Sean Griffiths

Output 2: Dara Building (Grote Koppel), Amersfoort, Netherlands, 2009

Abstract

The Dara Building in Amersfoort, Netherlands, makes a significant contribution to Sean Griffith's of FAT Architecture's on-going research into the creative potential of historical reference and repetition, in combination with digital and prefabricated construction techniques to generate new meanings in architecture. The design responded to a number of questions: how can a modern building integrate with and extend the meanings of an historic context? How can differentiation and variety be achieved using repetition? How can precast concrete construction be used to create expressive popular iconography and communicate cultural values about architecture? Can an art-based architectural practice be successful in a market driven environment? Its methodologies included numerous site visits to understand the site's complexity and latent potential, discussions with local planning authorities to get a sense of the Dutch legislation and regulations for historic contexts, and typological research, drawing on the traditions of baroque influenced, gable fronted Dutch architecture. A variety of programmatic solutions, spatial permutations, and the three-dimensional complexity of the building and its surroundings were tested through extensive physical model making and other forms of digital visualisation. The innovative external wall and window panels of the building were generated by drawing and re-drawing, then interpreting these design motifs in digital format, which were then

Key Words

Historical reference, digital prefabrication, repetition, differentiation

transferred directly to Dutch prefabricated concrete manufacturer, Hibex. Griffiths then collaborated closely with the manufacturer to produce the building's signature prefabricated façade panels. The building has been favourably reviewed in the architectural media, including in Building Design, Blue Print and Domus, It is regularly featured in lectures and exhibitions about the work of FAT delivered nationally and internationally including at London Metropolitan University in 2009, the Walker Art Centre in Minneapolis in 2009 and the Strelka Institute in Moscow in 2010. Griffiths was the lead architect from conception to execution on the project.

Context

The Dara Building is a commercial building, commissioned to celebrate the 750th anniversary of the founding of the city of Amersfoort. It was commissioned by Schipperbosch, a Dutch developer who has also worked with MVRVD, UN Studio, Foreign Office Architects and NLarchitects. In it, Sean Griffiths extends themes his research-based practice has pursued for a number of years into the creative potential of historical reference and repetition in combination with digital and prefabricated construction techniques, to generate new meaning in architecture. This continues in a deliberate fashion the work of American post-modernists Robert Venturi, Denise Scott Brown and Robert Stern, and brings postmodernist preoccupations forward into the digital fabrication age.

General Description

The Dara Building is located on an important site on the river Eem, next to the Mediaeval Koppelpoort, a water gate that forms part of the old city walls (fig.04). It is a modern interpretation of the palazzo, a typical building type in old European cities. It houses a restaurant on the ground and first floors and provides flexible office space on a second floor. Its external envelope is made up entirely of precast concrete sandwich panels that provide structure, insulation, enclosure and façade articulation. These were the result of an innovative collaboration with the Dutch concrete company, Hibex with whom Griffiths developed an approach to prefabrication that, whilst making use of its repetitive advantages, incorporated differentiation and allowed for a variety of profiles.

Research Questions

The project addressed the following research questions:

How might a modern building interpret its historic context and add to its cultural meanings?
 How might the advantages of repetition offered by precast construction be used to produce variety and differentiation?

3) How might precast concrete construction be used to create expressive popular iconography and communicate cultural values about architecture?

4) How might an art based architectural practice work successfully in a market driven environment?

Aims and Objectives

1) To integrate a modern building into a complex historic context and add to its cultural meanings.

As has already been stated, the Dara Building was commissioned by a private developer to celebrate the 750th anniversary of the founding of the city of Amersfoort. It is sited at the eastern end of a row of nineteenth century riverside warehouses and modern office buildings (fig.01). It fronts the River Eem and is abutted by a mainline railway bridging over the river (fig.04). This forms the boundary between the historic town centre with its medieval street pattern and city walls and the nineteenth and twentieth century commercial city. Adjacent to the site is a national monument, a mediaeval water gate called the Koppelpoort. The site thus mediates complex and potentially contradictory influences - the river, the fortified mediaeval city, and modern nineteenth and twentieth century infrastructure, all of which needed to be absorbed into the building (fig.08).

Based on research into and knowledge of historical architecture and the development of cities over time, Griffiths opted for a palazzo typology for the building. This urban type typically comprised a principle facade fronting a street or streets, a piano nobile and an interior courtyard. In the Dara Building, this has been translated into a three storied building (fig.05) organised around a central atrium (fig.06), overlooked by balconies and traversed by a theatrically designed staircase that gives it a grand ceremonial quality (fig.03). Externally, the building acknowledges the equivalence of river and railway with public facades fronting both (fig.02). Drawing on the traditions of baroque influenced, gable fronted Dutch buildings, these facades consist of rows of repetitive windows at each floor level (fig. 15). These partially return onto the rear façade, creating a corner element that provides a gateway moment for those arriving by train into the city (fig. 14a, b, c). The rear elevation, relating to the service areas of the building is made of simple black brickwork, contrasting with the two public facades of the building. The baroque influenced window surrounds protrude so that their depth forms the walls of the building (fig. 11). At the top and bottom of each window panel decorative elements are distorted and twisted to create the impression of their reflection in water or that they are melting away (fig. 17, fig. 12). This is heightened by black concrete of the top story, suggestive of a building destroyed by fire. Non- structural, diagonal strut-like elements combine with this to suggest a building either under construction or falling down (fig. 15). The building becomes a narrative for the city, constantly being ruined and rebuilt, and is suggestive of the events that form part of its history.

"The façade, seemingly plastic, is cast in modular concrete panels. Each of these panels, whether dripping in ornamental tendrils or topped with miniature roof gables emerge from a desire to graphically manifest the history of Grote Koppel" (Beatrice Galilee, 2010). 2) To take advantage of the repetitive advantages of precast construction to produce variety and differentiation.

The building exhibits innovative research into the potentialities of precast concrete technology. Its facades are made up of a series of precast concrete panels, each containing a window. These panels are loadbearing and incorporate all insulation, structure and finishes (fig. 12). These responded to the design question posed by the architects as to whether a construction technique that usually demands repetition in both manufacture and expression could produce its antithesis – variety, difference and detailed articulation (fig. 15, fig. 16). This was achieved by placing decorative insets into precast concrete moulds to create different tops and bottoms to the different panels, while using the same basic template (fig.09). This technique gave the building a complex form of visual expression, vertically panelised, yet free flowing in the horizontal direction, repetitive but varied, solidly constructed and yet vulnerable in appearance.

3) To use precast concrete construction to create expressive popular iconography and communicate cultural values about architecture.

The expressive content of the building is embedded in the precast concrete panels, which make up its façade. Seemingly plastic, this façade communicates cultural values about architecture and the city that the building commemorates. Each of the panels, whether dripping in ornamental tendrils or topped with miniature roof gables emerge from a desire to graphically manifest the history of the site. The language, according to Griffiths is a kind of "mannerist futurism" (personal communication) (fig. 19).

4) To translate an art based architectural practice into a market driven environment

The challenge for Griffiths in the Dara Building was how to translate aesthetic intentions and historic sensibilities into the language of a modern commercial development. He did this by focusing his design energies on the detailing of the façade panels, combining structure, insulation and aesthetic intent into a single precast element (fig. 19). This meant that the cost-efficiency of repetition and prefabrication was made compatible with the aesthetic intent of the visual expression and communicative value. The result was a striking building whose external wall was made entirely in a factory, transported to site and erected in six weeks.

Research Methods

In the course of the design of this building, several visits were made to Amersfoort in the Netherlands to understand the site's complexity and latent potential (fig.08). Extensive discussions were held with the local planning officers to get a sense of the local Dutch legislation and regulations for historic contexts. Research undertaken over many years was drawn upon to develop the typology for the building and a palazzo type adopted, drawing on the traditions of baroque influenced, gable fronted Dutch architecture. A variety of programmatic solutions and spatial permutations, as well as the three-dimensional complexity of the building and its surroundings was tested through extensive physical model making and other forms of visualisation. These analyses in turn allowed the refinement of the overall configuration of the building in terms of accessibility, circulation, lighting conditions, external finish, historical references and general functional viability. As well as more traditional forms of model making, or the drawing of plans and sections, the design process relied heavily on programmes like Photoshop and Vectorworks. The project capitalised on the abstraction made possible by contemporary representational techniques; for instance, the innovative external wall and window panels of the building were generated by drawing and re-drawing in Vectorworks, then interpreting these design motifs in digital format so they could be transferred directly to the Dutch prefabricated concrete manufacturer, Hibex (fig. 15-18). Through close collaboration with the company, the system of repetitive prefabrication incorporating differentiation described above was devised (fig. 13). This continued Griffith's continued experimentation

with prefabrication through close collaboration with manufacturers.

Dissemination / Impact

The building has been favourably reviewed in the architectural media, including in Building Design Blue Print and Domus. It was listed as one of the Daily Telegraph's Top 10 Buildings of 2010. It is regularly featured in lectures and exhibitions about the work of FAT delivered nationally and internationally including at London Metropolitan University in 2009, the Walker Art Center in Minneapolis in 2009 and the Strelka Institute in Moscow in 2010. Reviews of the Dara Building in the architectural media include:

Galilee, Beatrice. "Grote Koppel, Amersfoort, The Netherlands." <i>Domus,</i> 17 December 2010	Woodman, Ellis. "Sweet Tooth." <i>Building</i> <i>Design</i> , 10 December 2010, 10-11 (fig.P01).
http://www.domusweb.it/en/architecture/grote-koppel-amersfoort-the-netherlands/	Woodman, Ellis. "Grote Koppel, Amersfoort, by Fat." <i>Building Design</i> , 9 December 2010. <www.bdonline.co.uk></www.bdonline.co.uk>
Woodman, Ellis. "Top 10 Buildings of 2010." <i>The Daily Telegraph</i> , 11 December 2010, R16, R17 (fig.PO2).	<www.bdomme.co.uk></www.bdomme.co.uk>
Evidence	
Images and Drawings	Technical Development
Fig. 01 Site Plan Fig. 02 Ground, First and Second Floor Plans Fig. 03 Long Section Fig. 04 Short Section Fig. 05 Model held up to Site Fig. 06 Façade panel in factory	Fig. 12 Wall build-up sketch, Façade corner detail Fig. 13a, b Corner offset studies Fig. 14a, b, c Corner studies Fig. 15 Panel dimensions Fig. 16 Response to panel prototype photographs Fig. 17 Panel Schedule 01

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Press

Fig. 07 Façade panels being erected

Fig. 10 Corner of building at night

Fig. 08 Façade panel detail

Fig. 09 Canal Elevation

Fig. 11 Internal staircase

P.01 Woodman, Ellis. "Sweet Tooth." Building Design, 10 December 2010, 10-11.

P.O2 Woodman, Ellis. "Top 10 Buildings of 2010." The Daily Telegraph, 11 December 2010, R16-R17.

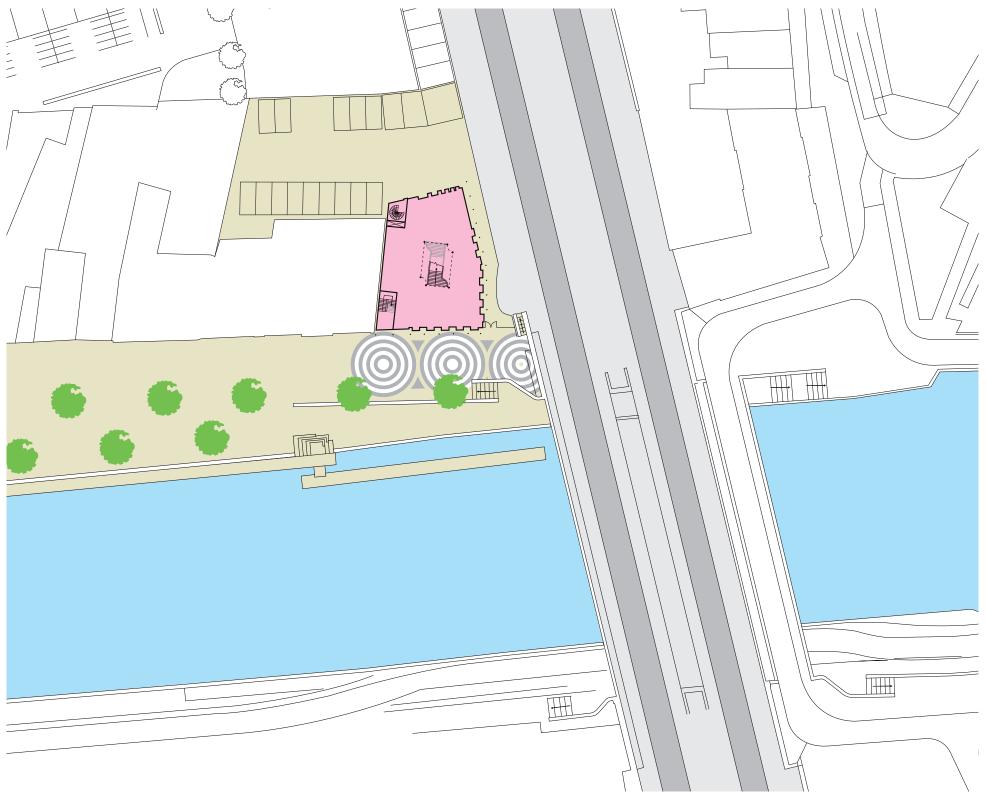
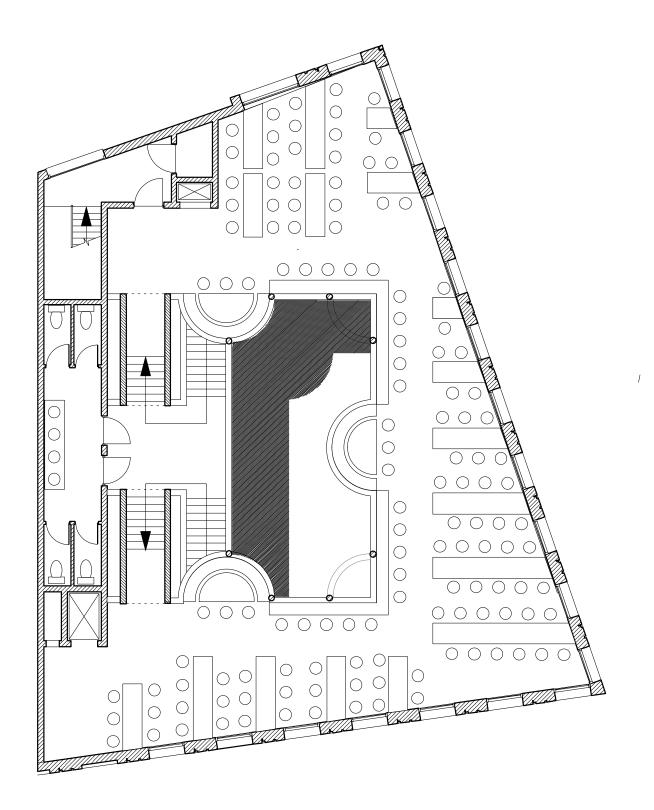
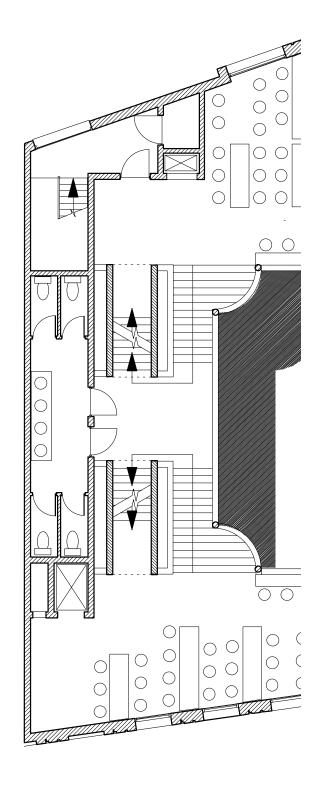


Fig.01 Site Plan

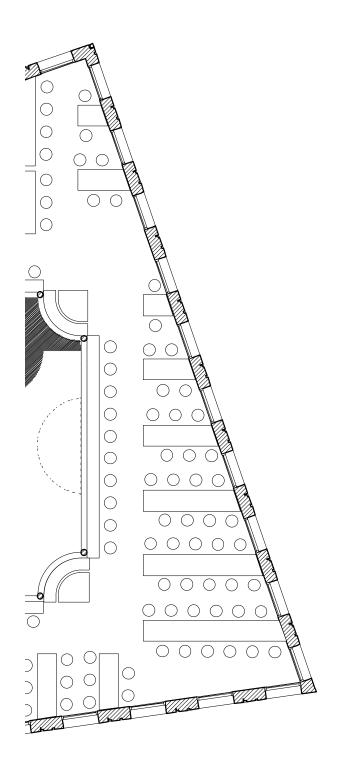


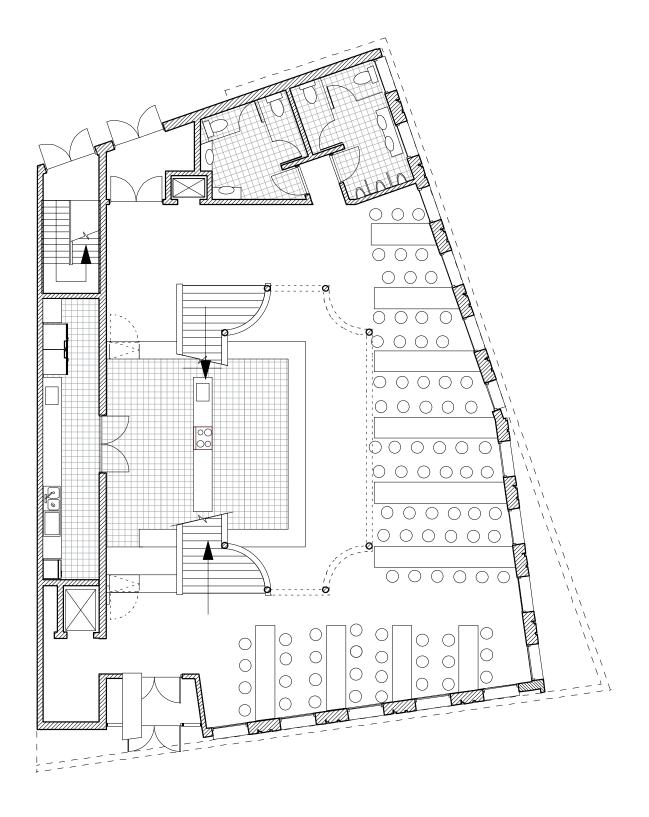


SECOND FLOOR PLAN

FIRST FLOOR PLAN

Fig.02 Ground, First and Second Floor Plans





GROUND FLOOR PLAN

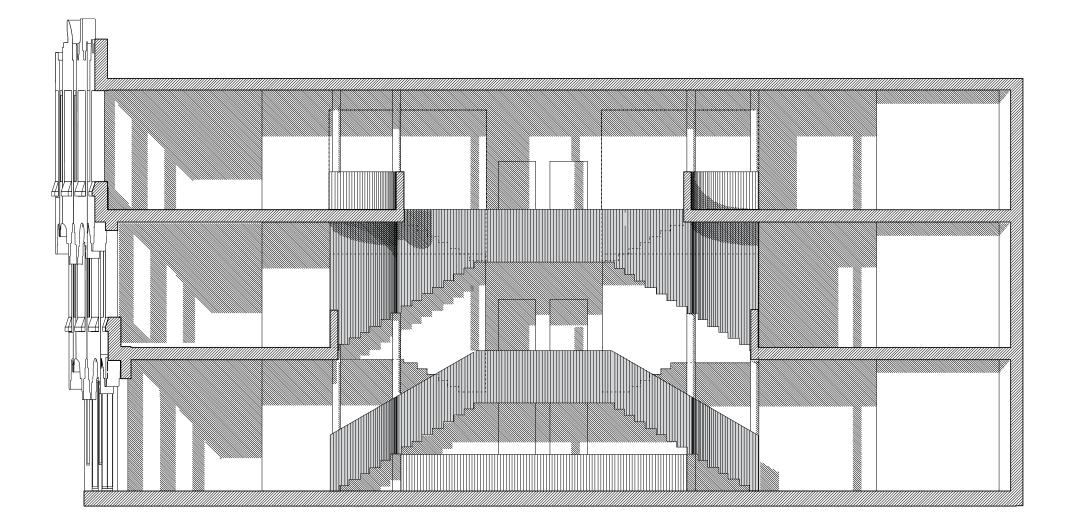


Fig.03 Long Section



Fig.04 Short Section



Fig.05 Model held up to site



Fig.06 Façade panel in factory



Fig.0 7 Façade panels being erected

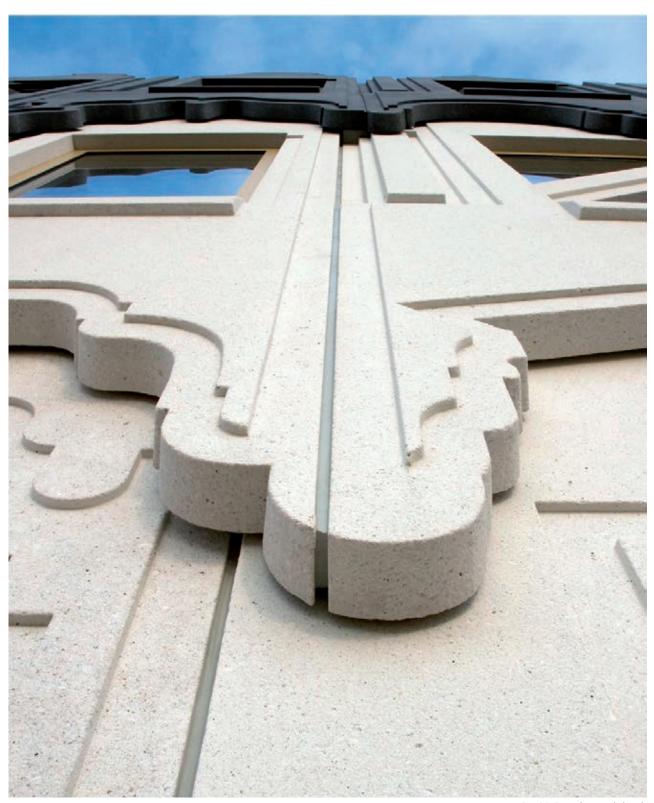


Fig.08 Façade panel detail.







Fig. 10 Corner of building at night

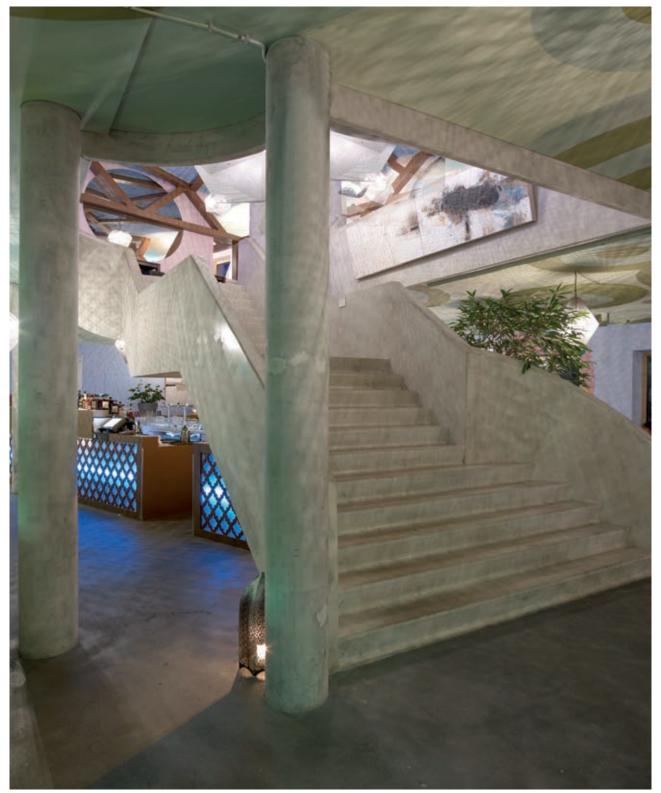
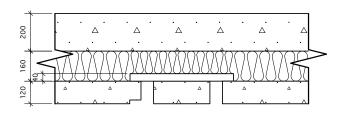


Fig.11 Internal Staircase

Technical Development



facade panel build up prefered option 1 - can this be achieved?

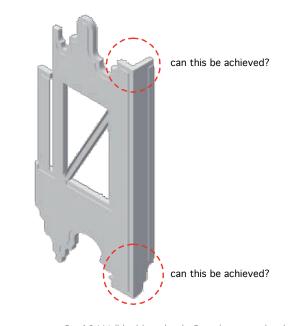
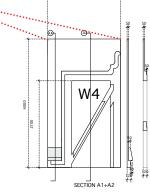
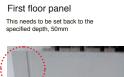


Fig.12 Wall build-up sketch, Façade corner detail









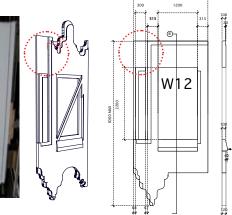
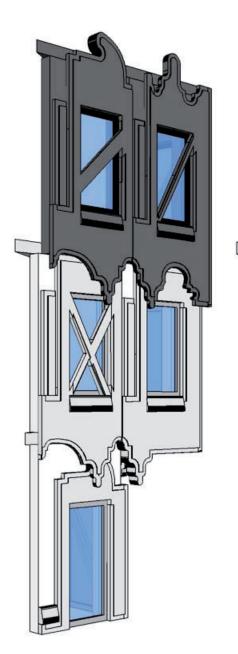
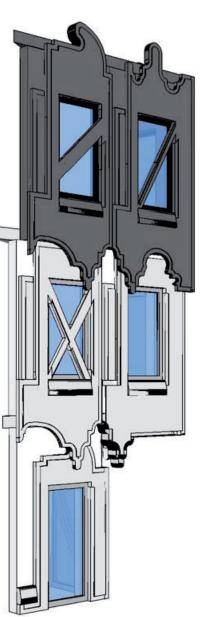
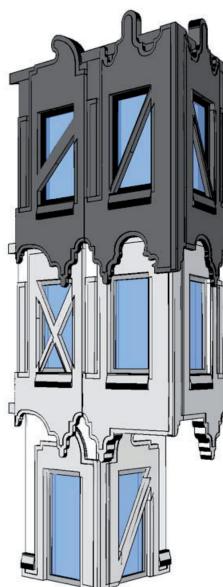


Fig.13 Response to panel prototype photographs

OPTION 1-TOP/BOTTOM OFFSET







OPTION 2-ALL EDGES OFFSET

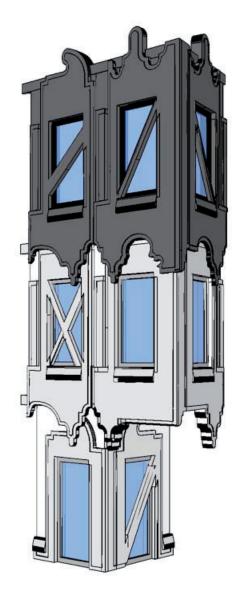
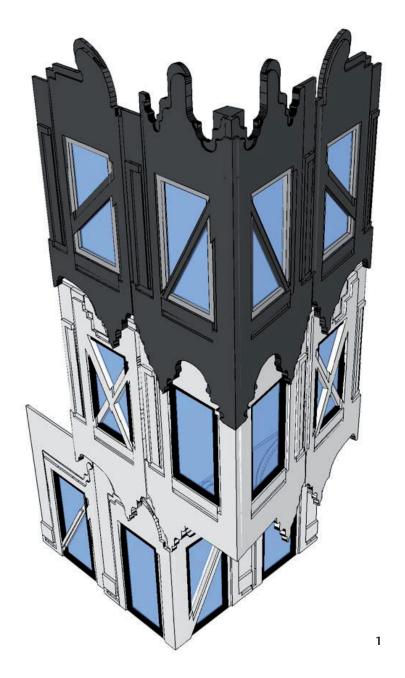


Fig.14a, 14b Corner offset studies

ORIGINAL- CORNER PIECE



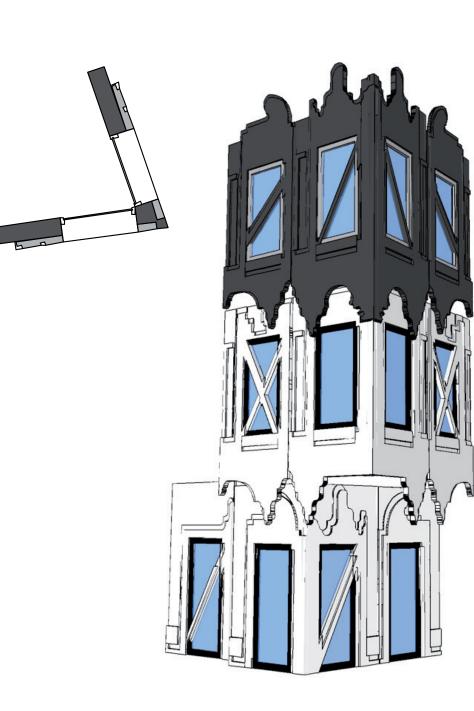


Fig. 14a, 14b, 14c Corner studies

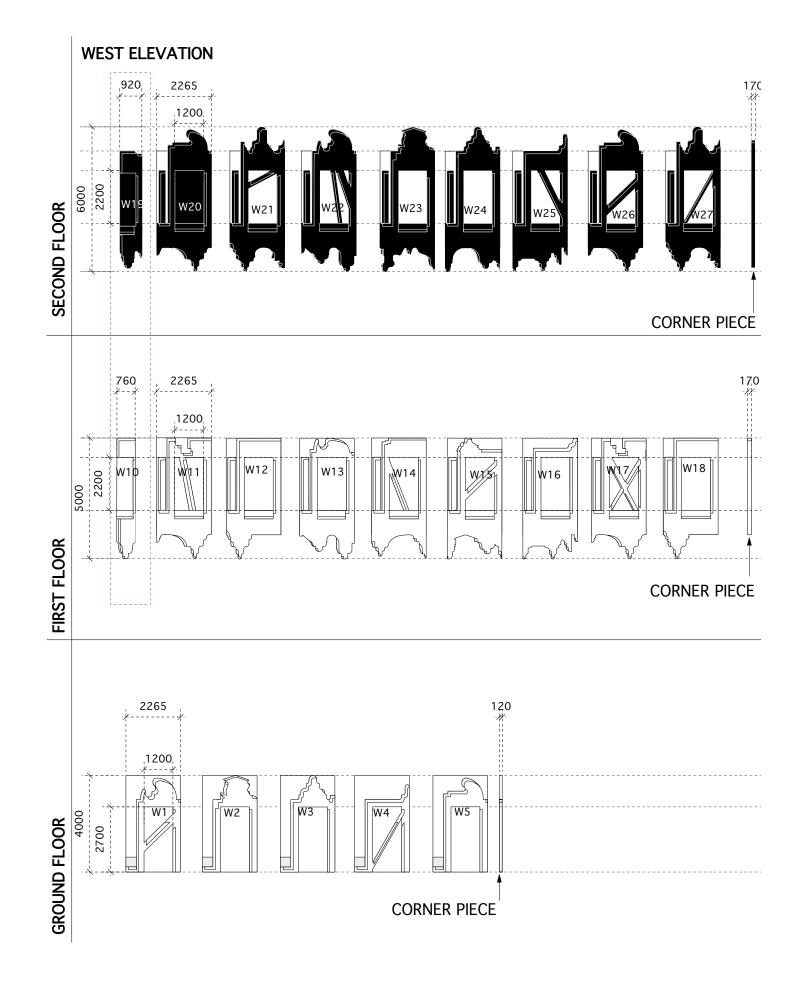
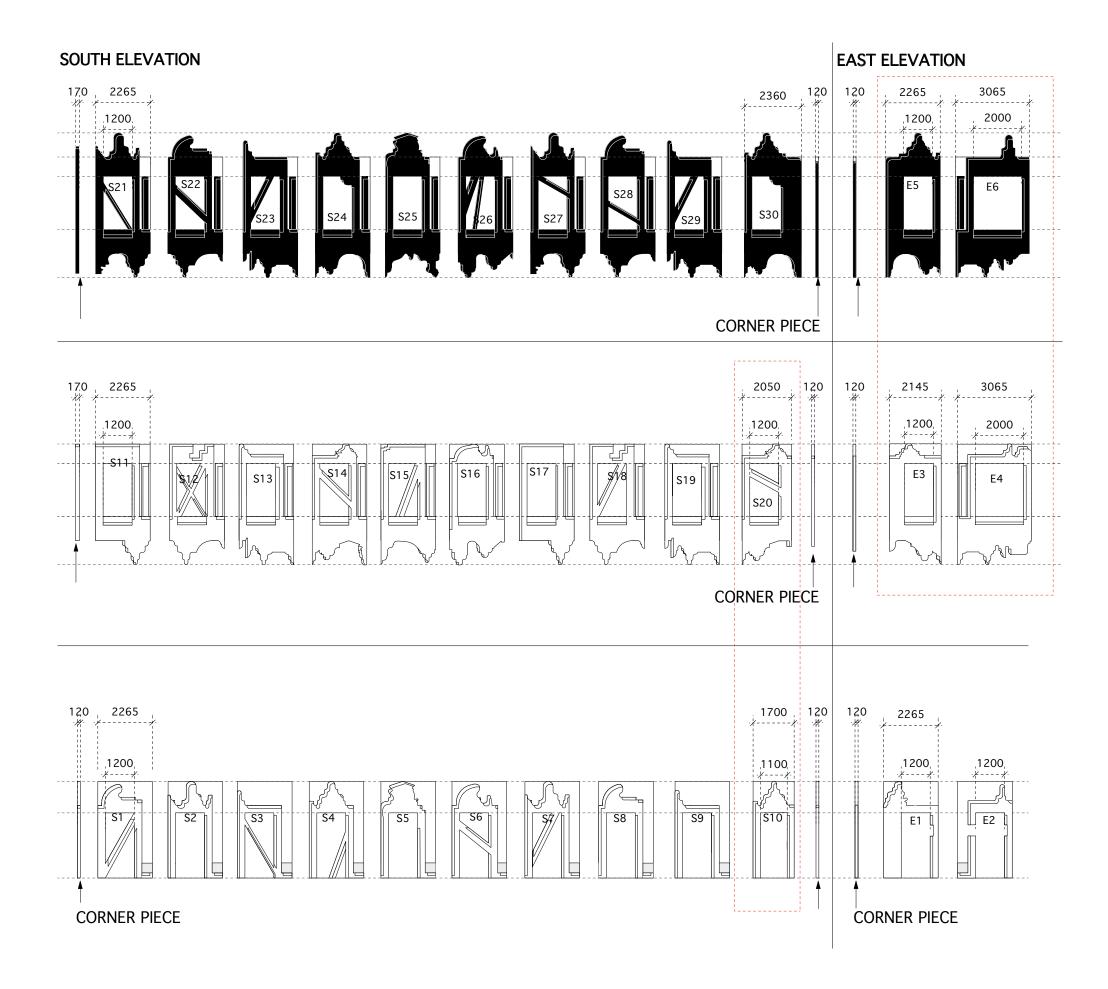


Fig.15 Panel Schedule 01



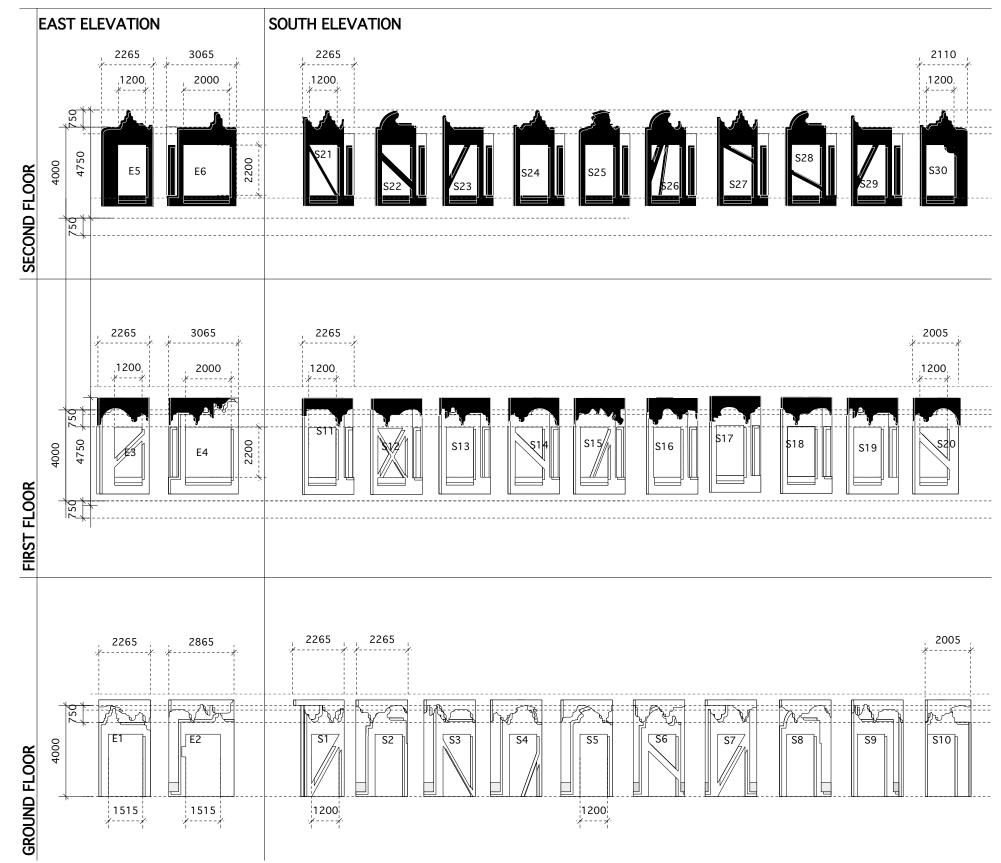


Fig. 16 Panel Schedule 01, Option 2

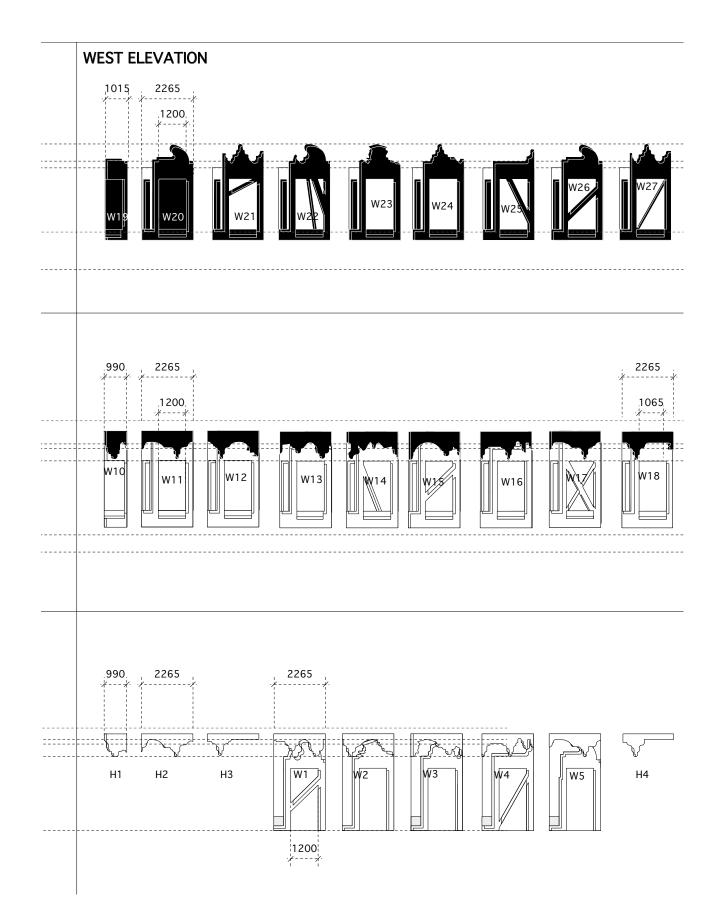
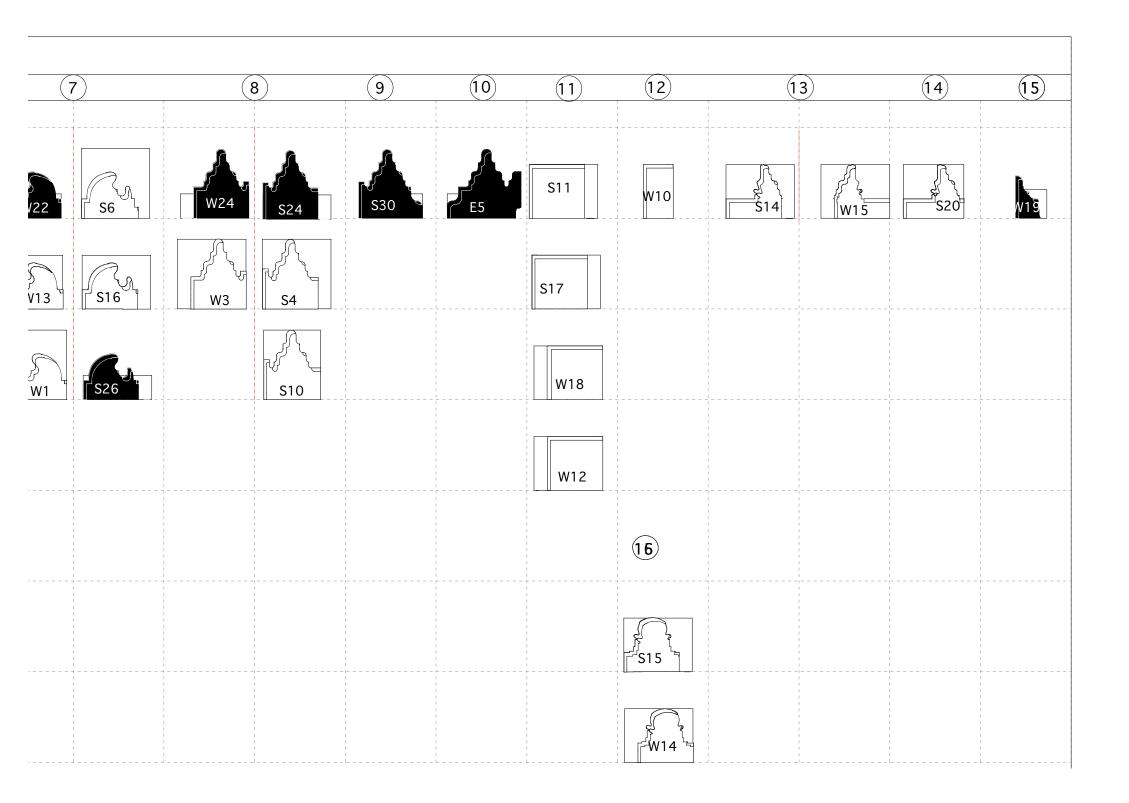




Fig. 17a Panel Schedule Detail



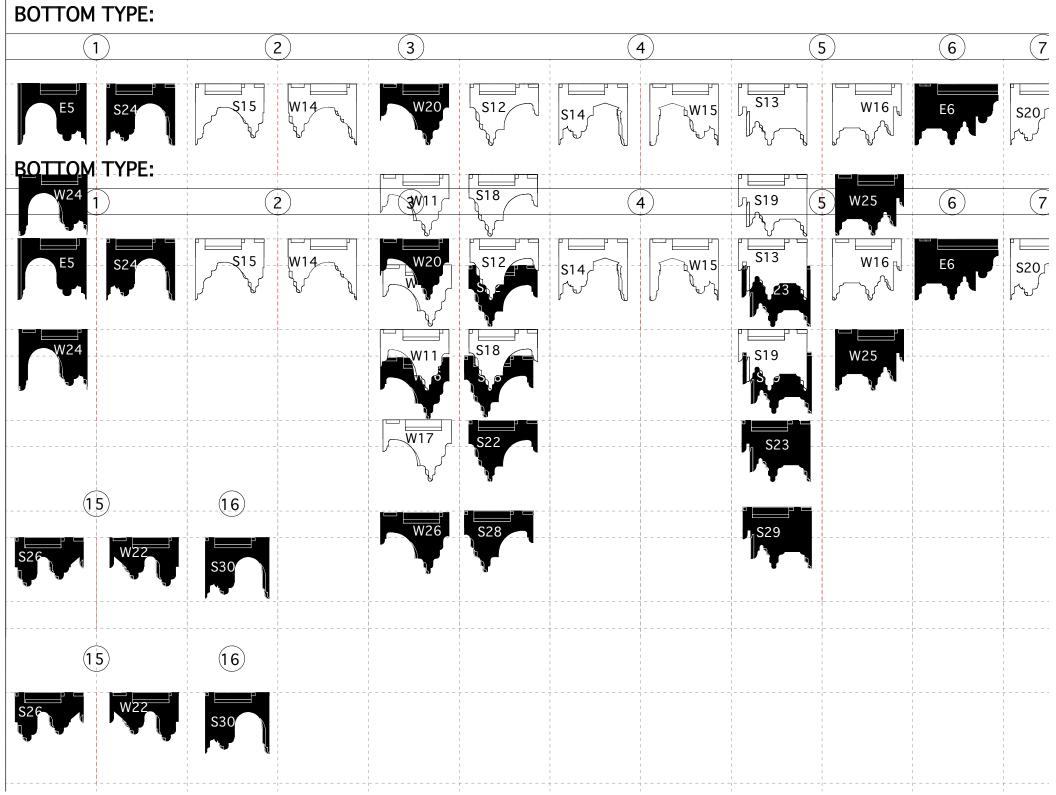
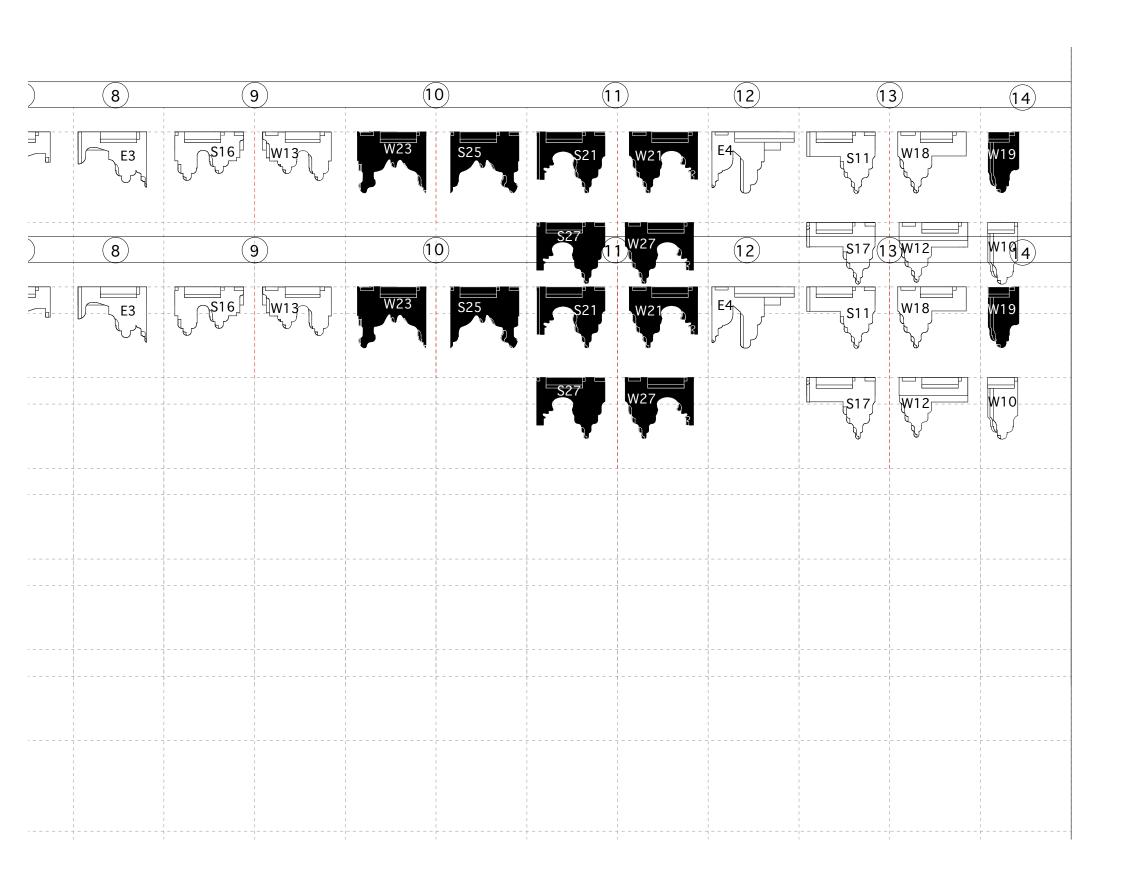


Fig. 17b Panel Schedule Detail



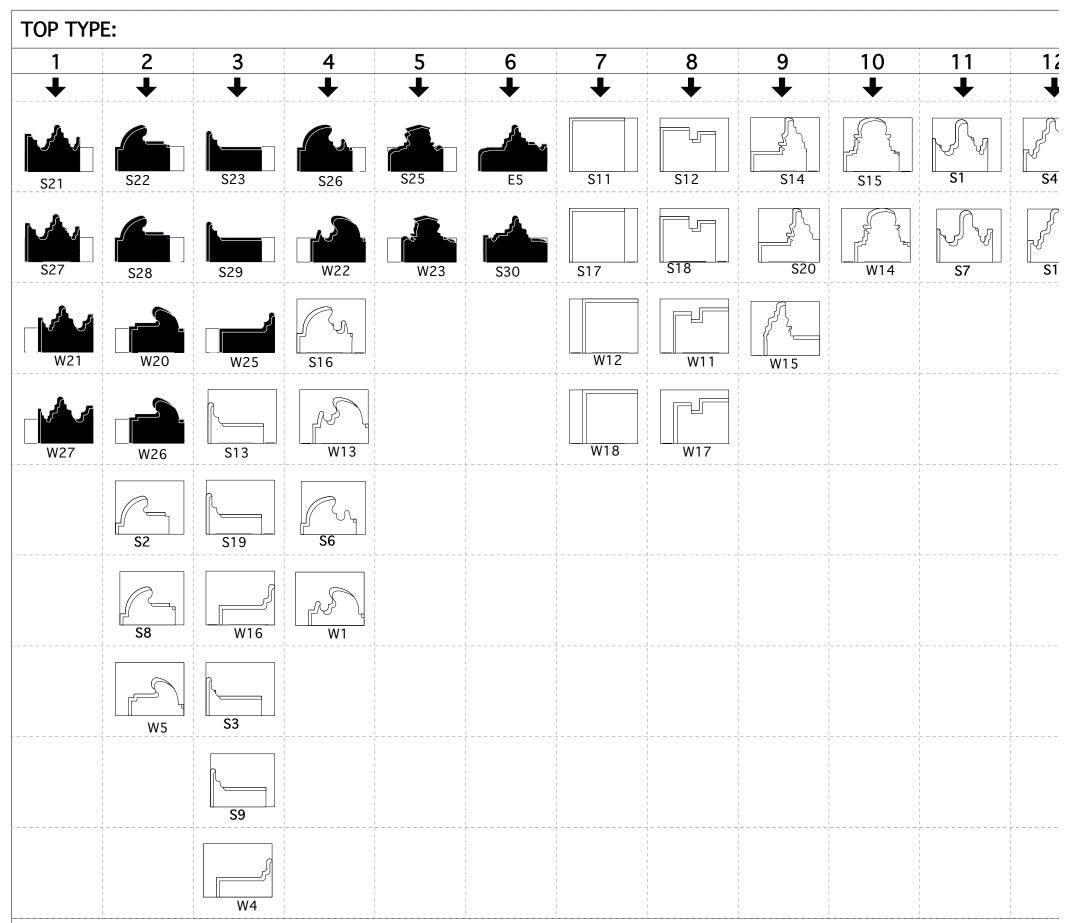
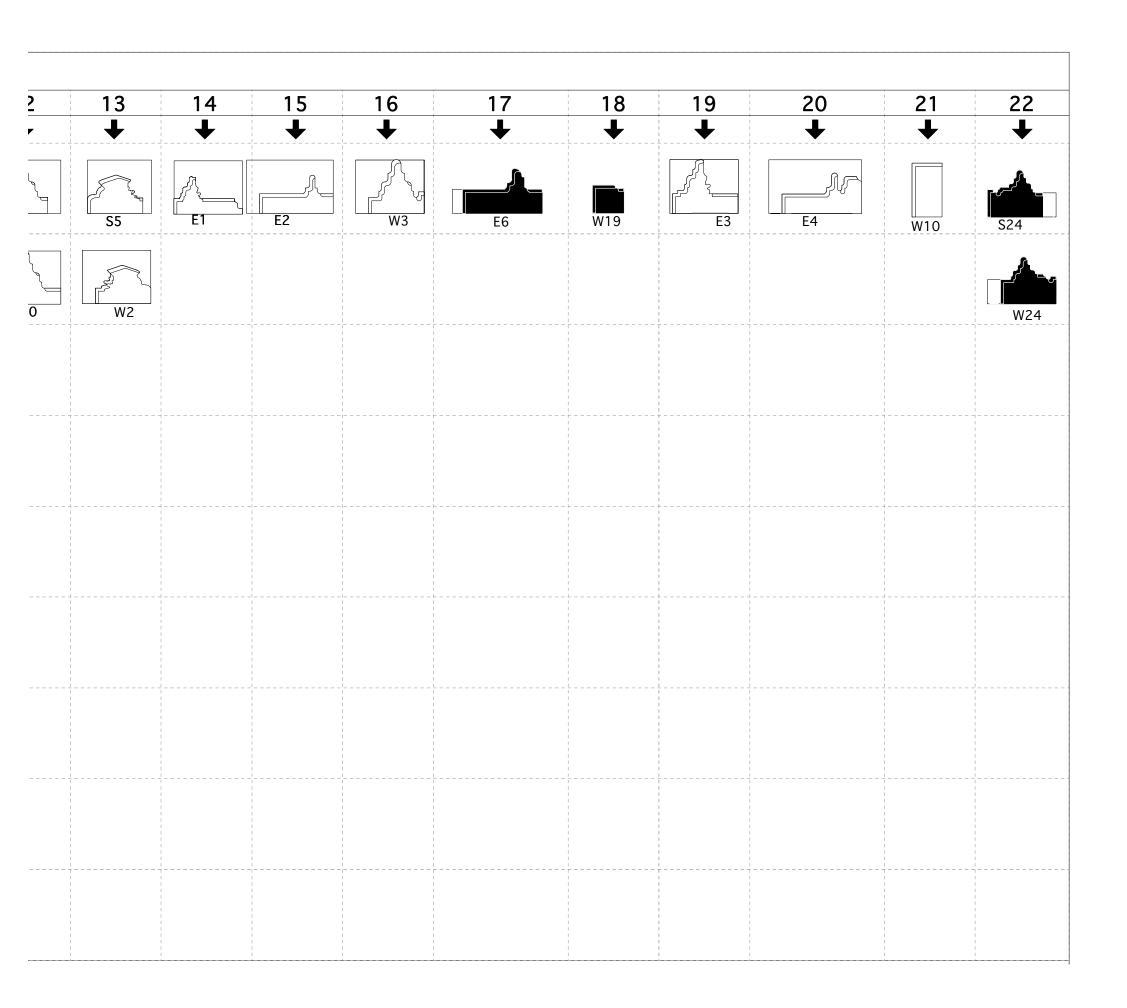
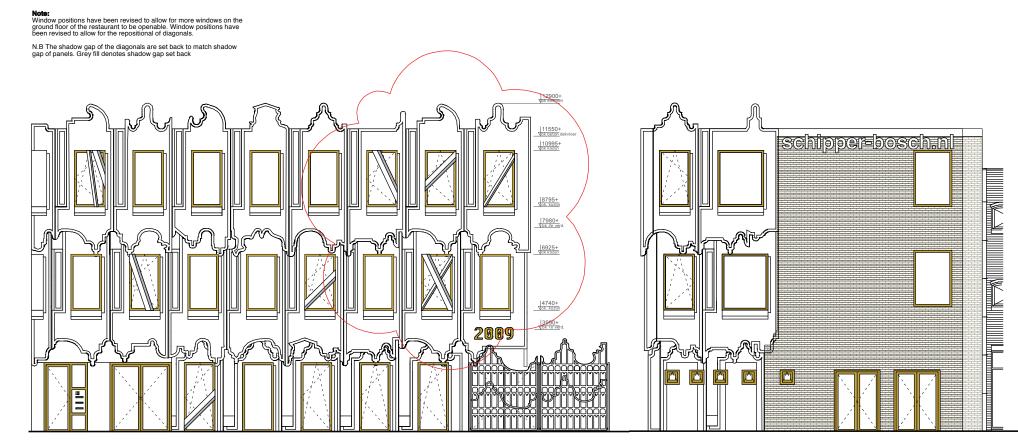


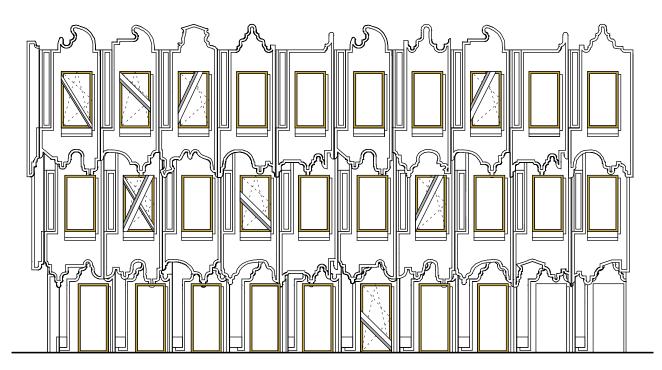
Fig. 18a Panel Schedule 02 Option 1





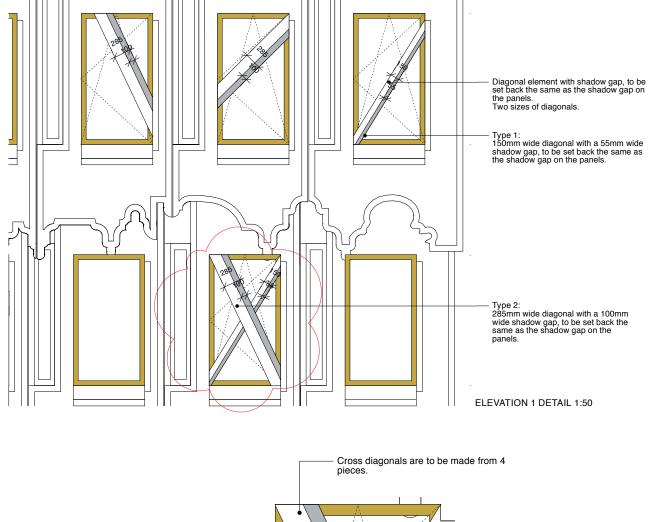
ELEVATION 1

ELEVATION 3



ELEVATION 2

Fig.19 a Elevations



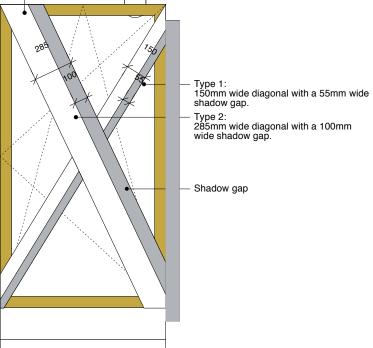


Fig.19b Elevation Detail

Press



£60m housing scheme puts DSDHA in big league

BD's Architect of the Year to design luxury scheme on site of former government buildings

minated Guild-

David Rogers

David Rogers Architect of the year DSDHAha been catapulated into the big leggus after landing its largest every bear before many length of the largest every large landing its largest every bear large largest every largest doft million warks. The firm, which picked up the building scale largest every large largest every largest land lows on the correct of John wardts, is drawing up plans for hundreds of garaments for Berks-ley Homes on the site of two largest every largest every largest largest every largest every troub liggest contracts, abousing scheme at the 2012 athletes 'village

on the design now to submit it to Westminster Council next spring" Deborah Saunt

ahead of demolition with con-struction due to start in 2012. DSDHA partner Deborah Saunt said: "We're working on the design now in order to submit it to Westminster Council next spring." The council has drawn up strict

guidelines on what it considers good design under its Design Excellence Initiative, which was introduced back in 2008 to raise standards in the borough. Council depuy leader Robert Davis, who spearheaded the move and is in charge of planning at the authority, said: "Twe been quite impressed by the design we've umpressed by the design we've impressed by the design we've impressed by the design we've impressed by the design of the authority, said: "Twe been quite impressed by the design of the impression of

brouhaha with second-rate and medic Berkeley's land buyer C McGahon confirmed the se would be high-end residenti this week the firm held its public consultatio with local resident due in February. DSDHA is carrying out work another scheme in Westmine on the corner of South Mol Street and Oxford Street. The storey mixed-use developmen been likened to New York's l iron Building.

The fee row is misleading, say the city's BSF architects. **P.8** 'A dab of Debord and a swig of the spirit of '68 will not do. There are really pressing issues out there' Student action could have a real impact, says Robert Mull. **P.9**

Lloyd's Building set to be listed English Heritage ready to submit Richard Rogers' London building the day it turns 30. **P.3**

LETTERS Birmingham

MJP focuses on beech life at St John's

NJP Architects has completed the four-storey Kendraw Quadrangie for St Johns College, Drod.
State the state of the solicy solicy of the solicy solicy of the solicy select common Room both sons overal prizes.
Kendrew Quadrangle's design was informed by its surroundings, which include several listed buildings and walls and an ancient beech building contains 80 en-suite student rooms, six small flats for college fellows, a law Ubarry, archive and a number of teaching rooms. At the heard of the scheme is a calé in a double-height glass box. MJP Architects has compl





BUILDING

Community

recharge

Sections and

dissections The Slice, the Architectural Association's latest exhibitio deals with the act of cutting open and uncovering. **P.20**



P.01. Woodman, Ellis. "Sweet Tooth." Building Design, 10 December 2010, 10-11.

BUILDINGS: FAT

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asked his architect for "a building like a wedding cake", an idea that Fat interpreted nothing if not lit-erally. Each of its elevations' three storeys has been treated as a pro-nounced tier – although stepping successively outwards rather than in – while the precast concrete sandwich panels from which they are assembled have been modelled eat the expense who sounds ike me – the ging to the idea ire of the 21st l be capable of of cultural conm — while the precast sandwich panels from w are assembled have been as if by a master philasi to a star by a master philasi to a star by a master philasi that mere and the star by the star wall. The surface is char by a busy graphic of grow profiles that distracts the actual construction j. also emphasizes the actual construction j. also emphasizes the automatic the surface of the actual construction j. also emphasizes the association of the star philasize the star philasiz rrent building such concerns sregard. What ting is that it ns, but – in its – sets about ering them. a approach of the artist Jeff is perhaps analogous. Take rk like his famous 1988 ic sculpture Michael Jack-nd Bubbles. Its imagery is and abjectly kitsch, and yet raftsmanship of the hired to that Koose comployed to ployed to invests it ester powder coate the year of compl least of intended co Further autrows, by the centuries the year or some, tradition to which the and child have here and has augually a the series of the series of the sandbares. The relationships of the series of the principal faced. So far, so festive And yet he image presented i and of Preta.

the poin

Indonna and Child have here een taken by a surgically altered op star and his pet ape but this mains a kind of Petria. And so in Farl's work one finds 1 unimperchably architectural againation at play. The practice scentes its latese project, Grote oppel, a mixed-use building in the b Dutch town of Amersfoort, in offers a classically triparite optical and a plazzo. Sure enough, offers a classically triparite developer must initially have had in mind. For one thing, the white The precast concrete panels have been expression: three storeys united in a common rhythm of solid and voibbut distinguisded by the level of refinement that each presents. It is an image on which numerous banks, embassies and gendements clubs have been modelled but is here applied to a structure that accompositive a sum of the solid but the solid but the solution of the solid but the sol

Jistrug-mage on which numerous nave been modelled huit stands innediated beyone stands innediated beyone that forthor is marked by an inform is marked by an attructure to which Far's start structure to shich Far's start start start start start start structure to shich Far's start s concrete of the lower two storey is exchanged for black on the to - the sorry effect, one imagines of a catastrophic fire. Meanwhile strophic fire. Meanwhile windows are slice y concrete diagonals pus purpose. Diagon tions of Fat's built istically as a kind tion like the re-cigarette in a "n The ones at Am operate in that ndid building beckons ally. And yet, sadly, this ir destined to go uncon-ed – an elevated railway them Th as piled on th ugh the

Fat's building and the object of its inscripti infections. Last year marked the 750th terpoint anniversary of Amersfoort's foun-lation, a milestone that the pro-lation, a milestone that the pro-etes's developer-hoped the scheme skyly rede might somehow celebrate. He dows. evider oviding the with a form

use of the "2000

SITE PLAN 1 Grote Koppel 2 Kleine Koppel Kopp the first and second floor levels as if the whole thing were in the process of melting. Not since Richard Harris had his heart bro-ken in MacArthur Park has a cake to the schem for th There is an interior but annoy simply print-c model with it ingly not the hoped for. ne arcı ginally



PROJECT TEAM Architect Fat, Client Schipper Bosch, Contracto Emmen, Concrete advice and montage Inprebo, Concrete fabrica Outdoor furniture Studio Floris Schoonderbeek

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P.O2. Woodman, Ellis. "Top 10 Buildings of 2010." The Daily Telegraph, 11 December 2010, R16-R17.

