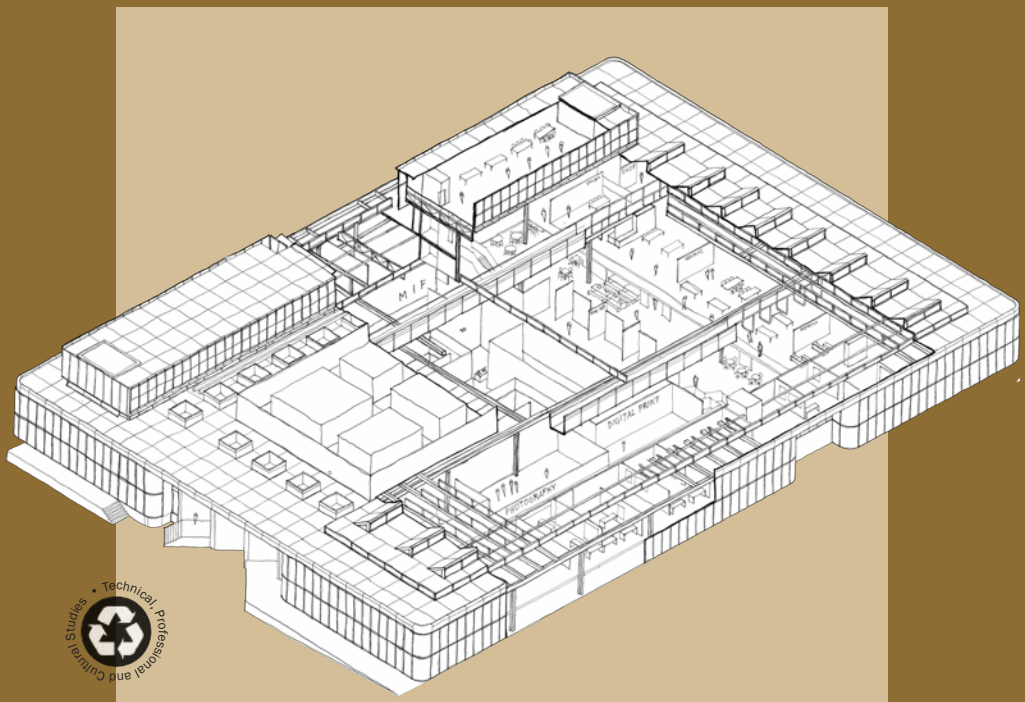
FROM THE

HERMAN MILLER ACTION FACTORY

TO THE BATH SCHOOL OF ART & DESIGN

BUILDING MATTERS

Issue No.: AR7182



From the Herman Miller Action Factory to the Bath School of Art and Design

By Group 6

of Building Matters Module

Lead by Roland Karthaus

Group 6 is composed of:

BRAHIMI, Asma - u1721370
PHIPPS, Odaine - u1101231
PODESTÀ, Giuseppe - u1720035
SAAB, Hani - u1319319
SAHIN, Ozan - u1718872
SHAH, Waqaar - u1211246
SILVA, Iara - u1718869
SKINNER, Kate - u1720536

AR7182 Technical, Professional and Cultural Studies

Grimshaw Architects
57 Clerkenwell Rd, Islington
London, EC1M 5NG

Grimshaw point of contact:
Henry Turner.

University of East London
Docklands Campus,
University Way,
London, E16 2RD

February 2018

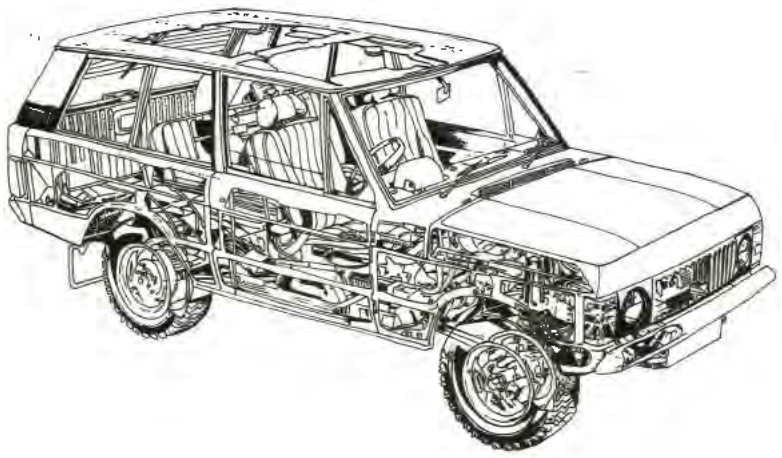
We chose to present this analytical study of the re-design of the Herman Miller Factory, through a Haynes manual inspired report as a satirical take on the design of industrial spaces. This equates the building and the ideology behind it, to the mass-production of automobiles, consistently depicted on the Haynes publications.

Contents

FROM FACTORY TO ART SCHOOL

DRAWN EXPLORATION

APPENDIX

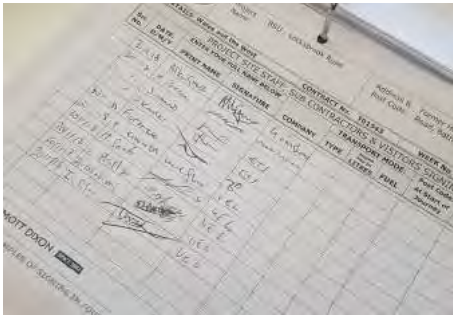


Introduction

Introduction

First built in 1976, the iconic Herman Miller Action Factory, located in Bath, was designed by Nicholas Grimshaw from Farrell & Grimshaw Architects for the infamous Herman Miller furniture company. The Grade II Listed building, incorporated principles of openness, flexibility and provided a space which aided in the well-being of the factory's employees.

Following nearly 40 years of use, in 2010, Herman Miller Inc. decided to sell the building after relocation near Chippenham to a new building where it would be possible to combine the factory's office and manufacturing spaces which nowadays require a larger space than the Bath location is able to offer.

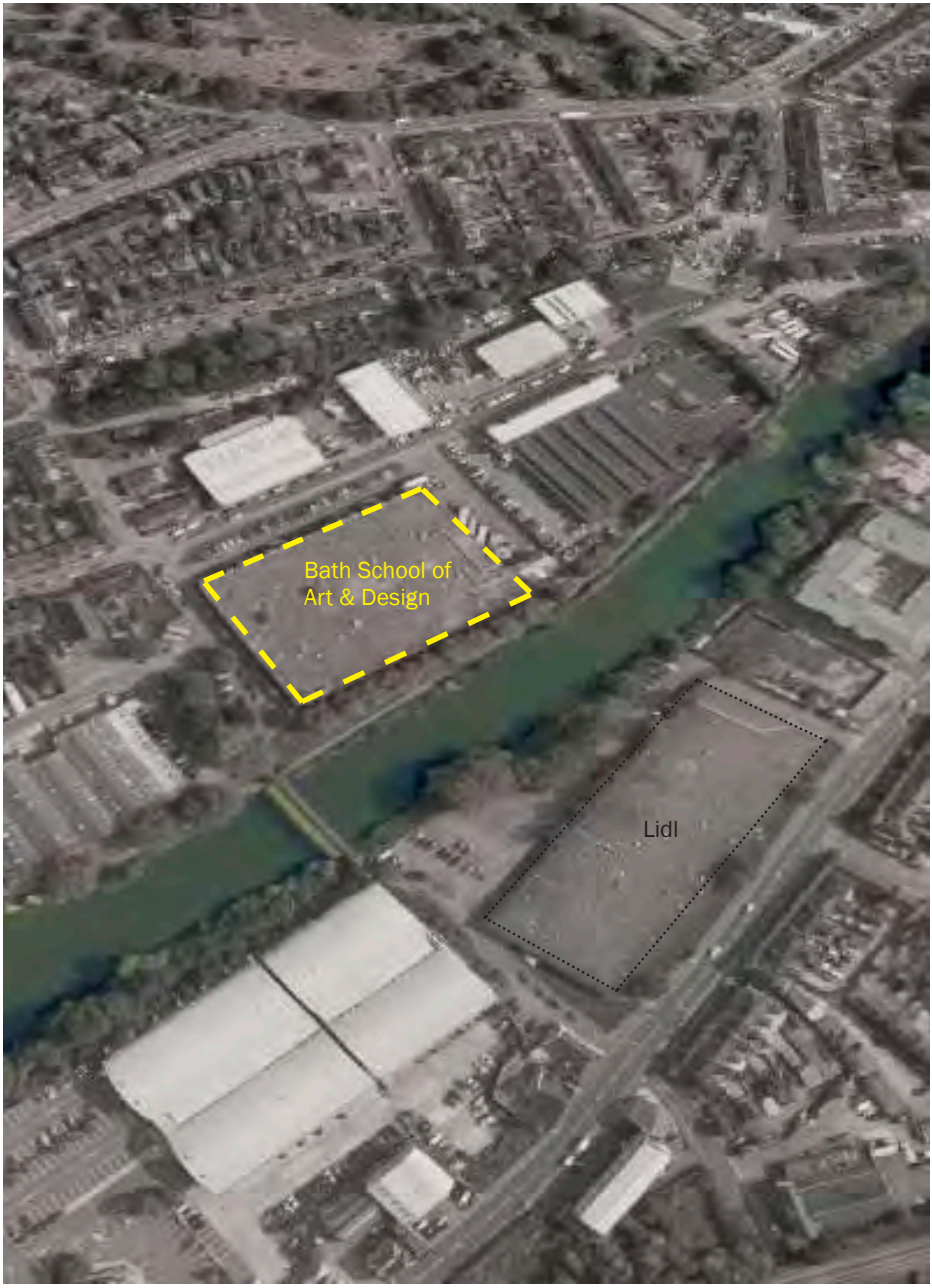


The University of Bath showcased interest in the building as the new location for its Art department, however, before it would agree to purchase it, the building would have to undergo a change of use.

Now, solely as Grimshaw Architects, the company responsible for the original building was once again contacted to be responsible for renovating the building from the Herman Miller Action Factory to the Bath School of Art and Design.

This document's main objective is to gain a greater understanding of the narrative, trajectory and components of this iconic Grade II Listed building, and through drawing, point out specific, critical details regarding crucial interfaces which make up the building as we know it.

Project outline



Project outline

Historic context:

Currently a 'Lidl'
Grade II Listed Building, concluded in 1967 by York, Rosenberg & Mardell Architects.

It became recognised for being the first building to make use of the Metro Space Frame structure in the United Kingdom.

The team:

Due to the size and complexity of this project, the design team is made up of a number of contractors who coordinate daily in order to exchange any relevant information, updates and alterations.

Grimshaw
Architects

Mann Williams
Structural engineer

Arup
Mechanical, Engineering & Acoustics

Gleeds
Project Manager

Quantity Surveyor

Planning Consultant

Transport Consultant

NPA
Landscape Architect

Montresor
Facade Consultant

General Contractor

Current Stage:

RIBA stage 4/5
Weeks: 5/75

The project has now entered its construction phase (RIBA stage 5) but it is in the initial demolition stage which allows for the alteration and update of items belonging to the project's technical design (RIBA stage 4).

Construction cost:

£22 million

Project cost:

£32 million

Timeline

1974-75
Headquarters for
Editions Van De Velde
Tours, France

- *Low cost solution*
- *Maximum flexibility*
- *Steel frame built in a week*
- *GRP cladding system*

1975-76
Herman Miller Action
Factory, Bath

In '75 the competition was launched and its brief was described as a 'Statement of expectations':

It is our goal to create an environment that:
Encourages an open community and fortuitous encounter
Welcomes all
Is kind to the user
Changes with grace
Is person-scaled
Is subservient to human activity
Forgivs mistakes in planning
Enables this community (in the sense that an environment can) to continually reach toward its potentional
Is a contribution to the landscape as an aesthetic and human value
Meets the needs we can perceive
Is open to surprise
Is comfortable with conflict
Has flexibility, is non-precious and non-monumental

In our planning we should know that:
Our needs will change
The scale of the operation will change
Things about us will change
We will change

Timeline

1978
Advanced Factory Units, Winwick Quay, Warrington

- *Client requested that the principle of flexibility seen on the Herman Miller factory be used on this project*
- *Aluminium cladding*
- *Other clients followed, with similar requests, resulting in various projects inspired by the Herman Miller factory. However none of them re-used the GRP cladding system, as it had been proven to not be successful*

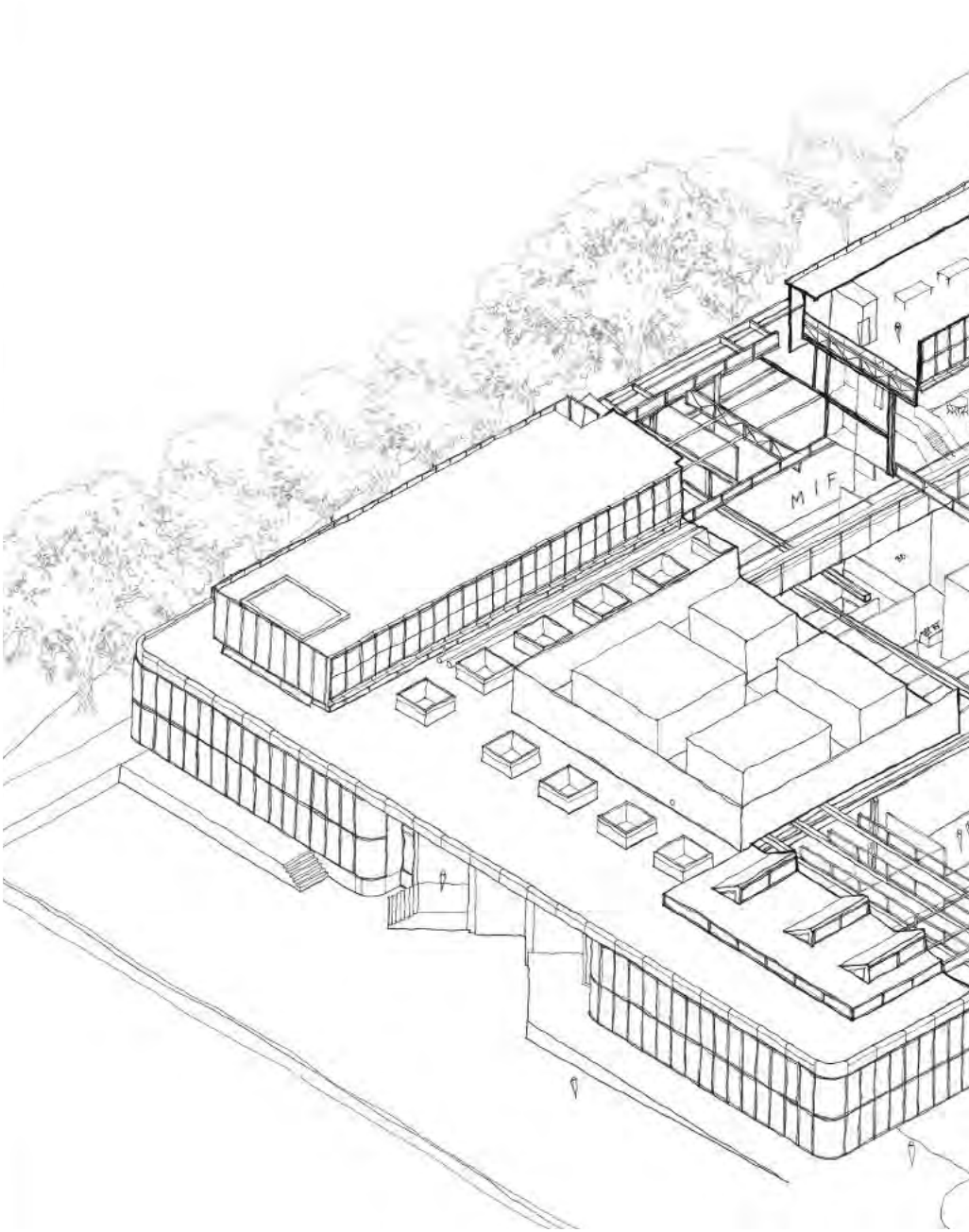
1983
Herman Miller Distribution Centre, Chippenham

2011
Herman Miller puts buildings for sale. Bath University show interest but purchase was pending on the change of use of the building

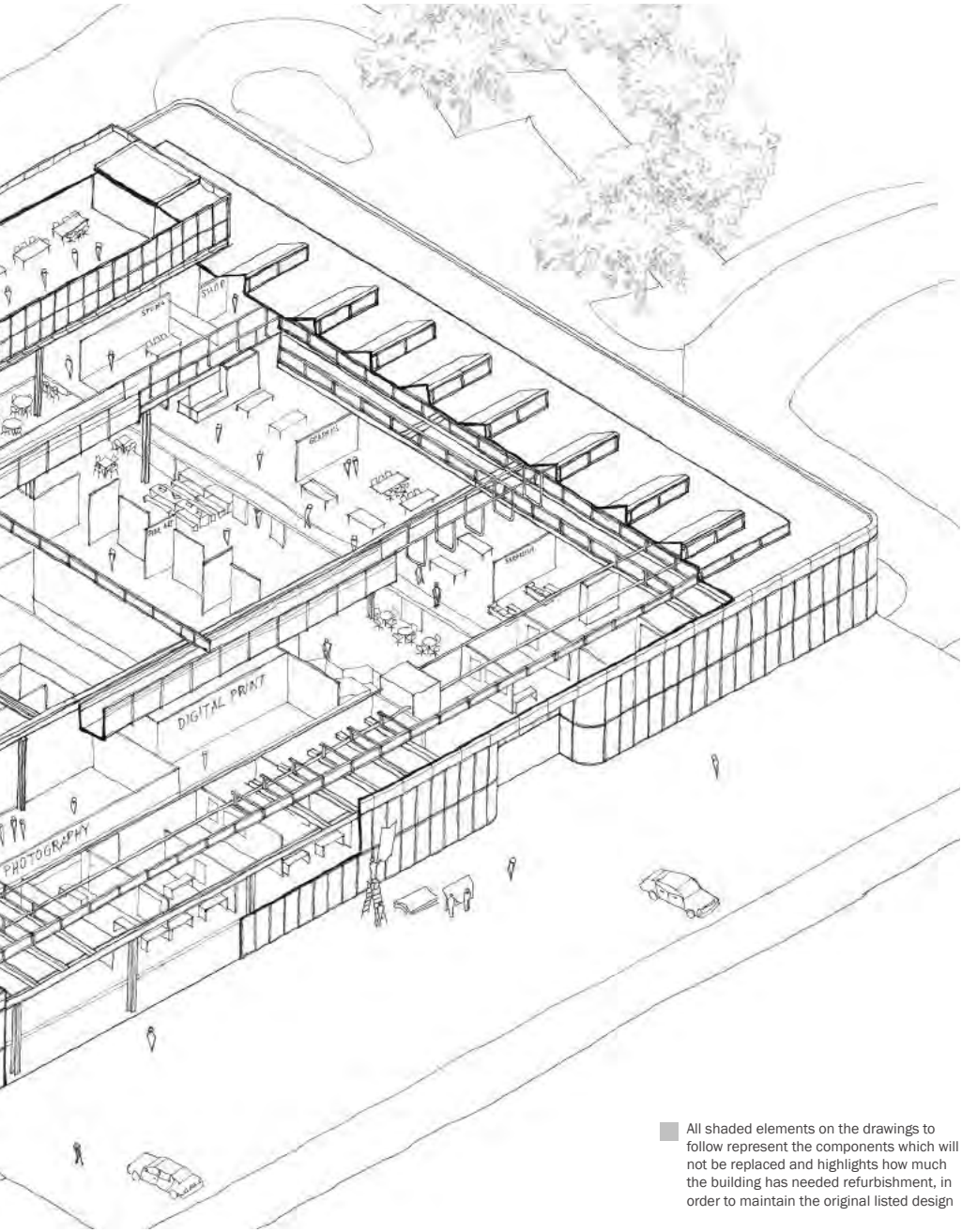
Nov 2016 - Nov 2017
Planning process - working towards an approval and mediating with several conservation and preservation councils

Now
Demolition has begun 5/75 weeks

Drawn Exploration

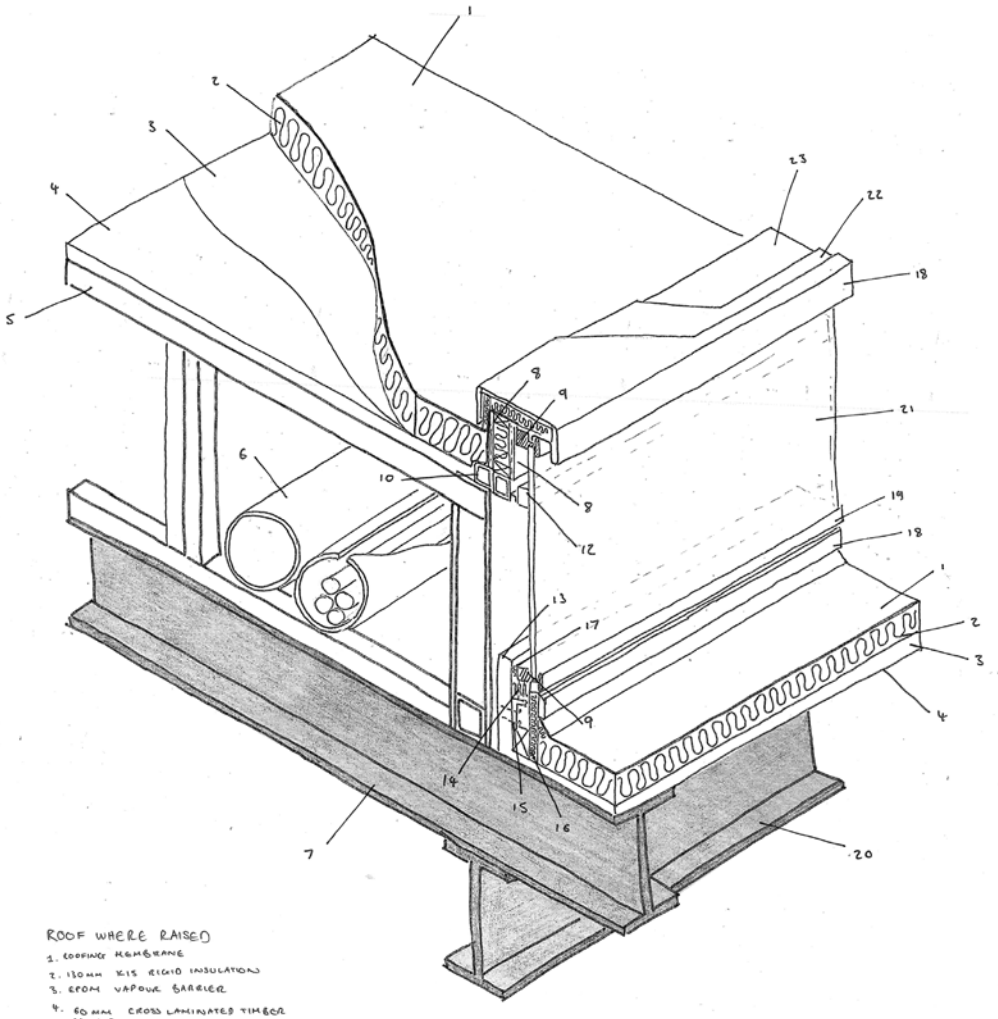


Overview



All shaded elements on the drawings to follow represent the components which will not be replaced and highlights how much the building has needed refurbishment, in order to maintain the original listed design

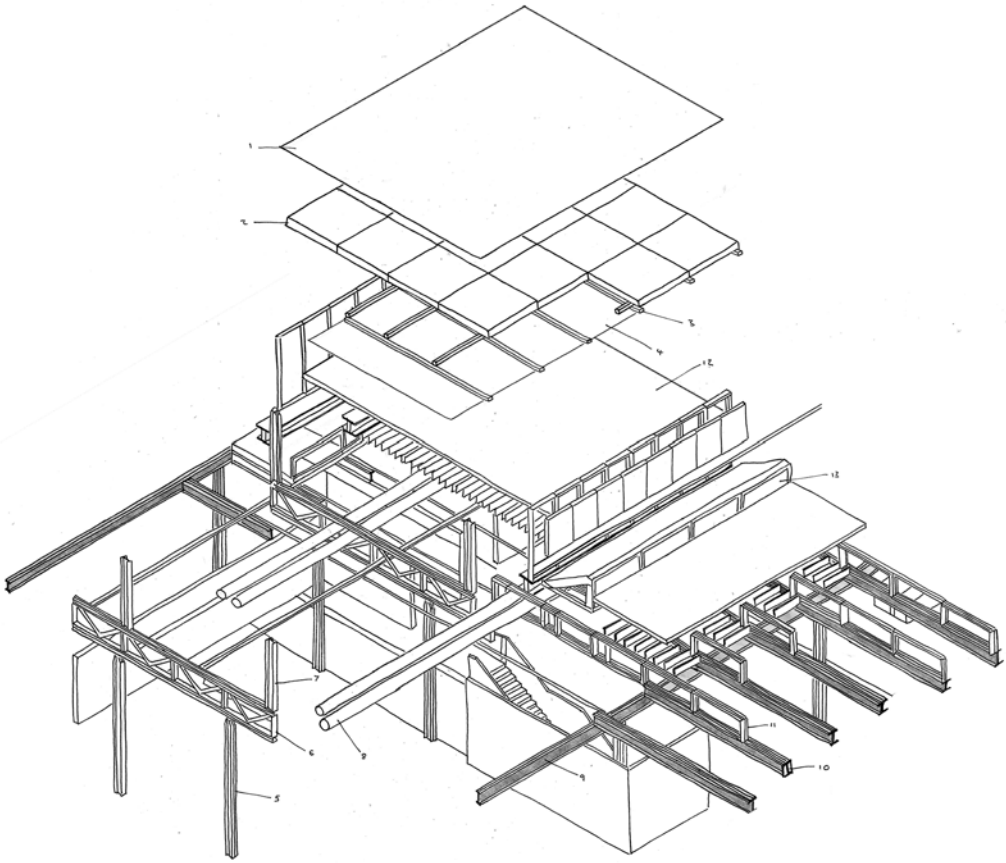
Drawn Exploration



ROOF WHERE RAISED

1. ROOFING MEMBRANE
2. 120MM KIS RIGID INSULATION
3. EPDM VAPOUR BARRIER
4. 60 MM CROSS LAMINATED TIMBER PANELS
5. STEEL VIERENDEEL GIRDER
6. SERVICE RUN
7. SECONDARY STEEL I-BEAM 406 x 178 x 54 UB (EXISTING)
8. CEMENT PARTICLE BOARD 10MM ON SPACERS AROUND 70 MM RIGID INSULATION
9. EXTRUDED ALUMINIUM PROFILE
10. 70 MM SHS TO VIERENDEEL GIRDER
11. 10MM CEMENT PARTICLE BOARD ON 55MM RIGID INSULATION TO INNER FACE OF PARAPET
12. EXTRUDED ALUMINIUM PROFILE TO 70MM SHS BETWEEN VERTICLE MULLIONS
13. CROSS LAMINATED TIMBER VERTICAL PANEL (60MM)
14. INSULATION PACKED AROUND BRACKET TO MULLION
15. STEEL ANGLE FIXED BACK TO CLT PANEL TO SUPPORT GLAZING SYSTEM
16. 30MM RIGID INSULATION
17. THERMAL RESISTOR
18. ALUMINIUM FLASHING
19. CONTINUOUS RUBBER GASKET
20. PRIMARY STEEL I-BEAM 533 x 210 x 82 UB (EXISTING)
21. DOUBLE GLAZING SYSTEM
22. 10MM CEMENT PARTICLE BOARD
23. 55MM RIGID INSULATION

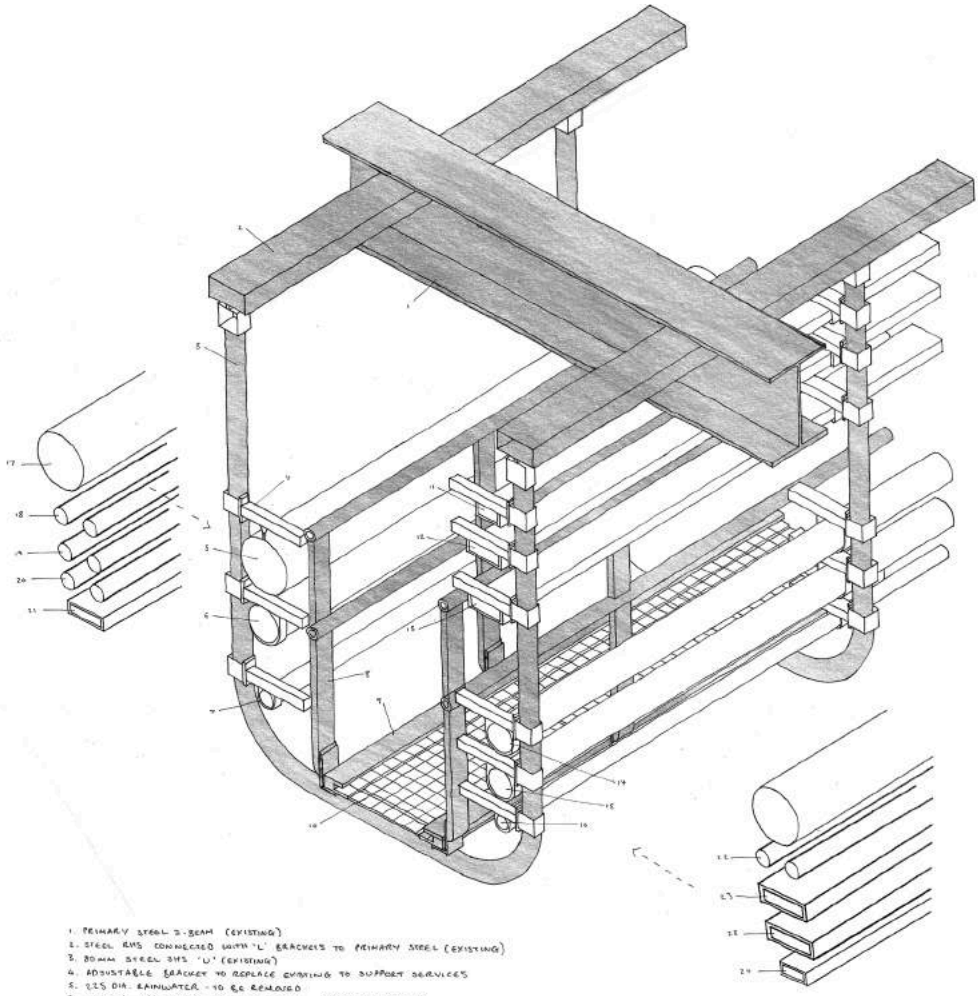
Roof Structure



ROOF EXTENSION

1. ROOFING MEMBRANE
2. 130MM KIS RIGID INSULATION ON EPDM VAPOUR BARRIER
3. 200MM SHS ROOF DECK
4. DRYWALL CEILING FIXED UP TO SHS DECK
5. STEEL COLUMNS WITH CHAMFERED TOP TO MATCH EXISTING WELDED CONNECTION BETWEEN COLUMN & TRUSS
6. 1.5M DEEP STEEL TRUSS
7. STEEL COLUMN TO SUPPORT METAL ROOF DECK
8. SERVICE RUN WITHIN RAISED ROOF ZONE
9. PRIMARY STEEL I BEAM (EXISTING)
10. SECONDARY STEEL I BEAM (EXISTING)
11. STEEL VIERENDEEL GIRDER
12. CROSS LAMINATED TIMBER FLOOR DECK
13. CLERESTORY GLAZING

Drawn Exploration



1. PRIMARY STEEL I-BEAM (EXISTING)
2. STEEL RHS CONNECTED WITH 'L' BRACKETS TO PRIMARY STEEL (EXISTING)
3. 80MM STEEL SHS 'U' (EXISTING)
4. ADJUSTABLE BRACKET TO REPLACE CHANNEL TO SUPPORT SERVICES
5. 225 DIA. RAINWATER - TO BE REMOVED
6. 100 DIA. SPRINKLER - TO BE REMOVED DISTRIBUTION MAIN
7. 50 DIA. HOSE REEL SUPPLY - TO BE REMOVED
8. STEEL BAR BALUSTRADE (EXISTING)
9. STEEL DECK (EXISTING)
10. MESH WALKWAY (EXISTING)
11. 100 x50mm LIGHTING PRIMARY BUSBAR - TO BE REMOVED
12. 450 x50mm COMPARTMENT TRUNKING - TO BE REMOVED
13. 150 x50mm POWER PRIMARY BUSBAR - TO BE REMOVED
14. 100MM DIA. COMPRESSED AIR MAIN - TO BE REMOVED
15. 100 DIA. GAS MAIN - TO BE REMOVED
16. 40 DIA MAINS WATER - TO BE REMOVED
17. FIRE PROTECTION WET - PROPOSED
18. LOW TEMP. HOT WATER RETURN & FLOW - PROPOSED
19. CHILLED CHW FLOW & RETURN - PROPOSED
20. DOMESTIC HOT WATER FLOW & RETURN - PROPOSED
21. ELV BASKET - PROPOSED
22. BOOSTED COLD WATER FLOW & RETURN - PROPOSED
23. DATA BASKET - PROPOSED
24. LV CABLE TRAY - PROPOSED

SERVICE UPGRADE - - >

Services

2018 photographs compared to the one from 1976

Secondary services accessible via the catwalk

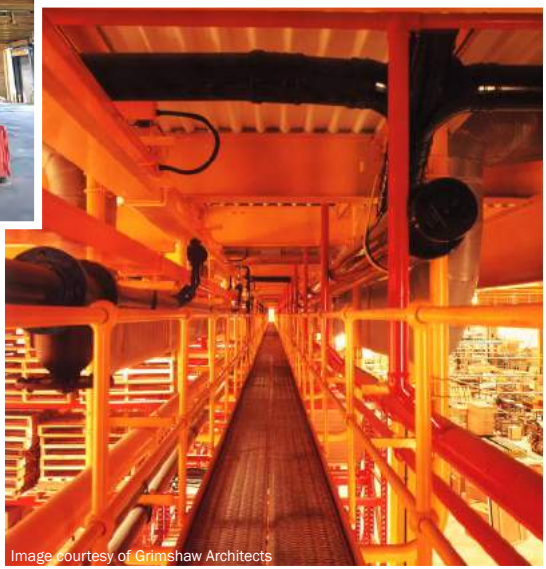
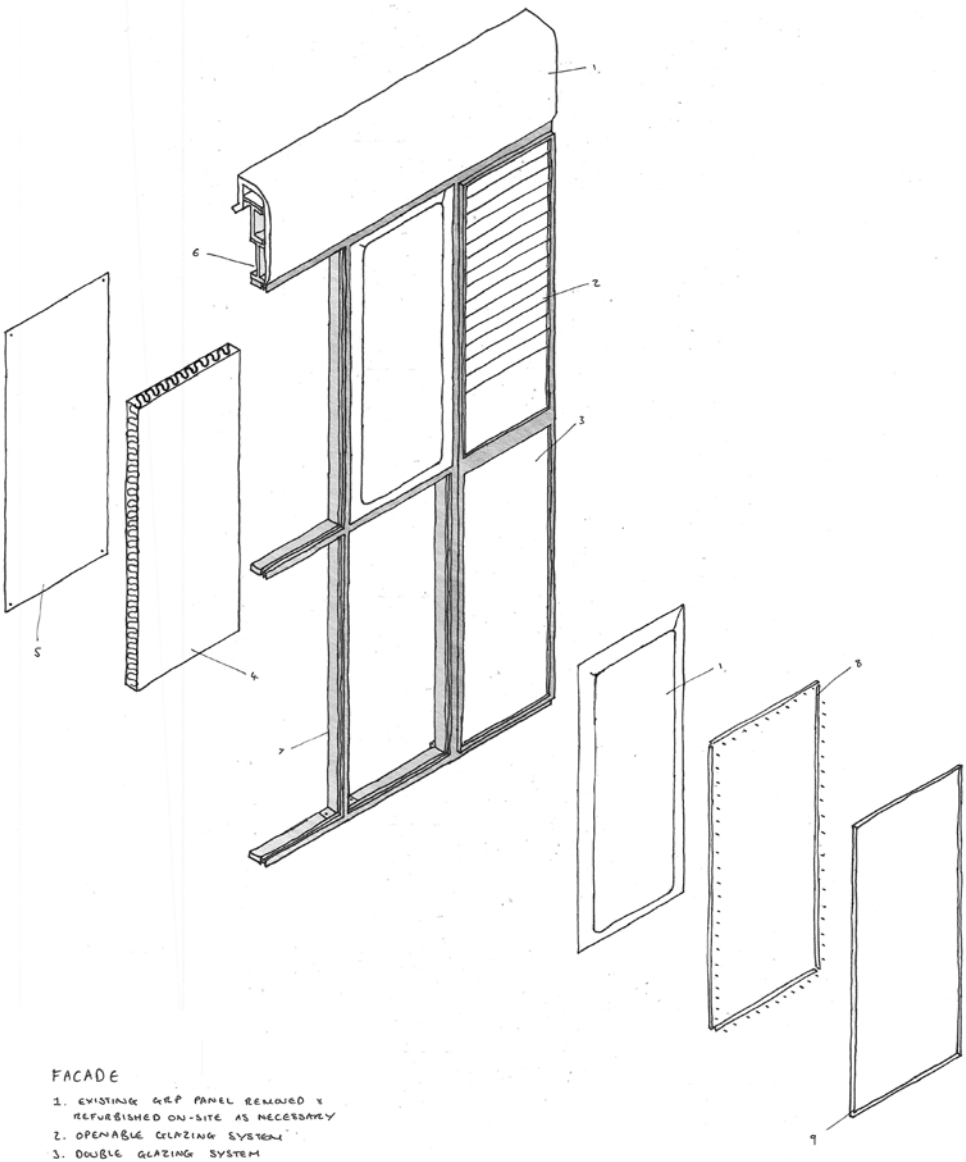


Image courtesy of Grimshaw Architects

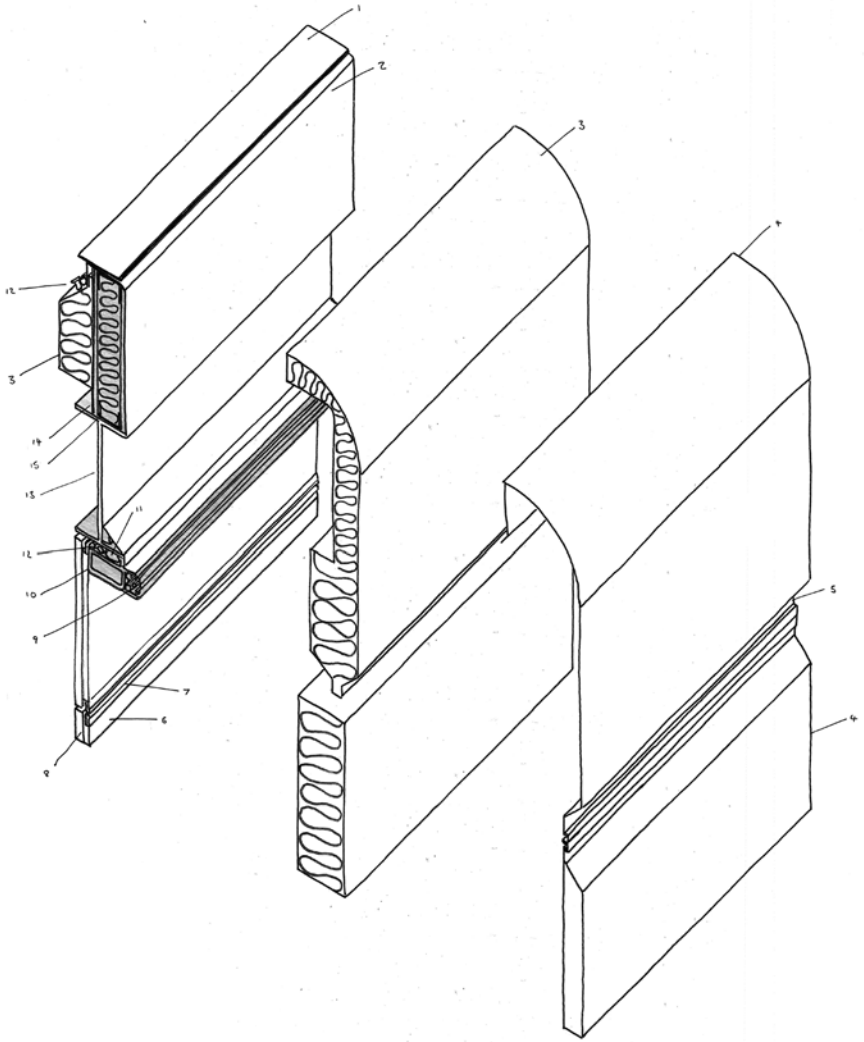
Drawn Exploration



FACADE

1. EXISTING GRP PANEL REMOVED & REFURBISHED ON-SITE AS NECESSARY
2. OPENABLE GLAZING SYSTEM
3. DOUBLE GLAZING SYSTEM
4. FULL FILL INSULATION
5. PLY PANEL INTERNAL LINING
6. EXISTING I-BEAM
7. EXISTING 127 x 63.5 RHS
8. ALUMINIUM FLASHING
9. RUBBER GASKET

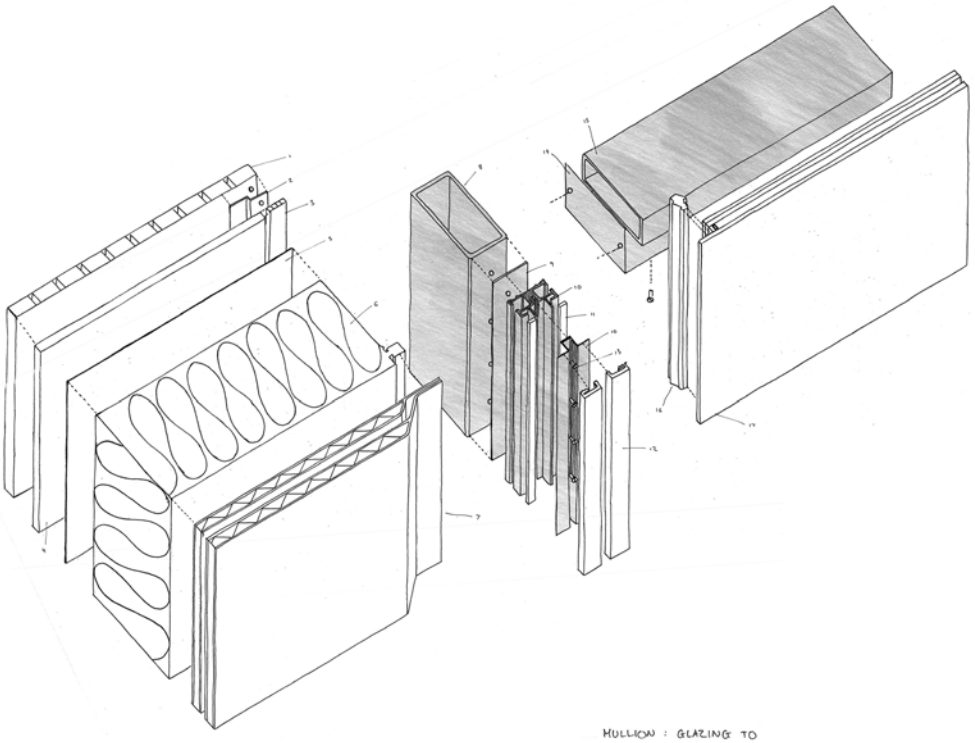
Facade



GLASS REINFORCED POLYESTER PANELS (GRP) PARAPET

1. ALUMINIUM L BRACKET
2. EPDM
3. FULL FILL INSULATION
4. GRP PANEL
5. CONTINUOUS RUBBER GASKET
6. ACOUSTIC FLEECE
7. ALUMINIUM CHANNEL
8. FLY SHEET
9. EXTRUDED ALUMINIUM PROFILE - EXISTING
10. EXISTING 127 x 63.5 RHS
11. NEOPRENE SPACER
12. SEALANT
13. EXISTING I BEAM
14. CEMENT PARTICLE BOARD
15. SFS FIXED TO BEAM

Facade



HULLION : GLAZING TO
GLASS REINFORCED
POLYESTER PANELS (GRP) PANEL

1. PERFORATED PLY PANEL
2. BLACK 'G' BRACKET
3. 10mm BLACK THERMAL BREAK RESISTOR
4. ACOUSTIC FLEECE
5. VAPOUR BARRIER BONDED & SEALED TO STEEL RHS
6. FULL FILL INSULATION
7. EXISTING GRP PANEL REMOVED & REFURBISHED ON-SITE AS NECESSARY.
8. EXISTING 127x63.5 RHS
9. SPACER
10. CUT EXISTING ALUMINIUM EXTRUDED PROFILE
11. REPLACEMENT INTERNAL GASKET
12. REPLACEMENT EXTERNAL GASKET
13. SCREW FIXING
14. L-BRACKET FIXED TO RHS TO SUPPORT HORIZONTAL RHS
15. EXISTING HORIZONTAL RHS 127x63.5
16. NEW INTERNAL GASKET
17. ARGON FILLED DOUBLE GLAZING SYSTEM

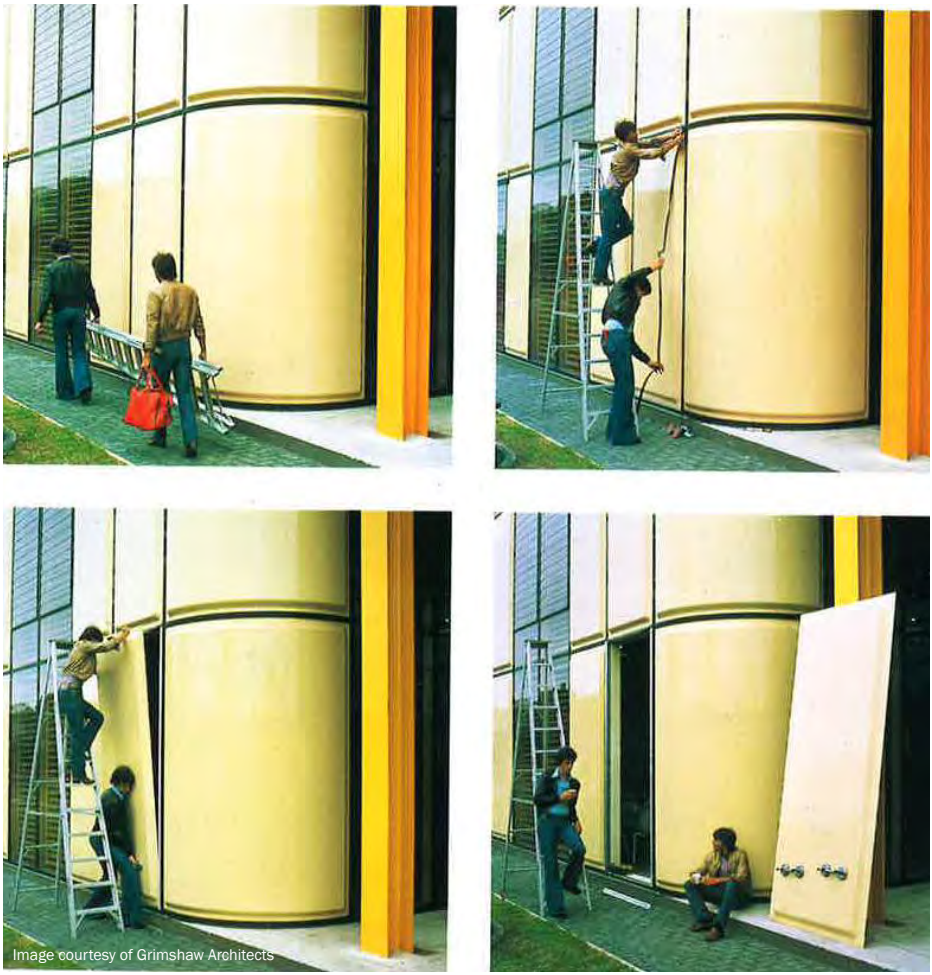


Image courtesy of Grimshaw Architects

Fun fact:
Each panels actually weighs 80kg - making the removal process, designed to be by two people, illegal by modern construction regulations

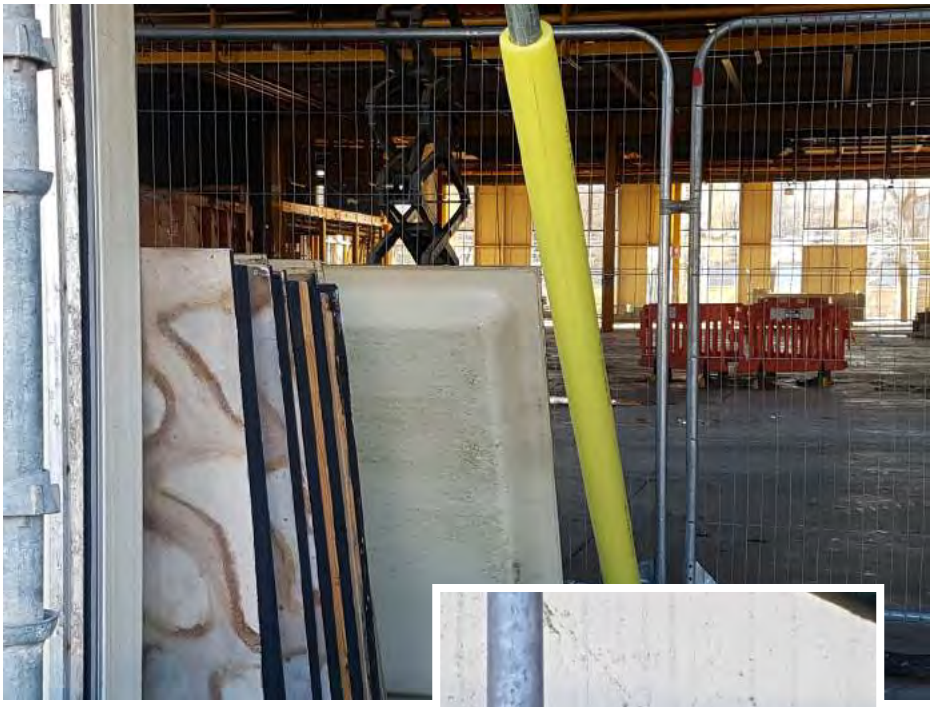
Facade

1976 photograph of modular facade being assembled vs. 2018 picture of removed cladding panels, revealing a retrofit ceiling

Pointing out how humidity has affected the building's facade

Demonstrating how the new double glazing unit fits into the profile - one glass pane is longer allowing it to fit within the exiting profile

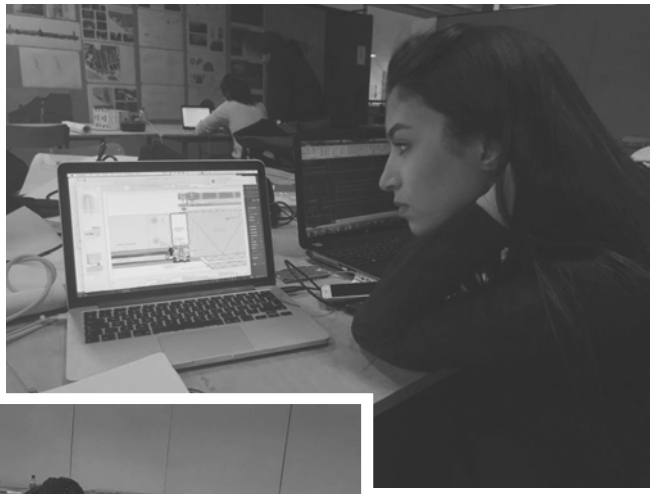
Facade



Extremely damaged panels are replaced with new ones. The panels which can be re-used, are to be clean and re-stuck together

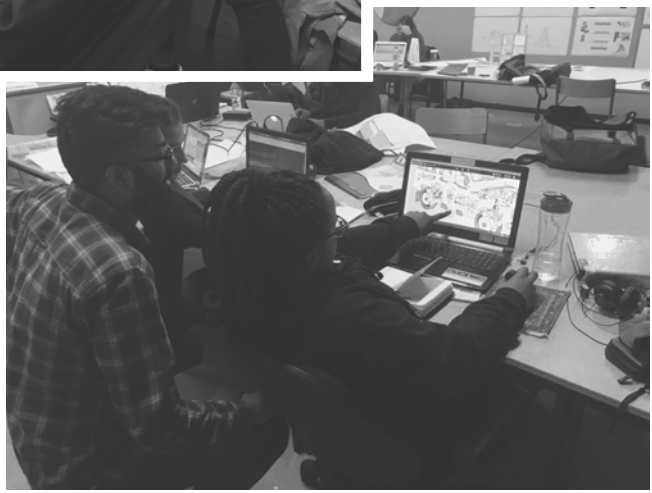
Holes had been made into the cladding panels to allow for the hot air to exit, as its concentration had begun to make the panels expand back in 1976

Appendix



Cross-checking details gathered from the information gathered from the site visit, and architectural drawings

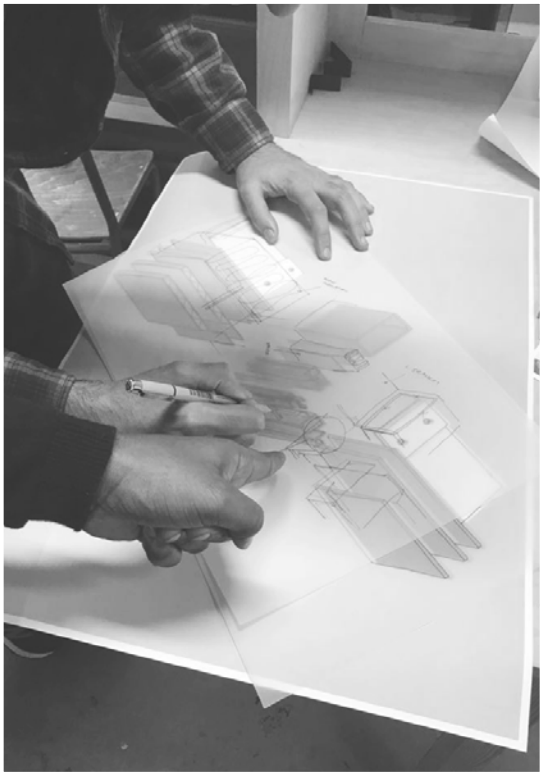
In coordination with each other, we were able to select crucial details to best communicate, through drawing, the intricateness of this project.



Drawing process

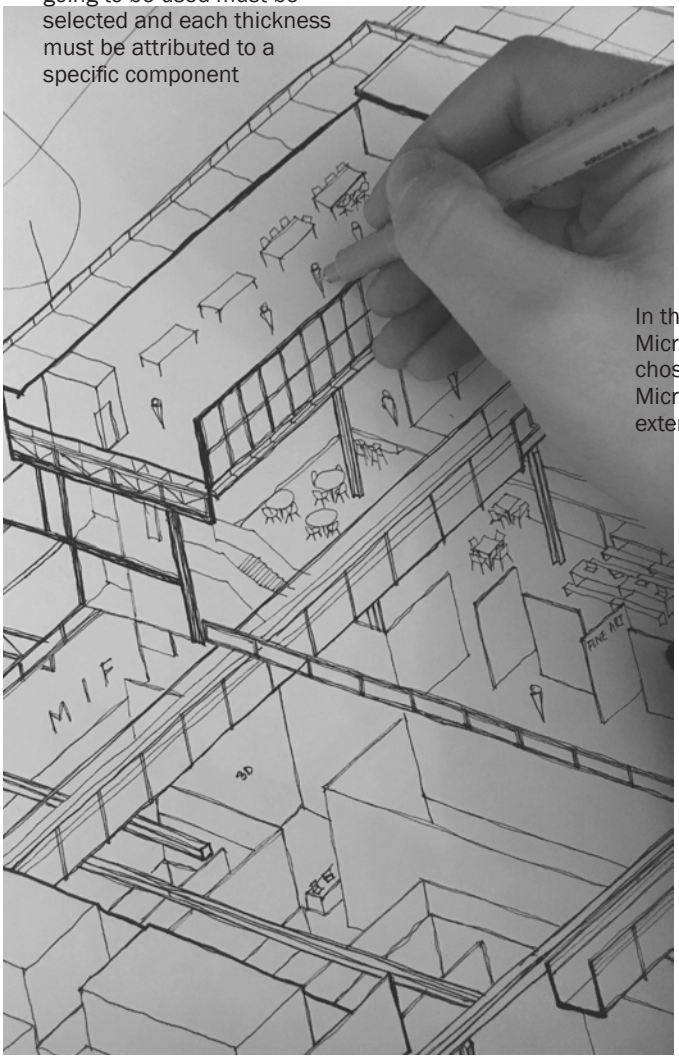
Several print tests were made to accurately see the angle, size and clarity of the details

Alterations were made as required to produce precise drawings, able to convey explicit chunks of information



Appendix

Before beginning to actually draw, the pens which are going to be used must be selected and each thickness must be attributed to a specific component



In this case, the thicker pen, Micron No.8 (0.50mm) was chosen for the cut lines. Micron No.3 (0.35mm) for external lines

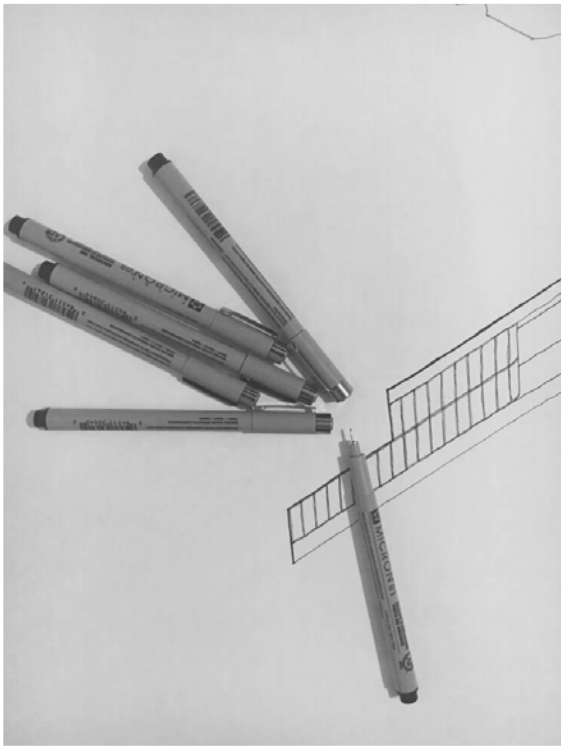
Finer details

Internal lines

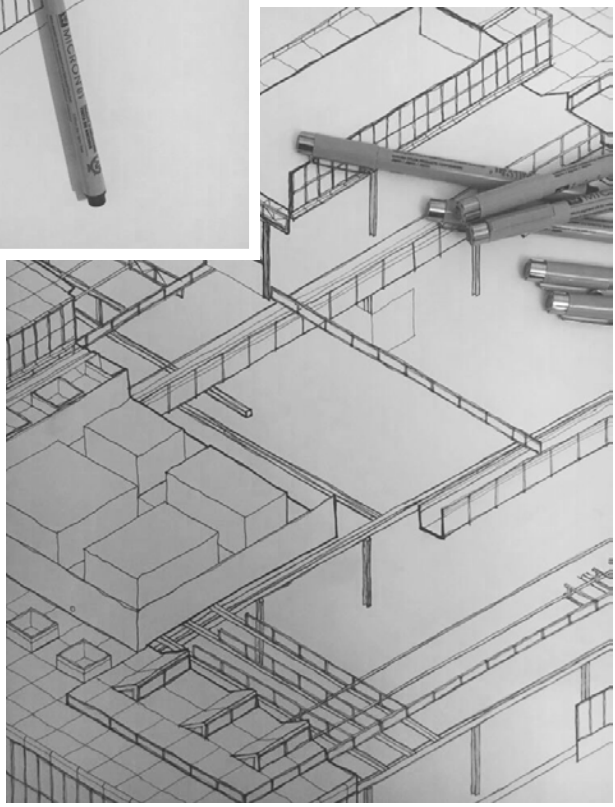
External lines

Cut lines

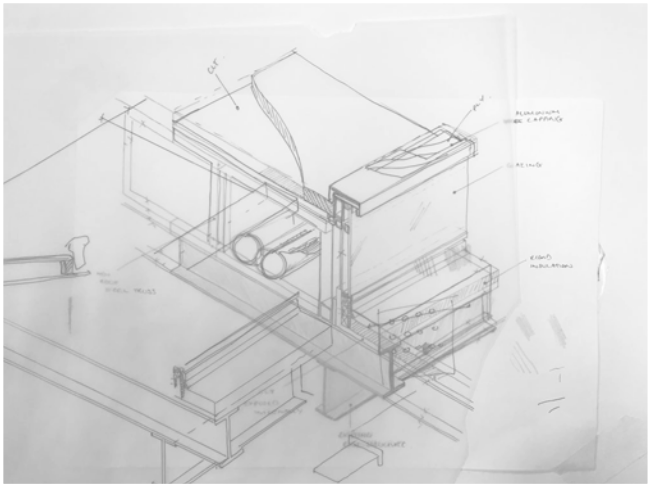
Drawing process



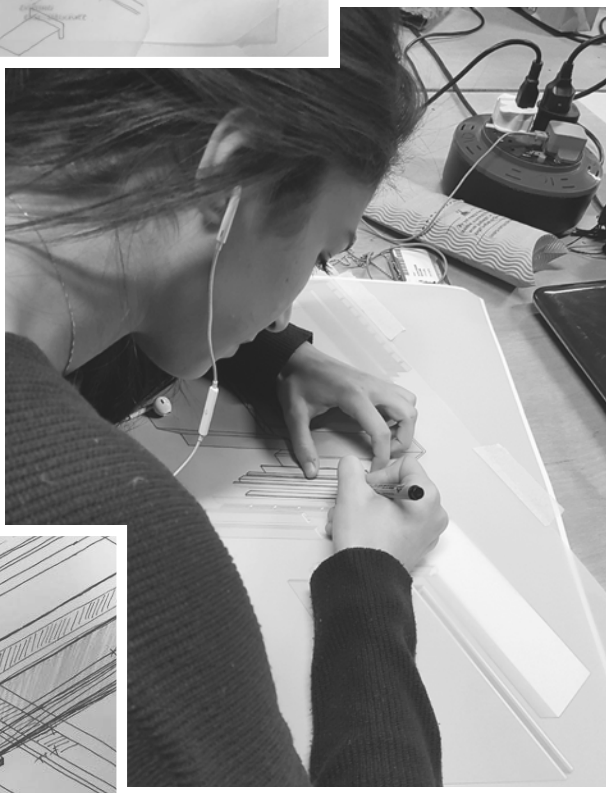
Micron No.2 for internal lines, and Micron No.005 (0,20mm) for finer details such as furniture and window frames



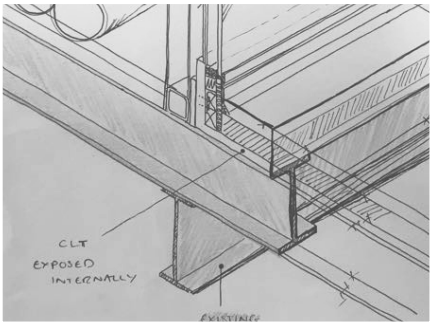
Appendix



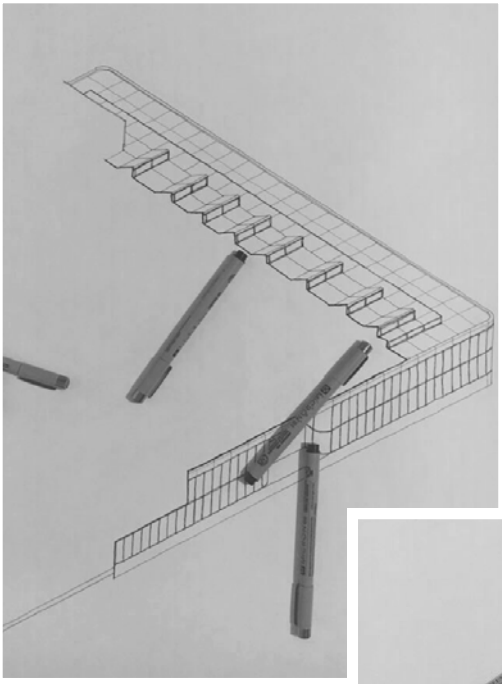
Great concentration is required



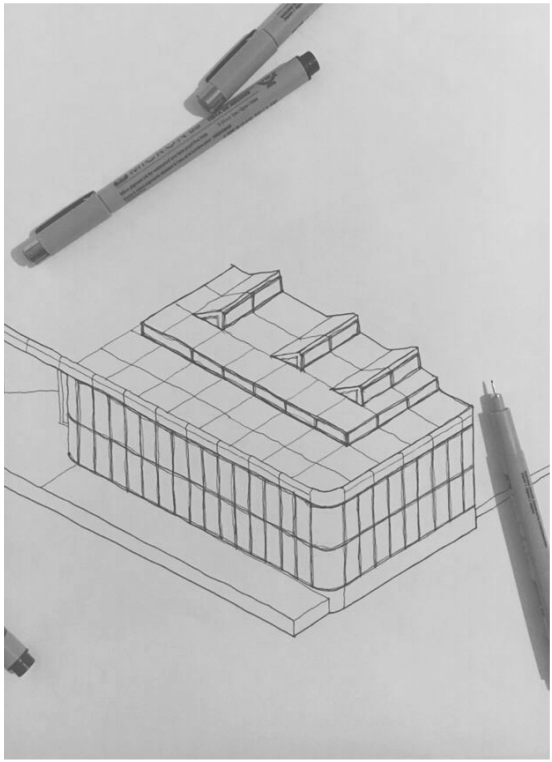
Quick annotations are made on some drawings which have to be revised in order to include certain smaller details which might have been missed



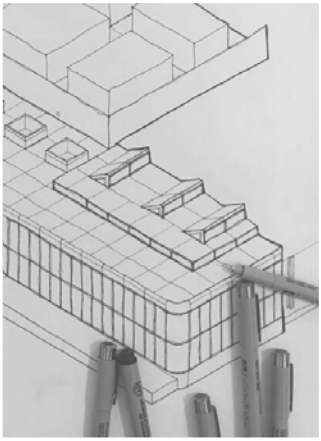
Drawing process

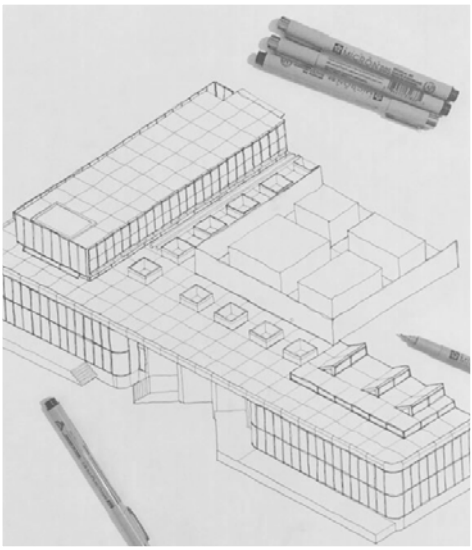


Progressional pictures are taken to document the developement of drawings



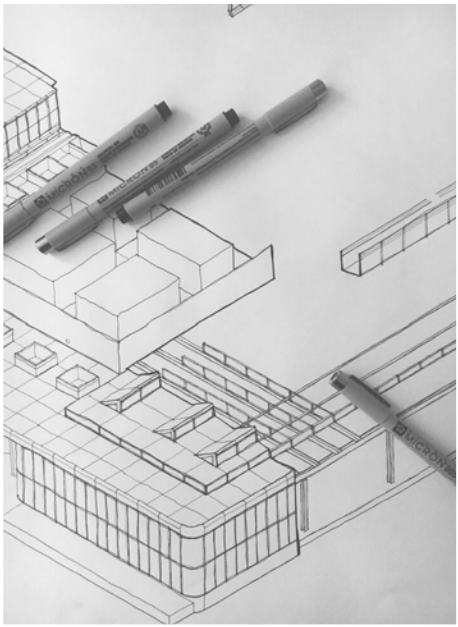
Appendix



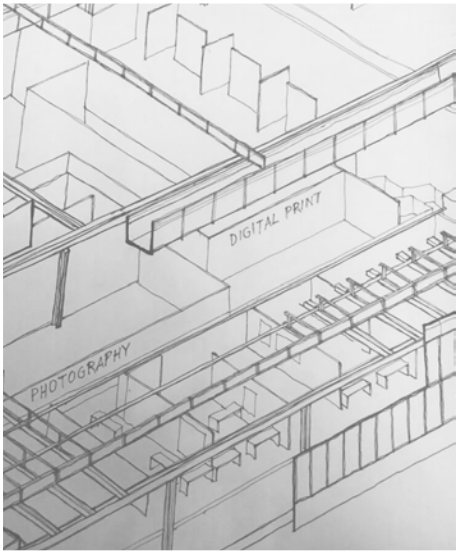


Through the elaboration of such detailed drawings, we were able to further understand the relationship between different components and how they come together as a whole

Drawing process



Clean hands and flat surfaces are a must to avoid any smudging or bumps which may ruin the drawing



Appendix

Due to its remote location, there are no great issues with transportation and the noise of works

Site Visit


HAZARD BOARD
SITE SAFETY MATTERS
HAZARD ACTIVITIES
SITE TEAM/FIRST AID
BLITZ ITEMS THIS MONTH
WEEK No.
WEEKS REMAINING:
SITE SPECIFIC INCENTIVES / CONTROLS
WILLMOTT DIXON

Inside this manual:

- *Herman Miller Action Factory*
- *Bath School of Art and Design*
- *Project Overview*
- *Planning Applications*
- *Change of Use*

- *Exclusive photos*
- *Site visits*
- *Interviews*
- *Detailed drawings*
- *D.I.Y!*

0 36000 29145 2

ISBN 1-55615-678-2
9 781556 156786

GROUP 6 ®