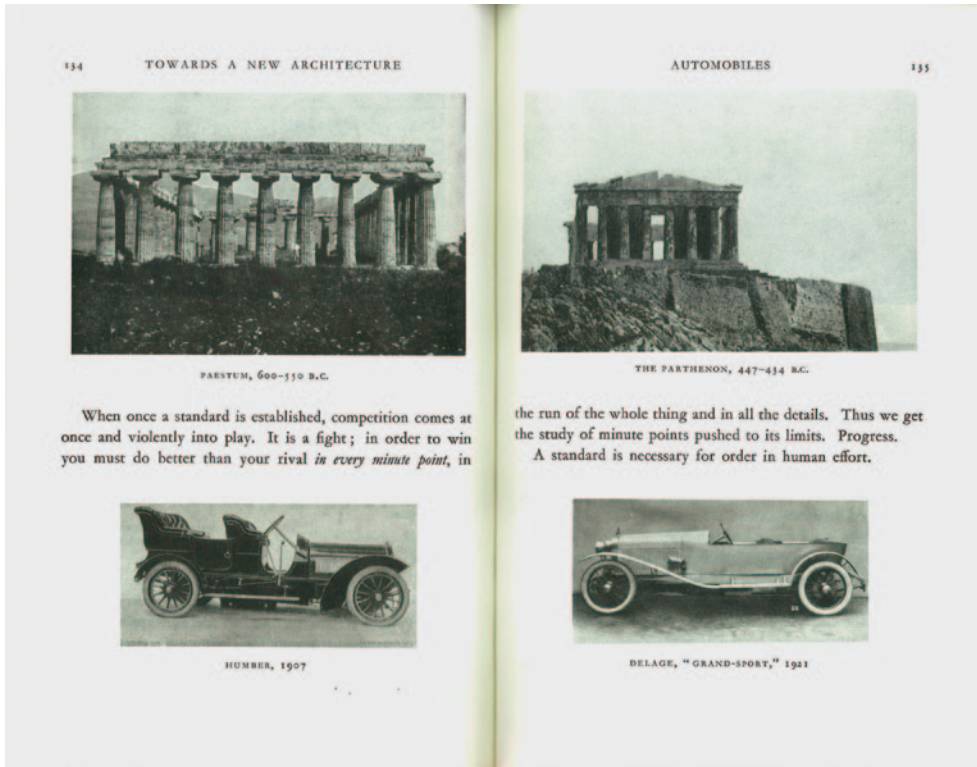
22
Sir Lawrence
Alma-Tadema,
*Phidias Showing
the Frieze of the
Parthenon to his
Friends* (1868)

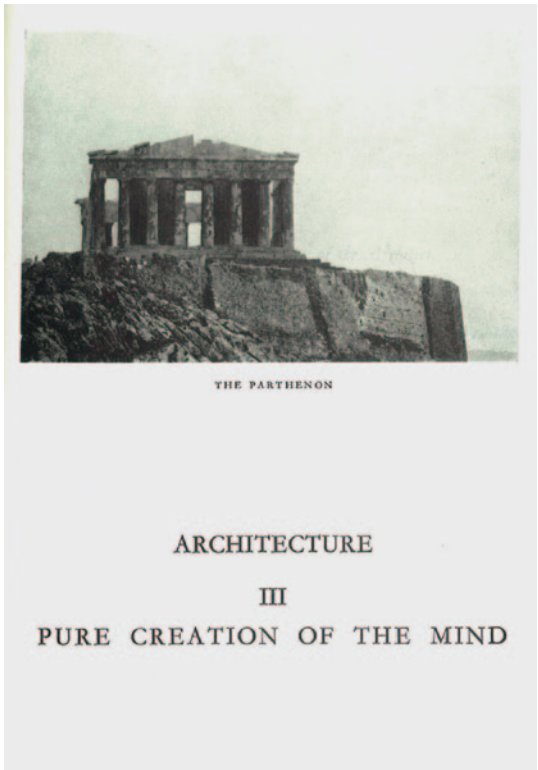
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23

23
**The Parthenon
Stones in the
Duveen Gallery,
British Museum**
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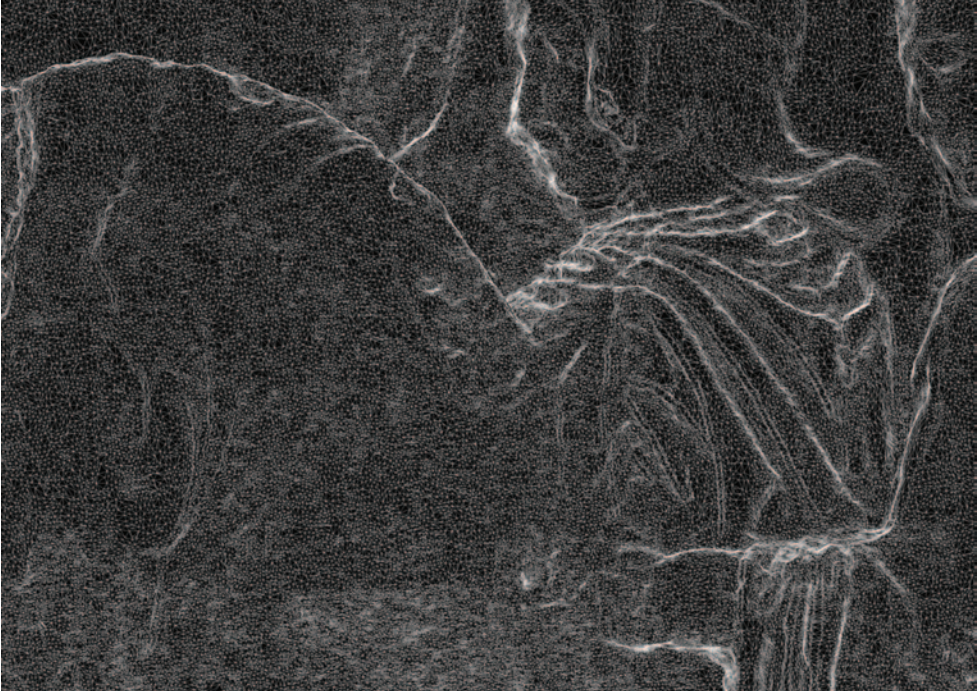
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26

25
Architecture, pure creation of the mind. Le Corbusier, *Vers une Architecture*
 © FLC / ADAGP, Paris and DACS, London 2015

26
parthenon damage under heavily bombarded morosino. Drawing by G.M. Verneda, 1707
 Jenifer Neils, *The Parthenon: From Antiquity to the Present*, (Cambridge: Cambridge University Press, 2005, p. 321, ill. 116).
 Published with permission of Cambridge University Press



27



28

Methods

The research methods for the project were wide ranging and included:

1. Text-based research to examine the history of the making and dispersal of the Parthenon Frieze.
2. Analysis of 19th- and 20th-century modes of representation (Semper, Botticher, Nash, Krauss, Warhol, LeWitt).
3. Experimentation with new styles of drawing to communicate research ideas through spreadsheets and time-based scores.
4. Experimentation with digital methodologies for scanning and enlarging sections of the Elgin Marbles.
5. Working through prototypes to refine the manufacturing process for the façade panels.

The project offered the opportunity for new forms of technical research as we explored the best means for translating the fragments of the frieze into pre-cast cladding panels. First we digitally scanned the chosen fragments of the frieze.

A standard projector cast gridded and striped patterns onto the stones and a tripod-mounted SLR digital camera then recorded the patterns crossing over the surfaces. This data was relayed back to the laptop, where a 4D Dynamics program converted it into legible 3D digital surfaces. The scans were pieced together using Rapid Form software. [fig. 31–34]

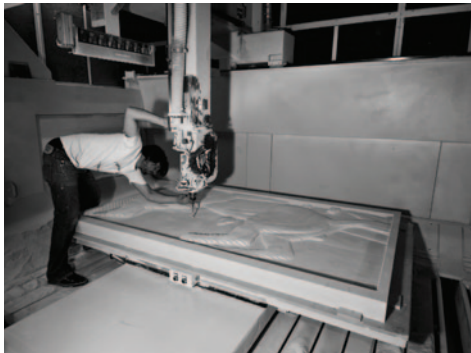
We edited the files in our office. It was necessary to work out a viable ratio between the depth of the relief and the surface of the panel. The new panels are ten times the surface area of the older stones but the depth of relief available was the same. We altered the model to get rid of any inward-sloping surfaces on the upward-facing edges, to avoid weathering problems. In addition, we set a datum and surface texture for any gaps where the stones had been broken or cracked, leaving a void in the originals.

27

The 3D digital scan

28

**Negative rubber moulds
of the frieze sections**





31

29
The 3D surface
routed into
high-density
foam blocks

30
The panels awaiting
transportation

31
Scanning the
Elgin Marbles





33



34





The digital information was exported to Networks, a 3D digital manufacturer, 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. The positive relief panels were assembled into storey-high panels by gluing sections together and were then taken to Leicestershire where the company Patterns & Moulds used the high-density foam to make rubber latex casts. The digitally manufactured positive had been converted into a latex negative.

The pre-cast panels were made by 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. The panels were cast in sheds but moved outdoors into yards after a few days of indoor curing. They formed long enfilades arranged in rows like a waiting army. [fig. 27–30]

Dissemination

The building itself has been widely reviewed both in the architectural and national press. The research has formed the basis for a refereed journal essay, entitled ‘Peplos’, published in the journal *Archithese* (2012). The technical research methods developed in this project, using digital media to produce innovative 3D architectural surfaces, are being further developed in a new project for King’s Cross Central, the new development by Argent. [fig.36&37]

McLaughlin has spoken on themes of representation and the Olympic project, both in the UK and in the United States as an invited speaker at University of California, Los Angeles:

Níall McLaughlin, ‘Tapestries’, University of Bath (Apr 2013)

Níall McLaughlin, ‘The work of Níall McLaughlin Architects’, University of California, Los Angeles (Mar 2013)

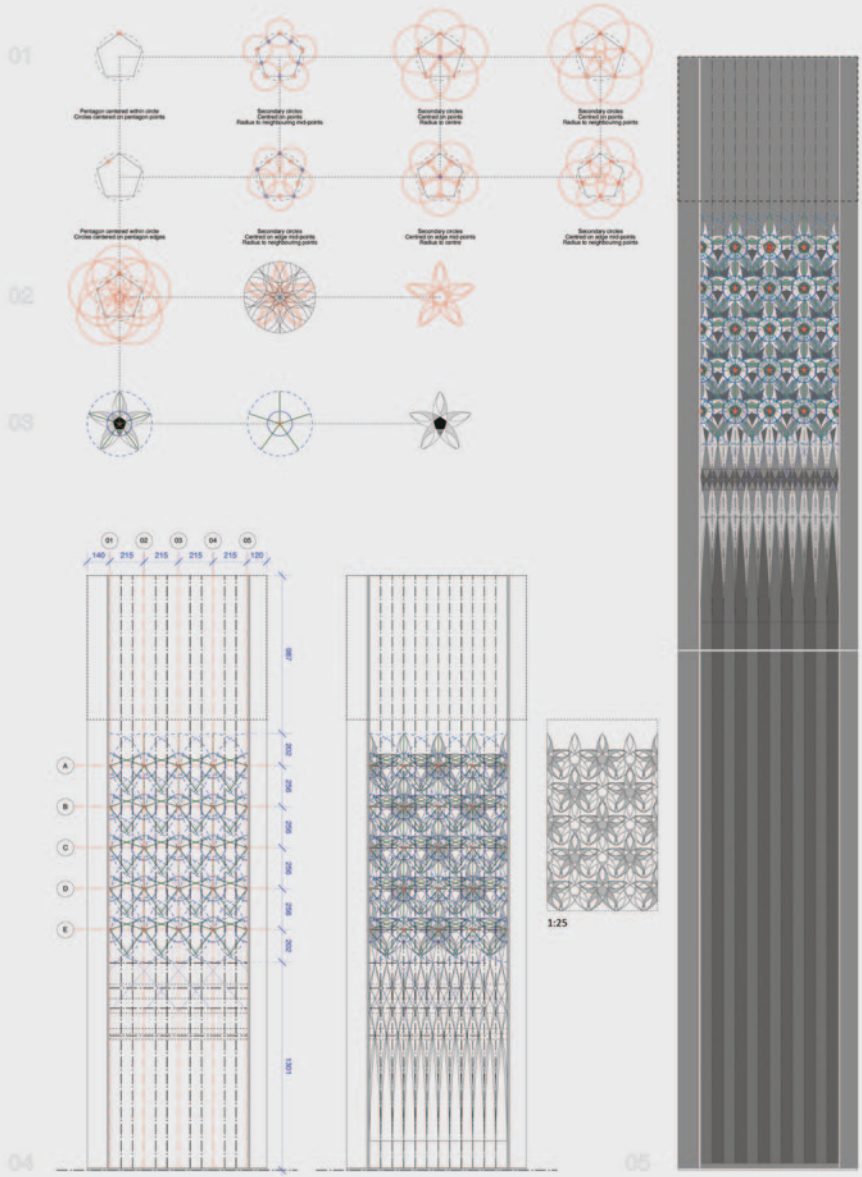
Níall McLaughlin, ‘Authority’, University College London (Mar 2011)

Níall McLaughlin, ‘Figures’, University College London (Feb 2011)

36 (overleaf)
Níall McLaughlin
Architects, ornament
for King’s Cross
Central development,
project ongoing

37 (overleaf)
Níall McLaughlin
Architects, view
of apartments for
King’s Cross Central
development

Capital - Floral Element, 1:20





View of No. 1 Canal Reach Apartments
Looking towards the tallest point of the block, one can see the relationship between the woven quality of the balconies and the chevron fluting of the plasters that culminate in a floral abstraction at the Capital.







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pp. 46–51

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Alice Willoughby, 'A race against time'. *ADF Architect Data File* (Nov 2012): 22–28.

pp. 60–61

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www.nftu.co.uk/2012/08/02/east-is-east-the-athletes-village-and-the-elgin-marbles

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Sue Blundell, 'The Parthenon and the Olympics: Parthenon frieze stars in the London Olympics'. *Classical Association News* (Jun 2012): <http://sueblundell.com/page8.htm>

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