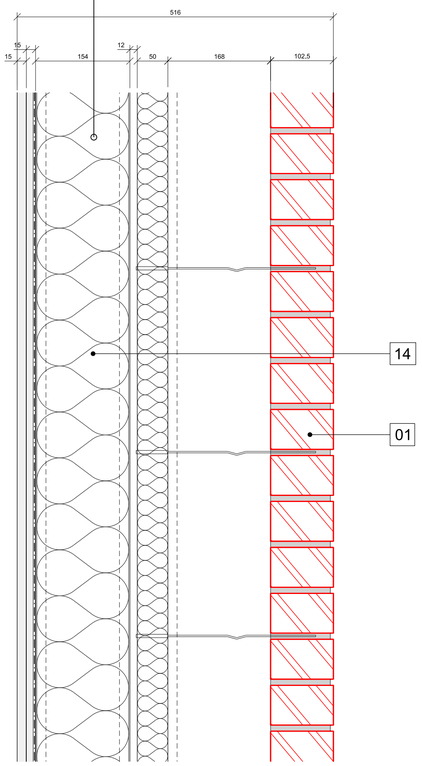
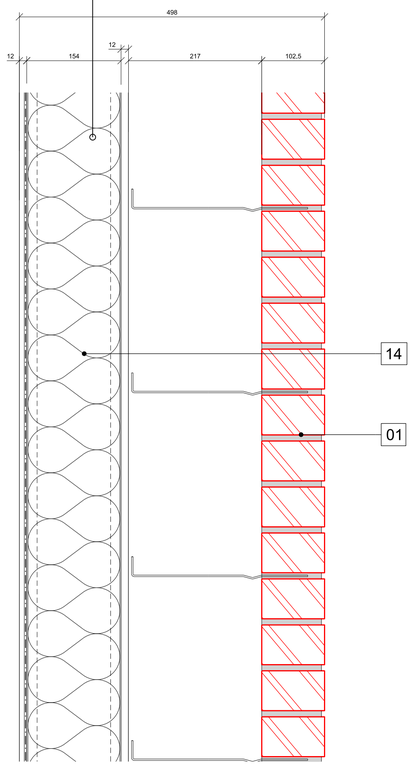
NOTE: ALL SFS DETAILS SHOWN INDICATIVELY. BUILD-UP AND SYSTEM PERFORMANCES ARE THE RESPONSIBILITY OF THE SPECIALIST SUBCONTRACTOR. REFER TO SPECIALIST SUBCONTRACTOR DETAILS.

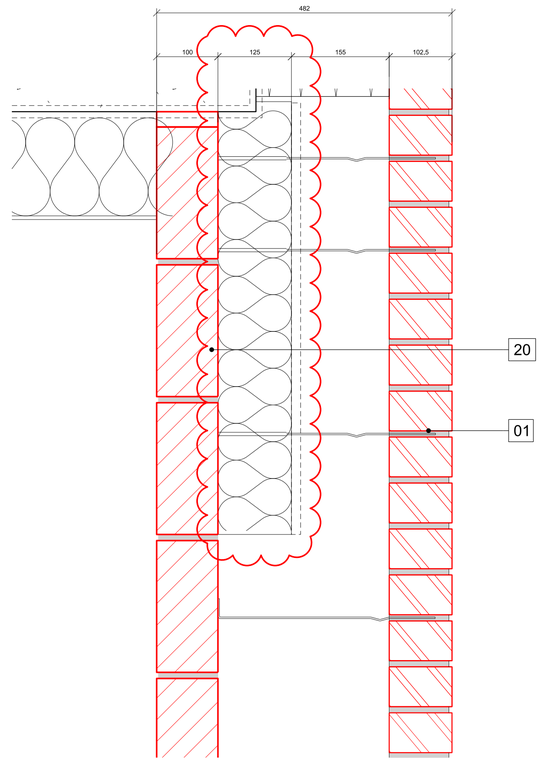


01 Section 1- Amenity Space and Commercial Unit
1:5 at A1

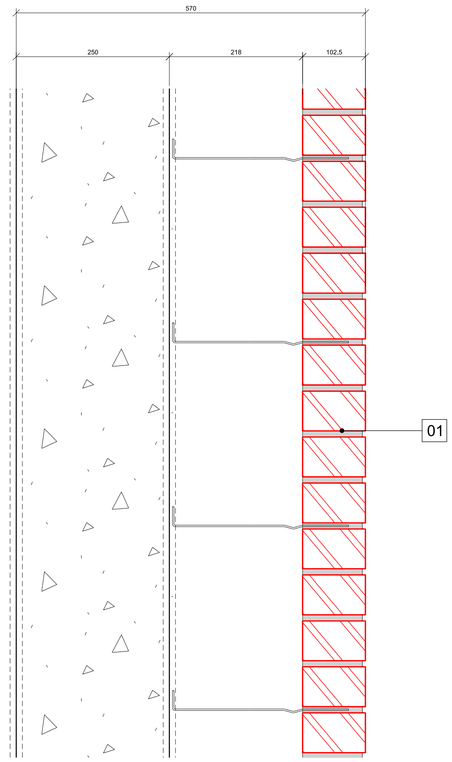
NOTE: ALL SFS DETAILS SHOWN INDICATIVELY. BUILD-UP AND SYSTEM PERFORMANCES ARE THE RESPONSIBILITY OF THE SPECIALIST SUBCONTRACTOR. REFER TO SPECIALIST SUBCONTRACTOR DETAILS.



02 Section 2- Ground Floor Plantroom
1:5 at A1



03 Section 3- Lower Ground Blockwork
1:5 at A1



04 Section 4- Lower Ground Concrete
1:5 at A1

KEY

01 MBR-102 Brickwork
02 EWS-412 Aluminium coping- colour TBC
03 Aluminium horizontal sill / flashing to curtain wall cladding
04 Aluminium rain defence louvres- colour to match unitised facade
05 BMU escape gantry
06 Unitised Facade by KFK- EWS 01
07 Stick System Facade by KFK- EWS 03
08 External louvred door to match louvres
09 Solid external door - colour to match unitised facade
10 Existing brick wall
11 River wall
12 Windows- by KFK
13 Fire stopping by others
14 EWS-901 SFS Backing wall to specialist design
15 Aluminium skirting
16 Reinstated brickwork to match existing river wall brickwork
17 RWS-151 Attenuation tank outlet pipe
18 Cavity Closer
19 Visible movement joint performance to SE specification - appearance to architect's specification
20 MBL-113 100mm blockwork
21 Roofing board & insulation by others
22 Aluminium cladding & flashing to abut adjacent building
23 Steel angle facade lintel to SE specification
24 Rainwater goods to M&E Engineer's specification - appearance to architect's specification
25 Gutter system to specialist subcontractor design
26 Proprietary masonry support channel to SE specification
27 Horizontal flashing to proposed brickwork
28 Brickwork cover piece- colour to match unitised facade
29 Framed Glazed Louvre Smoke Extract AOV

DETAILS KEY:

BRICKWORK PACKAGE
KFK FACADE
ELEMENTS BY OTHERS
SLAB EDGE
INDICATIVE SACRIFICIAL LOUVRES

Unitised cladding information shown is from SH G251 design intent information issued March 2018. Refer to KFK information for facade details. Information is subject to further design development and coordination and production of external door and louvre packages. Refer to Structural Engineers information for masonary supports/ lintels etc

NOTE:
This drawing is copyright. Do not scale off dimensions. All dimensions to be checked on site by contractor.
Contractor to report any dimensional discrepancies, errors or omissions prior to commencing on site.
Please note that all layouts and areas are indicative and may be subject to change in line with the coordination of structure, services, fire requirements, survey information and easements.
Information is also subject to change following further design development and building tolerances, or events outside the architect's control. The architect accepts no responsibility for any resulting implications or decisions, commercial or otherwise, made on the basis of this information.

Rev	Date	Description
00	29.03.2019	First Issue
01	04.07.2019	Details amended, SFS shown, key revised
02	17.07.2019	CONSTRUCTION ISSUE

Project Title: New Wakefield Street Manchester
Drawing Title: Brickwork Details Sheet 001
Job No: 10109
Scale: 1:10 @ A1
Date: Mar 2019
Status: CONSTRUCTION
Drawing No: 10109-A-G250-D-TY-001
Revision: 02

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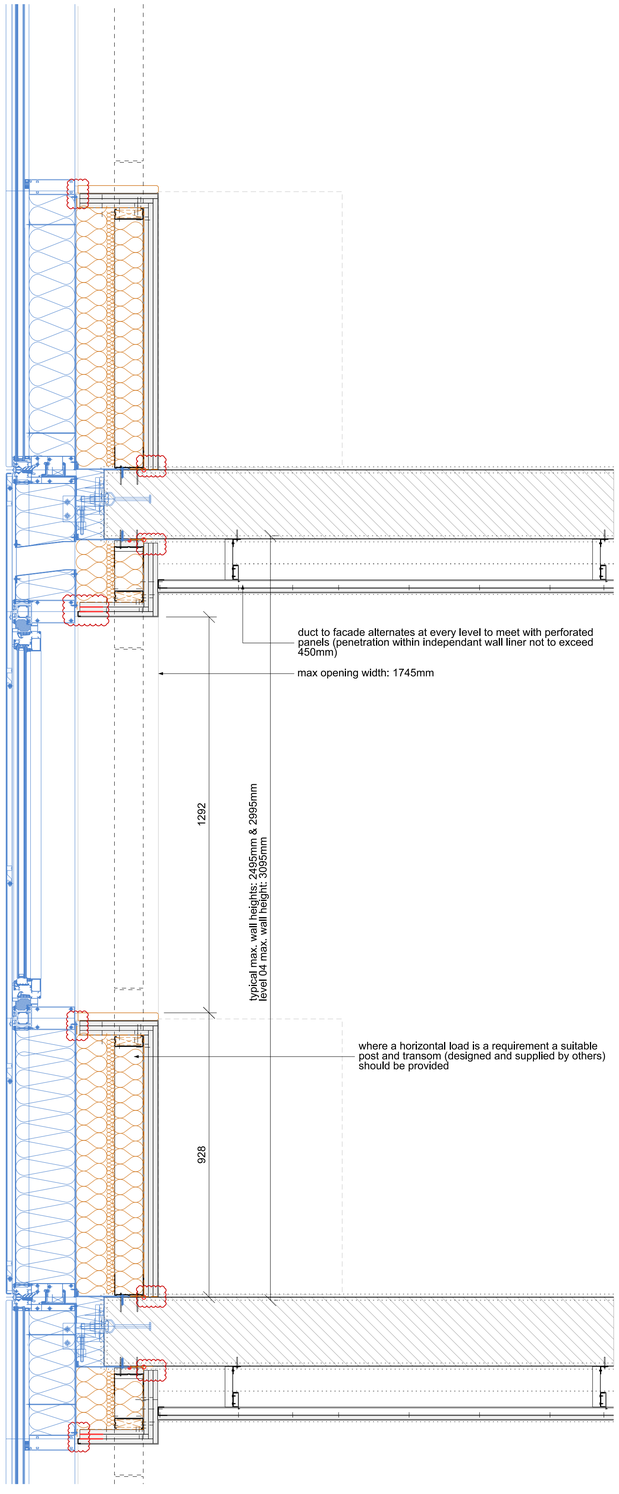
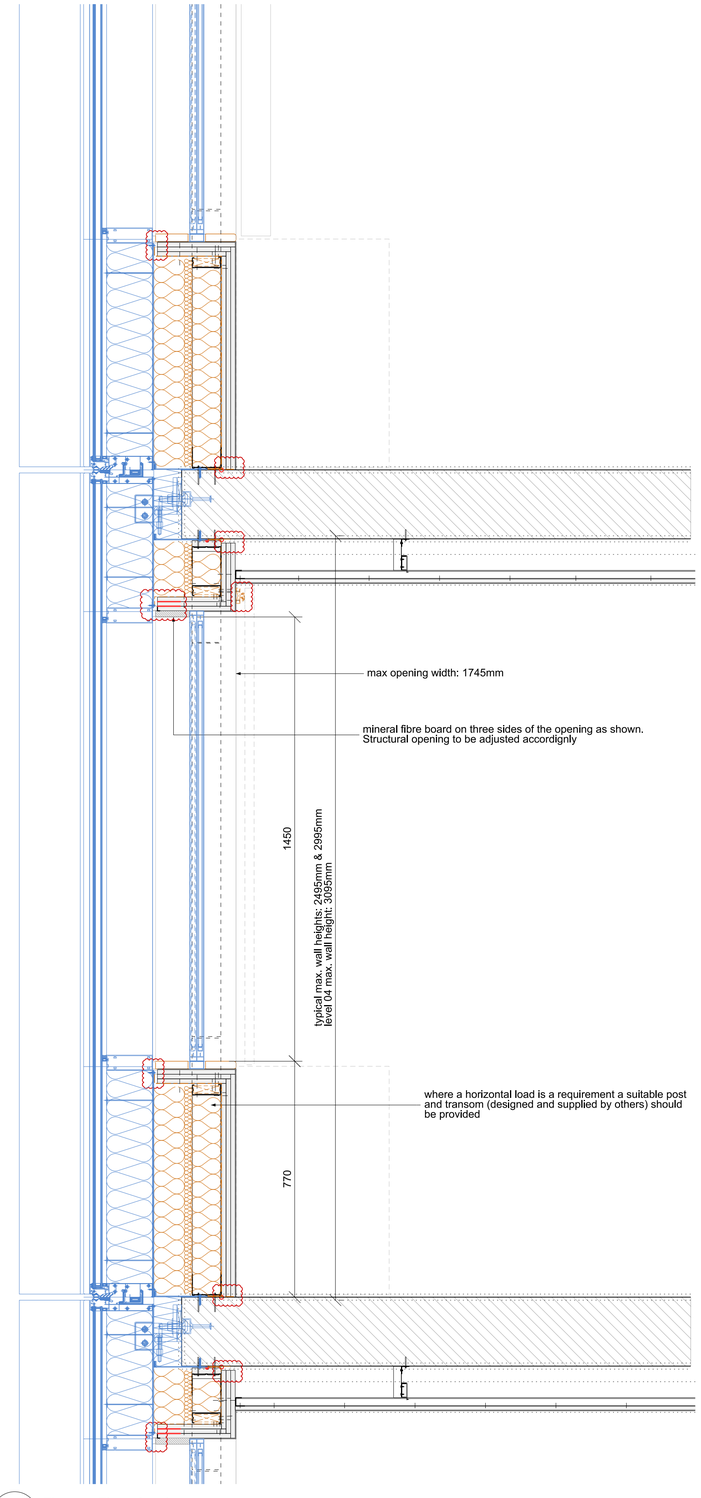


01 Floor to Floor Section
Kitchens / Studios Non-transfer Floors



02 Floor to Floor Section
Bedrooms Non-transfer Floors

NOTES

Drawing is to be read in conjunction with Architectural Specification and Technical Reference Sheet (T-Sheet).

HEALTH, SAFETY AND ENVIRONMENT INFORMATION

Based on the use of experienced and competent contractors working to an approved method statement, unusual residual hazards / risks are listed on the Designer Residual Significant Risk Register and highlighted where appropriate on the relevant drawing or the statement "NO UNUSUAL RISKS" applies.

For setting out plans refer to 10109-A-G252-P drawing series.

For drylining partition schedule refer to 10109-A-G252-SCH-001

For socket setting out plans refer to 10109-A-G530 drawing series.

Where RWPs or SVPs are within wall construction at risers, ensure studs do not touch pipes.

Tolerances:
Concrete slabs & columns +/- 10mm
Concrete core +/- 25mm

KEY

* 'High humidity' areas are bathrooms, shower rooms and kitchen areas

- Gyproc FireStrip (continuous beads)
- Gyproc Sealant (continuous beads)
- by others

NOTE:

This drawing is copyright. Do not scale off dimensions. All dimensions to be checked on site by contractor.

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Rev	Date	Description
00	31.08.2018	First Issue
01	14.12.2018	Annotation revised / curtain support revised
02	13.03.2019	design for secondary glazing included
03	06.08.2019	revised as per 11.07 drylining workshop DT coordination
04	09.08.2019	Issued For Construction
05	14.08.2019	Revised to slab fixing coordination received from B+K and to match detail information for reference
06	19.11.2019	Termination of VCL and flexible joint amended as requested by B&K. Curtain track revised.

Project Title
New Wakefield Street
Manchester

Drawing Title
Generic internal wall details
Wall lining
Envelope sections - high acoustic zone

Job No 10109
Scale 1:10 @ A1 / 1:20 A3
Date August 2018

Status
For Construction

Drawing No 10109-A-G252-D-400-105
Revision 06

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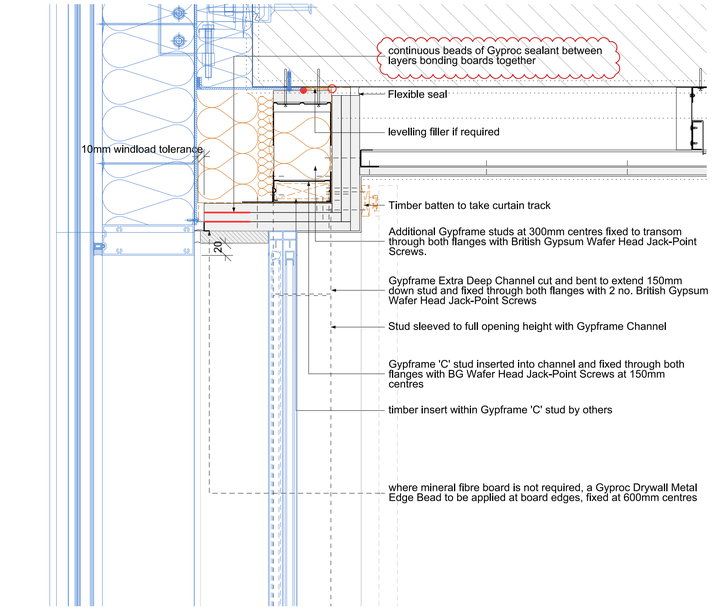
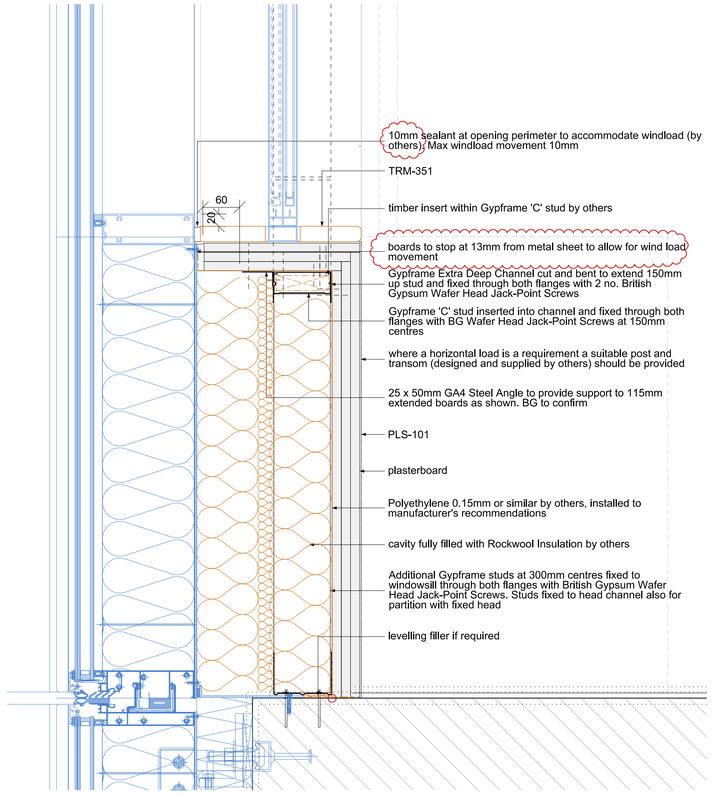
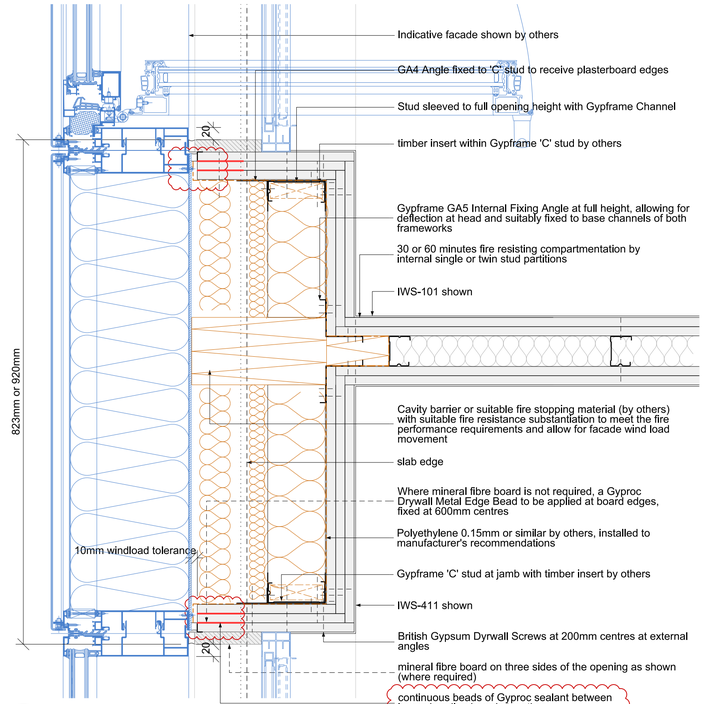


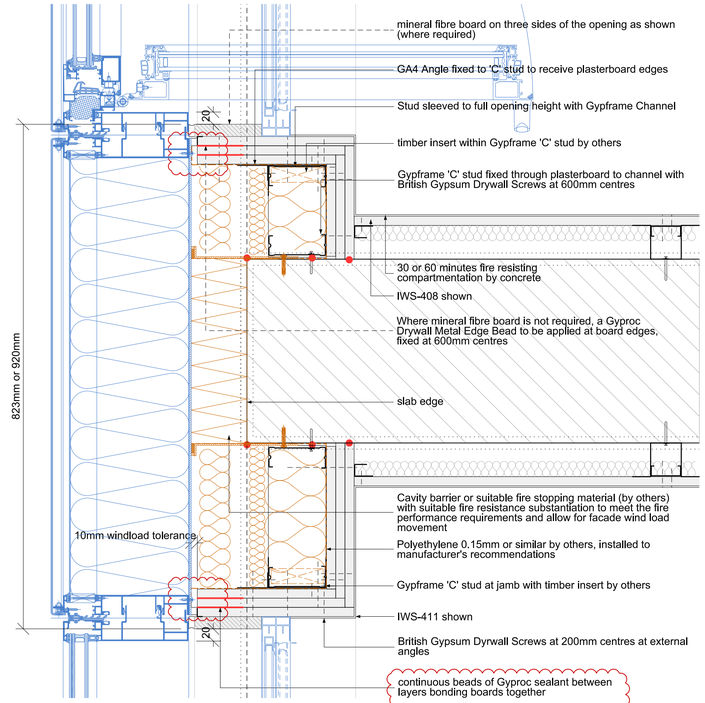
01 A-G252 D-400-106 — Head section detail
Envelope wall lining



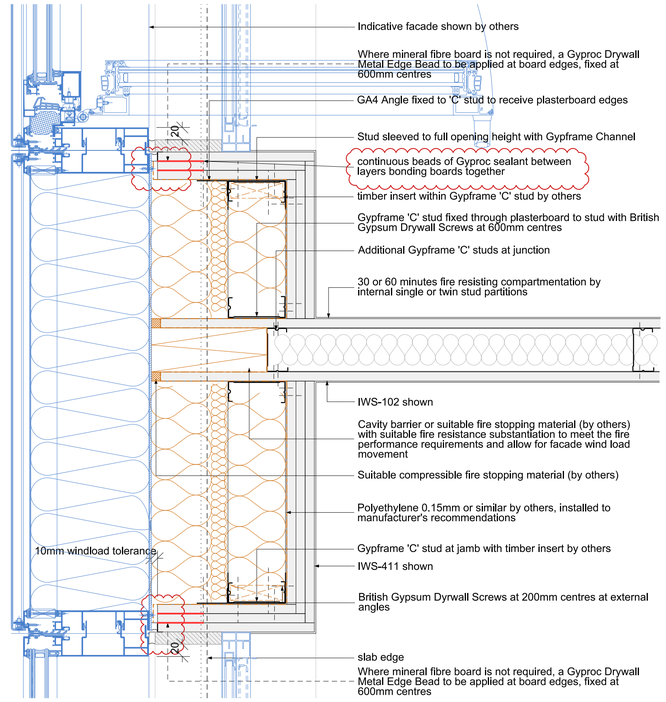
02 A-G252 D-400-106 — Base section detail
Envelope wall lining



03 A-G252 D-400-106 — Abutment with dry lining partition - plan detail
Envelope wall lining



04 A-G252 D-400-106 — Abutment with concrete column - plan detail
Envelope wall lining



05 — Abutment with dry lining partition - plan detail (GypWall ROBUST)
Envelope wall lining

NOTES

Drawing is to be read in conjunction with Architectural Specification and Technical Reference Sheet (T-Sheet).

HEALTH, SAFETY AND ENVIRONMENT INFORMATION

Based on the use of experienced and competent contractors working to an approved method statement, unusual residual hazards / risks are listed on the Designer Residual Significant Risk Register and highlighted where appropriate on the relevant drawing or the statement "NO UNUSUAL RISKS" applies.

For setting out plans refer to 10109-A-G252-P drawing series.

For drylining partition schedule refer to 10109-A-G252-SCH-001

For socket setting out plans refer to 10109-A-G530 drawing series.

Where RWPs or SVPs are within wall construction at risers, ensure studs do not touch pipes.

Tolerances:
Concrete slabs & columns +/- 10mm
Concrete core +/- 25mm

KEY

* 'High humidity' areas are bathrooms, shower rooms and kitchen areas

- Gyproc FireStrip (continuous beads)
- Gyproc Sealant (continuous beads)
- by others

NOTE:

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Rev	Date	Description
00	31.08.2018	First Issue
01	14.12.2018	Annotation revised
02	13.03.2019	design for secondary glazing included
03	10.09.2019	Revised as per current coordination and BG information, status changed to For Construction
04	19.11.2019	Termination of VCL and flexible joint amended as requested by B&K. Curtain track revised.

Project Title
New Wakefield Street
Manchester

Drawing Title
Generic internal wall details
Wall lining
Envelope details

Job No 10109 | Scale 1:5 @ A1 / 1:10 @ A3 | Date August 2018

Status For Construction | Drawing No 10109-A-G252-D-400-106 | Revision 04

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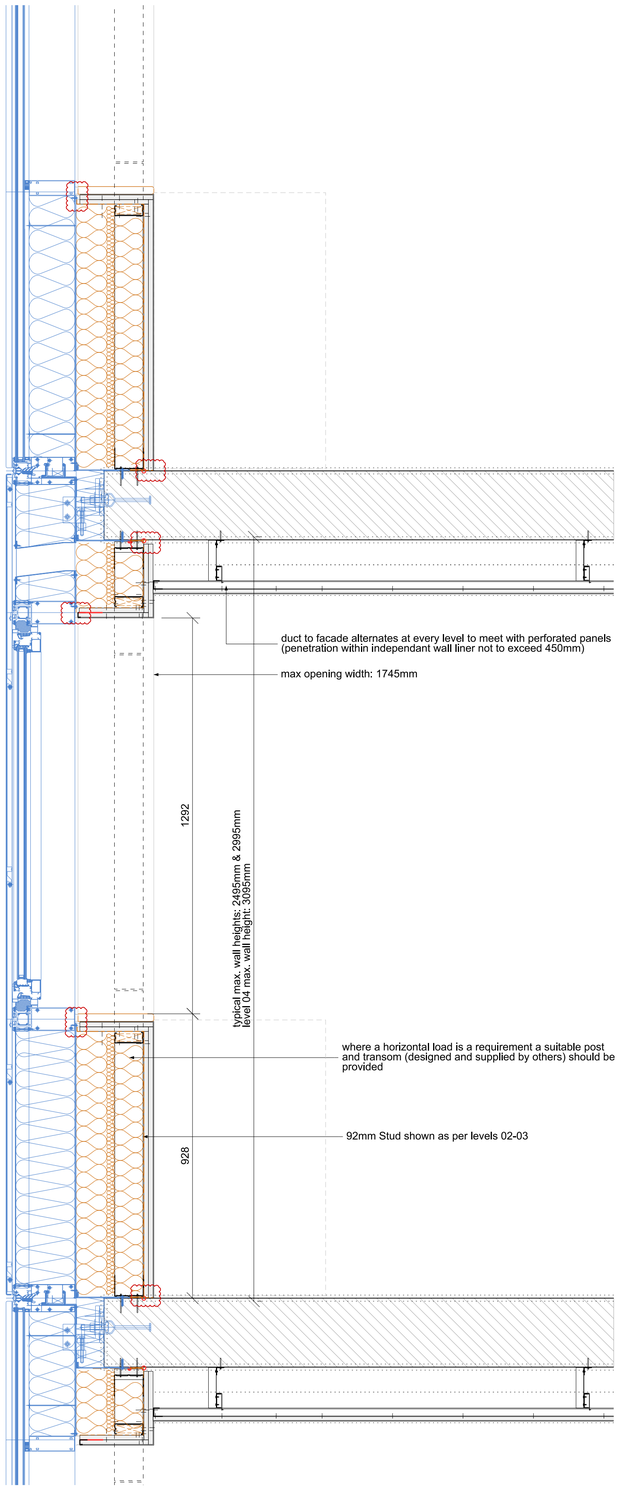
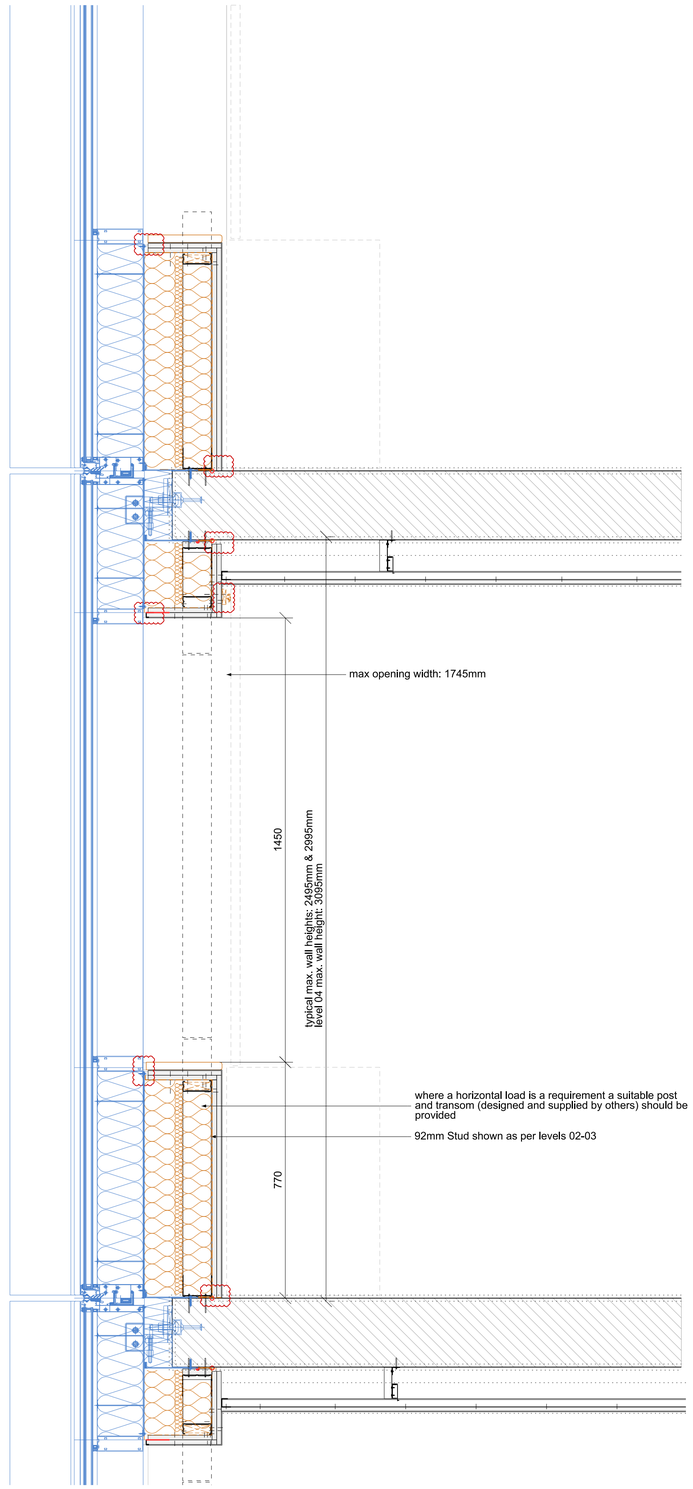


01 A-G252 D-400-107 Floor to Floor Section
Kitchens / Studios Non-transfer Floors



02 A-G252 D-400-107 Floor to Floor Section
Bedrooms Non-transfer Floors

NOTES

Drawing is to be read in conjunction with Architectural Specification and Technical Reference Sheet (T-Sheet).

HEALTH, SAFETY AND ENVIRONMENT INFORMATION

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For setting out plans refer to 10109-A-G252-P drawing series.

For drylining partition schedule refer to 10109-A-G252-SCH-001

For socket setting out plans refer to 10109-A-G530 drawing series.

Where RWPs or SVPs are within wall construction at risers, ensure studs do not touch pipes.

Tolerances:
Concrete slabs & columns +/- 10mm
Concrete core +/- 25mm

KEY

* 'High humidity' areas are bathrooms, shower rooms and kitchen areas

Facade and services information shown in blue and green is indicative. For further information refer to relevant Subcontractor's drawings. Elements shown in orange to be assigned by B&K.

- by others

BG - British Gypsum
CTN - Curtins
SH - SimpsonHaugh

GENERAL QUERIES

- DFC, Cladtech, KFK to comment on fire performance
- RBA & Rockwool to confirm acoustic performance
- Rockwool, HESimm, Cladtech to confirm thermal performance
- BG, B&K, KFK, Rockwool, CTN, HESimm to comment on robustness & buildability GENERAL QUERIES

NOTE:

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Information is also subject to change following further design development and building tolerances, or events outside the architect's control. The architect accepts no responsibility for any resulting implications or decisions, commercial or otherwise, made on the basis of this information.

Rev	Date	Description
00	13.03.2019	First Issue
01	14.08.2019	Issued For Construction / Revised to slab fixing coordination received from B+K and to match detail information for reference
02	19.11.2019	Termination of VCL and flexible joint amended as requested by B&K. Curtain track revised.

Project Title
New Wakefield Street
Manchester

Drawing Title
Generic internal wall details
Wall lining
Envelope sections - typical acoustic zone

Job No	Scale	Date
10109	1:10 @ A1 / 1:20 A3	March 2019

Status: For Construction
Drawing No: 10109-A-G252-D-400-107
Revision: 02

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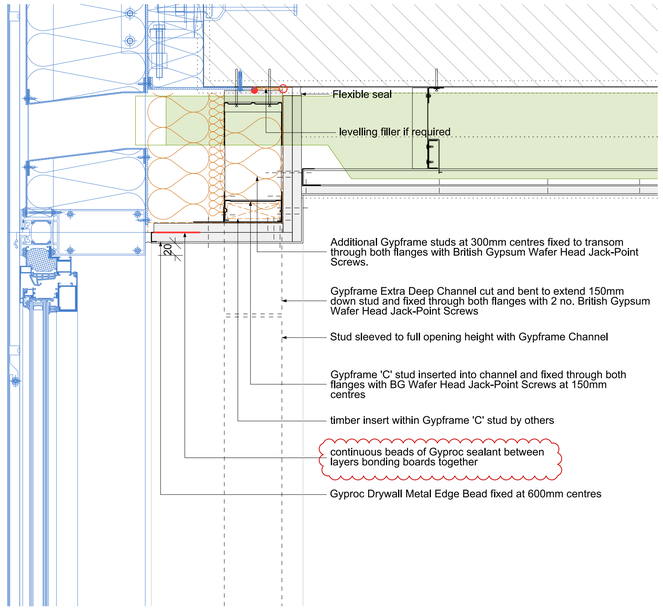
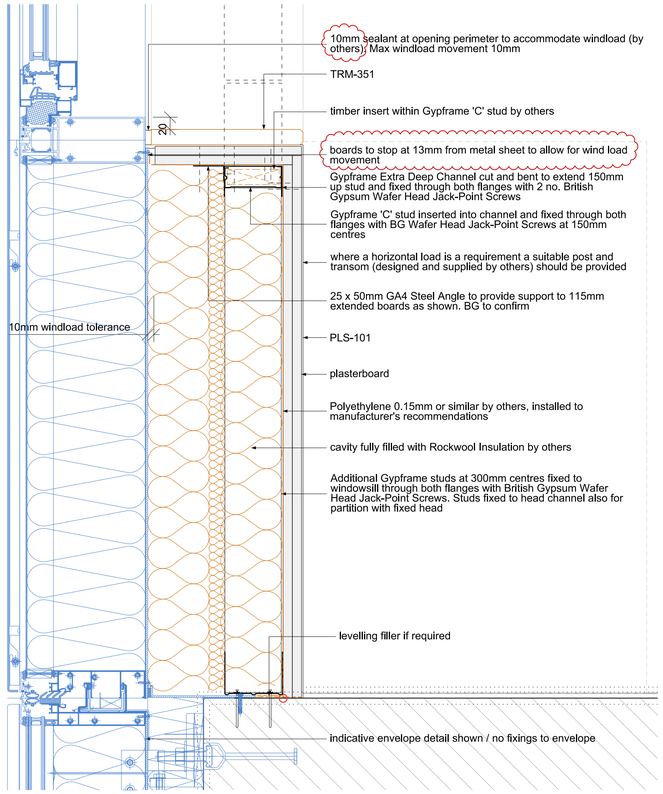
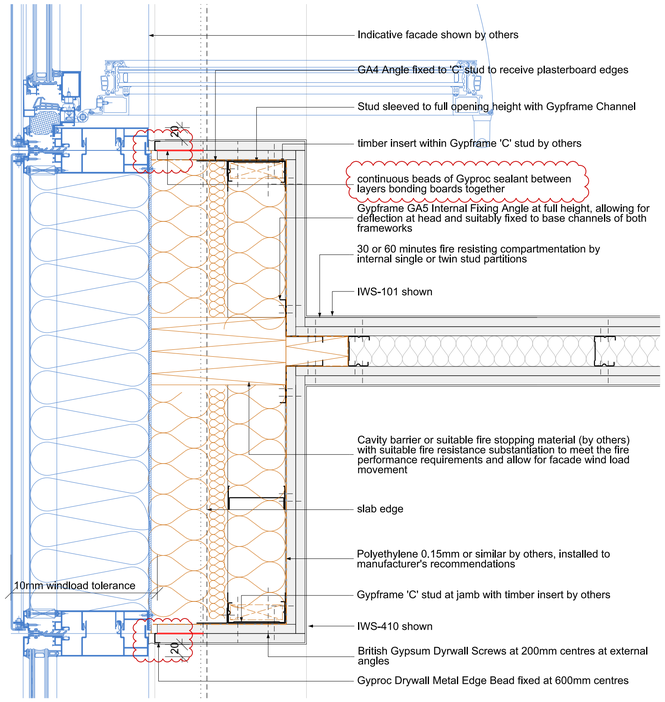


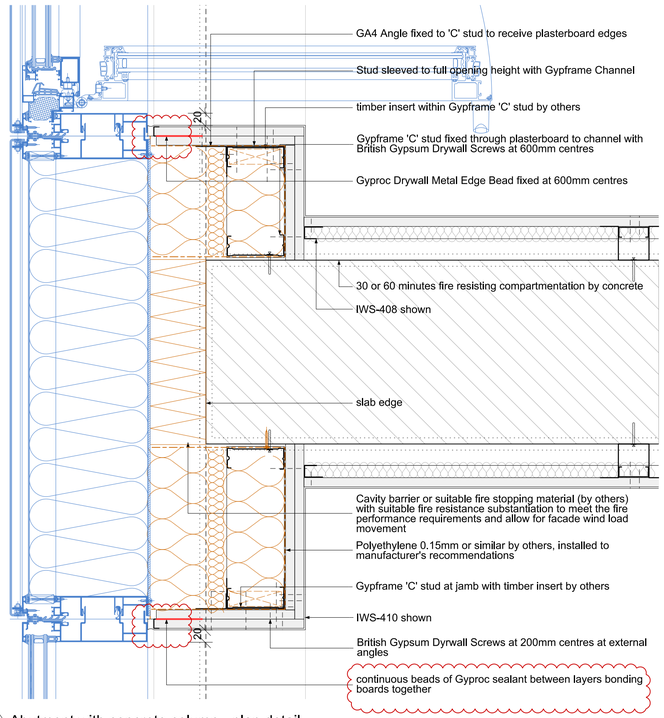
01 Window opening head section detail
Envelope wall lining



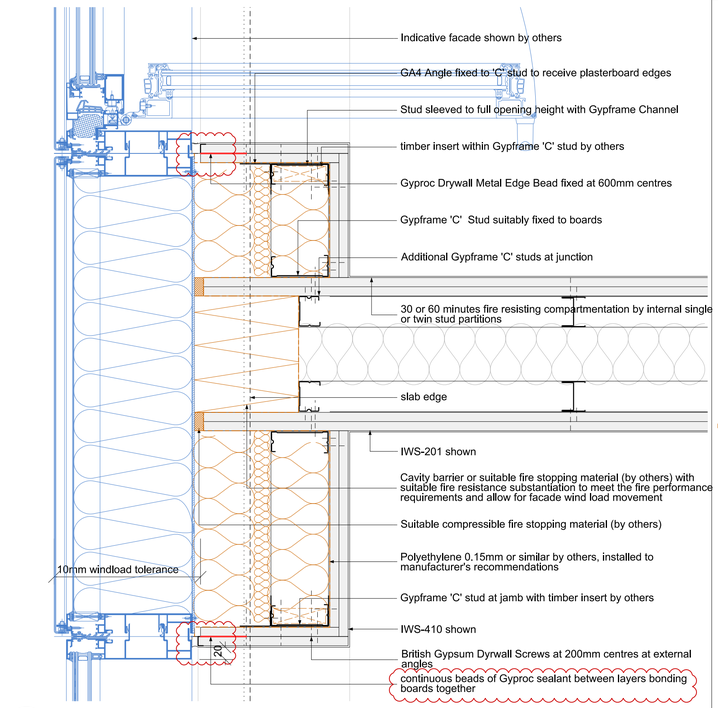
02 Window opening base section detail
Envelope wall lining



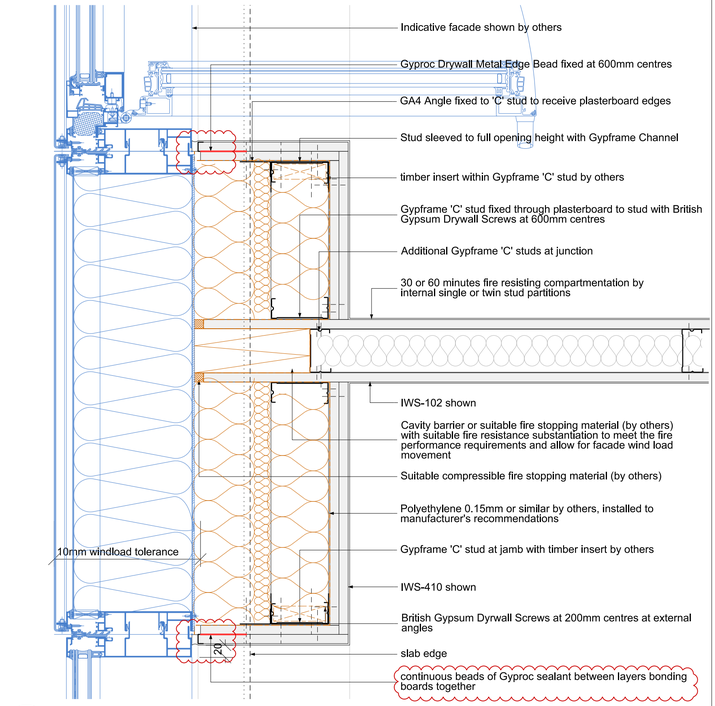
03 Abutment with dry lining partition - plan detail (GypWall CLASSIC)
Envelope wall lining



04 Abutment with concrete column - plan detail
Envelope wall lining



05 Abutment with dry lining partition - plan detail (GypWall QUIET)
Envelope wall lining



06 Abutment with dry lining partition - plan detail (GypWall ROBUST)
Envelope wall lining

NOTES

Drawing is to be read in conjunction with Architectural Specification and Technical Reference Sheet (T-Sheet).

HEALTH, SAFETY AND ENVIRONMENT INFORMATION

Based on the use of experienced and competent contractors working to an approved method statement, unusual residual hazards / risks are listed on the Designer Residual Significant Risk Register and highlighted where appropriate on the relevant drawing or the statement "NO UNUSUAL RISKS" applies.

For setting out plans refer to 10109-A-G252-P drawing series.

For drylining partition schedule refer to 10109-A-G252-SCH-001

For socket setting out plans refer to 10109-A-G530 drawing series.

Where RWPs or SVPs are within wall construction at risers, ensure studs do not touch pipes.

Tolerances:

Concrete slabs & columns	+/- 10mm
Concrete core	+/- 25mm

KEY

* 'High humidity' areas are bathrooms, shower rooms and kitchen areas

- Gyproc FireStrip (continuous beads)
- Gyproc Sealant (continuous beads)
- by others

NOTE:

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Rev	Date	Description
00	13.03.2019	First Issue
01	09.08.2019	Revised as per BG information received
02	10.09.2019	Drywall Metal Edge bead added
03	19.11.2019	Termination of VCL and flexible joint amended as requested by B&K. Curtain track revised.

Project Title
New Wakefield Street
Manchester

Drawing Title
Generic internal wall details
Wall lining
Envelope details

Job No	Scale	Date
10109	1:5 @ A1 / 1:10 @ A3	March 2019

Status
For Construction

Drawing No
10109-A-G252-D-400-108

Revision
03

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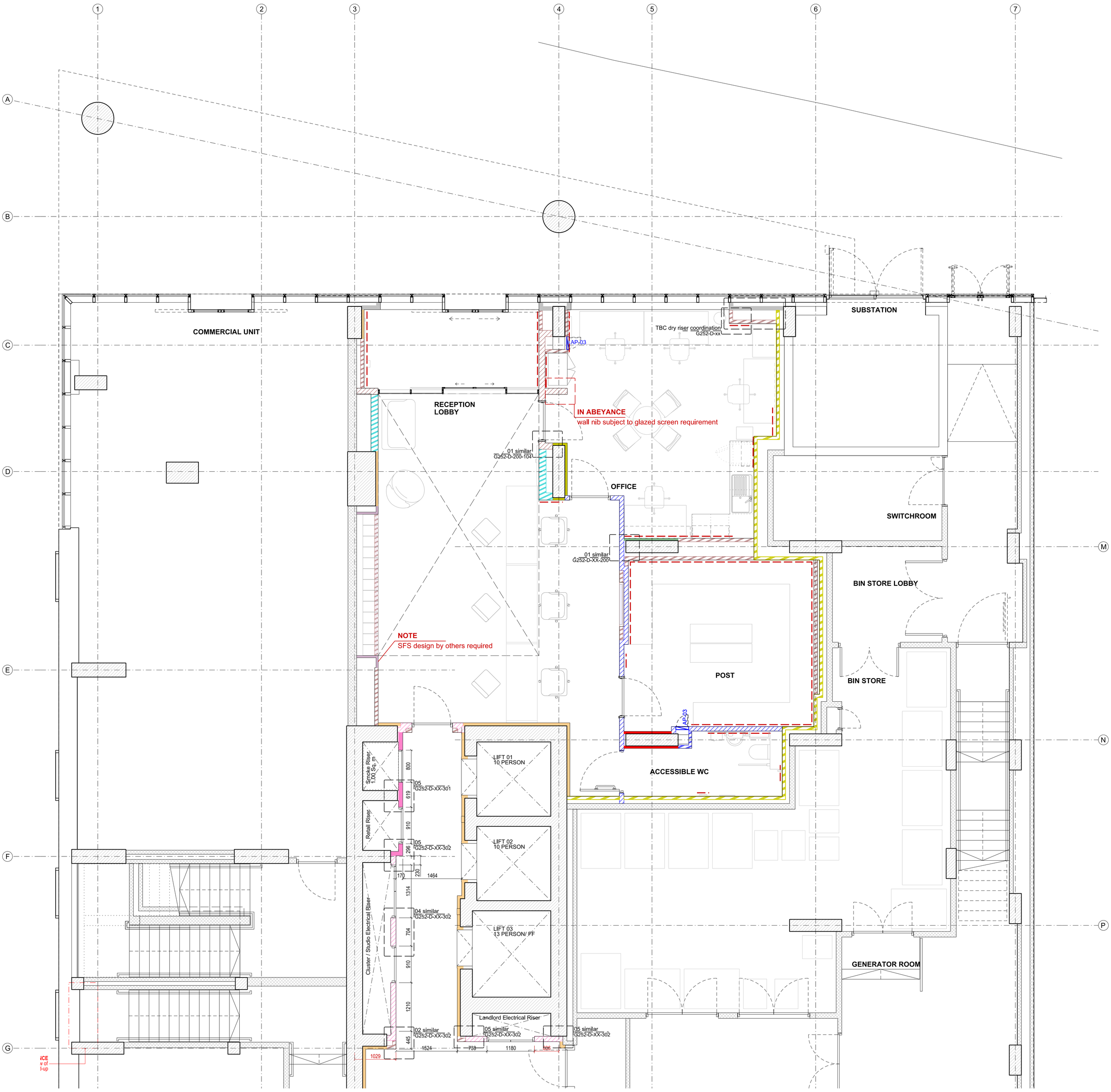

WALL TYPE KEY

Single Stud Walls
- IWS-101
- IWS-102
- IWS-103
- IWS-104
- IWS-105
- IWS-106
- IWS-107

Twin Stud Walls
- IWS-201
- IWS-202
- IWS-203
- IWS-204
- IWS-205
- IWS-206
- IWS-207
- IWS-208
- IWS-209
- IWS-210
- IWS-211
- IWS-212
- IWS-213
- IWS-271

Shaftwall
- IWS-301
- IWS-302

Linings
- IWS-401
- IWS-402
- IWS-403
- IWS-404
- IWS-405
- IWS-406
- IWS-407
- IWS-408
- IWS-409
- IWS-410 plasterboard lining to envelope
- IWS-411 plasterboard lining to envelope
- IWS-412
- IWS-413
- IWS-414 plasterboard lining to envelope
- IWS-415
- IWS-416
- IWS-417
- IWS-418
- IWS-419
- IWS-471
- IWS-472

- Blockwork
- Plywood pattress
- Surface fixed timber batten extended 100mm either side of opening to take curtains
- Fire-stop with thermal break by others
- RED — Dimension to grid
- GREEN — Setting out from face of board to extent of bathroom pod
- BLUE — Dimension to centre of wall access panel
- ORANGE — Dimension to centre of service penetration
- CYAN — Dimension to IWS-410 / IWS-411
- Reinforced windowsill
- AP-03 — 300 x 300 wall access panel
- A — service penetration size 'A'
- B — service penetration size 'B'

NOTES

When columns run parallel to slab edge, thermal insulation to run behind column on the envelope side.

IWS-271 & IWS-471 part of sheltered weathertight line subject to coordination with suppliers and Ameon

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All dimensions to be checked on site by contractor.
Contractor to report any dimensional discrepancies, errors or omissions prior to commencing on site.

Drawing to be read in conjunction with with structural, fire, mechanical, electrical and public health design reports.

Health and safety information:
Based on the use of experienced and competent contractors working to an approved method statement. Unusual, residual hazards / risks are listed on the Residual Significant Risk Register or the statement 'no unusual risks' applies.

North

Rev	Date	Description
00	14.09.2018	First Issue
01	14.12.2018	Revised to new GA information
02	25.01.2019	Dimensions included
03	04.10.2019	Revised as per riser door rationalisation requested by B+K
04	09.04.2020	Revised to current layout

Project Title
New Wakefield Street
Manchester

Drawing Title
Internal Wall Setting Out Plan
Ground Floor Level Sheet 01 of 02

Job No 10109 | Scale 1:50@A1 | Date Sept. 2018

Status
Information

Drawing No 10109-A-G252-P-00-001 | Revision 04

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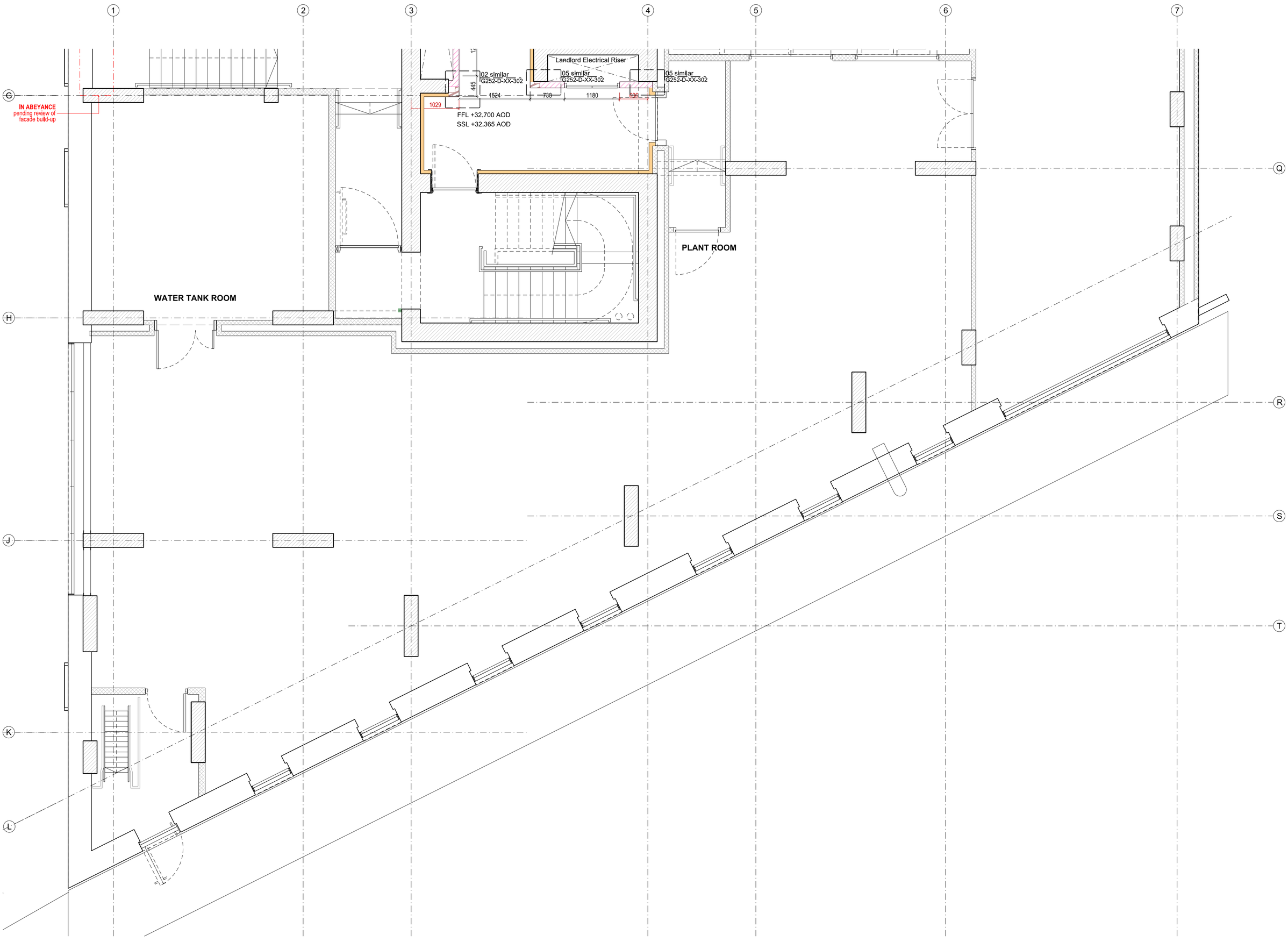

WALL TYPE KEY

Single Stud Walls
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- IWS-107

Twin Stud Walls
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- IWS-202
- IWS-203
- IWS-204
- IWS-205
- IWS-206
- IWS-207
- IWS-208
- IWS-209
- IWS-210
- IWS-211
- IWS-212
- IWS-213
- IWS-271

Shaftwall
- IWS-301
- IWS-302

Linings
- IWS-401
- IWS-402
- IWS-403
- IWS-404
- IWS-405
- IWS-406
- IWS-407
- IWS-408
- IWS-409
- IWS-410 plasterboard lining to envelope
- IWS-411 plasterboard lining to envelope
- IWS-412
- IWS-413
- IWS-414 plasterboard lining to envelope
- IWS-415
- IWS-416
- IWS-417
- IWS-418
- IWS-419
- IWS-471
- IWS-472

- Blockwork
- Plywood pattress
- Surface fixed timber batten extended 100mm either side of opening to take curtains
- Fire-stop with thermal break by others
- RED — Dimension to grid
- GREEN — Setting out from face of board to extent of bathroom pod
- BLUE — Dimension to centre of wall access panel
- ORANGE — Dimension to centre of service penetration
- CYAN — Dimension to IWS-410 / IWS-411
- Reinforced windowsill
- AP-03 — 300 x 300 wall access panel
- A — service penetration size 'A'
- B — service penetration size 'B'

NOTES

When columns run parallel to slab edge, thermal insulation to run behind column on the envelope side.

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Health and safety information:
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North

Rev	Date	Description
00	14.09.2018	First Issue
01	14.12.2018	Revised to new GA information
02	25.01.2019	Dimensions included
03	04.10.2019	Revised as per riser door rationalisation requested by B+K
04	09.04.2020	Walltypes revised

Project Title
New Wakefield Street
Manchester

Drawing Title
Internal Wall Setting Out Plan
Ground Floor Level Sheet 02 of 02

Job No 10109
Scale 1:50@A1
Date Sept. 2018

Status
Information

Drawing No 10109-A-G252-P-00-002
Revision 04

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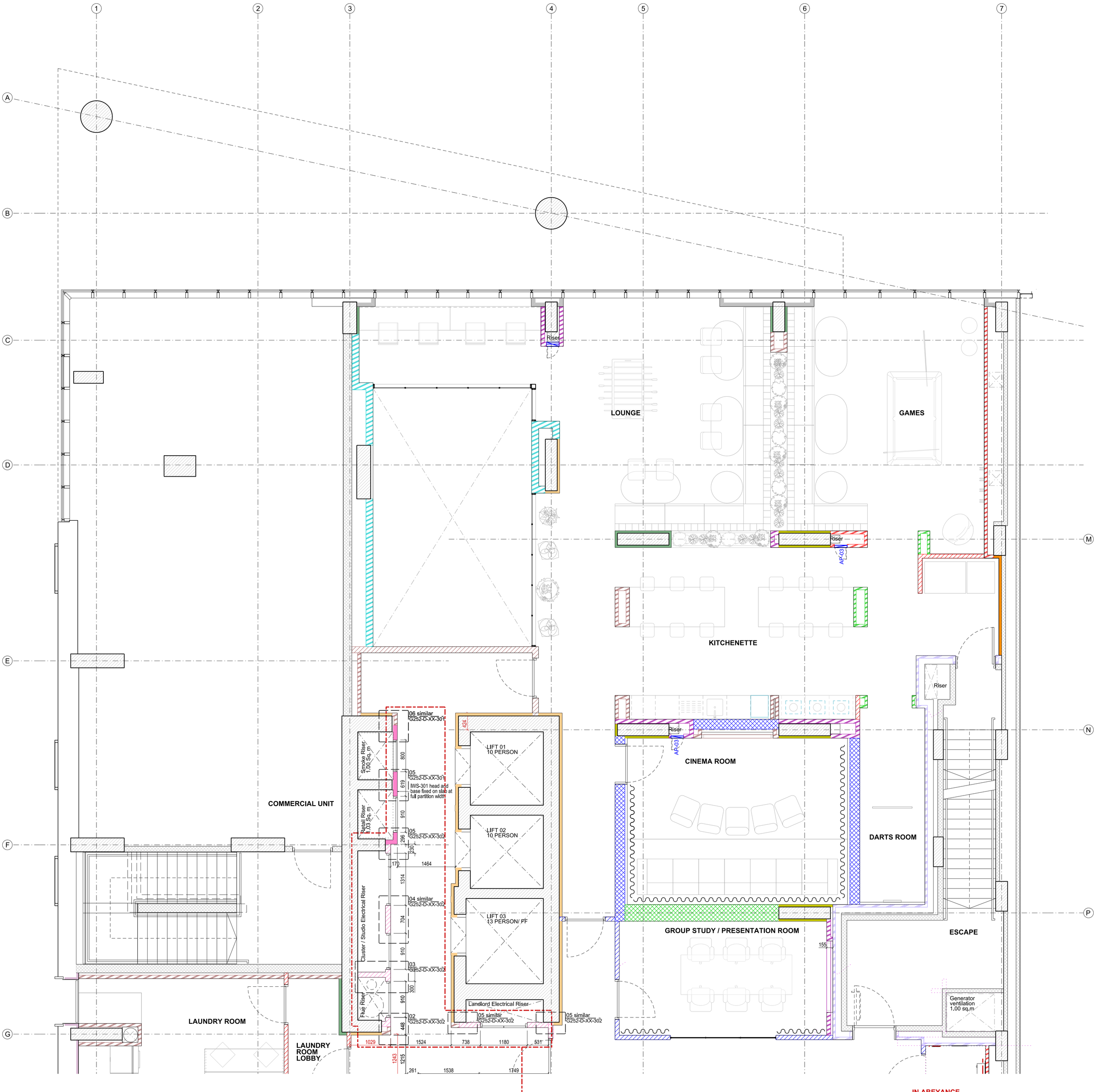

FOR CONSTRUCTION BOUNDARY
Information outside this boundary is at 'Information' Status, NOT for construction

IN ABEYANCE
Amenity space drylining subject to further coordination

WALL TYPE KEY

Single Stud Walls
- IWS-101
- IWS-102
- IWS-103
- IWS-104
- IWS-105
- IWS-106
- IWS-107

Twin Stud Walls
- IWS-201
- IWS-202
- IWS-203
- IWS-204
- IWS-205
- IWS-206
- IWS-207
- IWS-208
- IWS-209
- IWS-210
- IWS-211
- IWS-212
- IWS-213
- IWS-271

Shaftwall
- IWS-301
- IWS-302

Linings
- IWS-401
- IWS-402
- IWS-403
- IWS-404
- IWS-405
- IWS-406
- IWS-407
- IWS-408
- IWS-409
- IWS-410 plasterboard lining to envelope
- IWS-411 plasterboard lining to envelope
- IWS-412
- IWS-413
- IWS-414 plasterboard lining to envelope
- IWS-415
- IWS-416
- IWS-417
- IWS-418
- IWS-419
- IWS-471
- IWS-472

- Blockwork
- Plywood pattress
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- RED — Dimension to grid
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- BLUE — Dimension to centre of wall access panel
- ORANGE — Dimension to centre of service penetration
- CYAN — Dimension to IWS-410 / IWS-411
- Reinforced windowsill
- AP-03 — 300 x 300 wall access panel
- A — service penetration size 'A'
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NOTES

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North

Rev	Date	Description
00	14.09.2018	First Issue
01	14.12.2018	Revised to new GA information
02	25.01.2019	Dimensions included
03	24.06.2019	Issued for construction riser information only as marked by boundary
04	04.10.2019	Revised as per riser door rationalisation requested by B+K
05	09.04.2020	Amenity space revised to suit revised layout

Project Title: New Wakefield Street Manchester

Drawing Title: Internal Wall Setting Out Plan Level 01 Sheet 01 of 02

Job No: 10109 | Scale: 1:50@A1 | Date: Sept. 2018

Status: For Construction

Drawing No: 10109-A-G252-P-01-001 | Revision: 05

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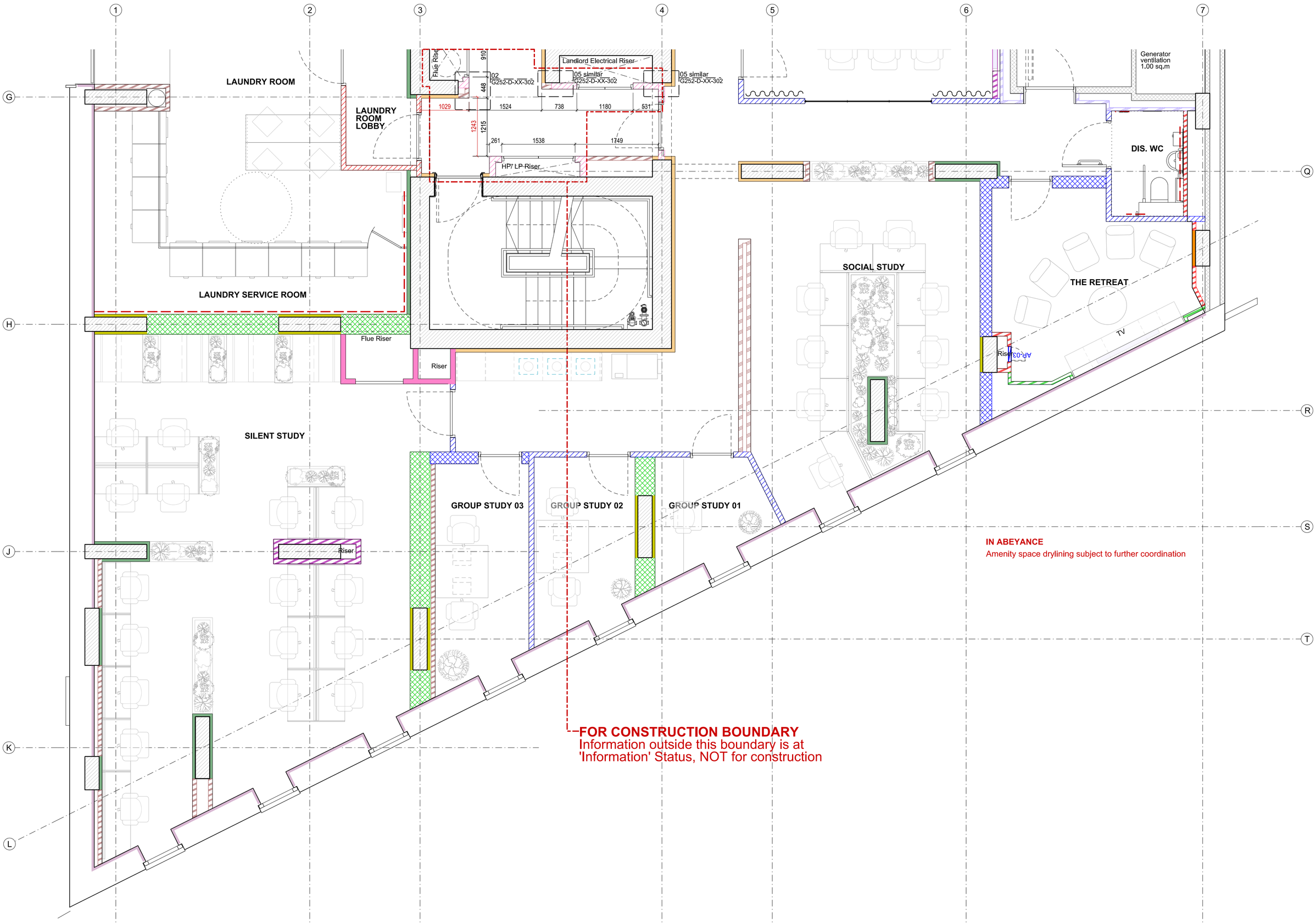

WALL TYPE KEY

Single Stud Walls
- IWS-101
- IWS-102
- IWS-103
- IWS-104
- IWS-105
- IWS-106
- IWS-107

Twin Stud Walls
- IWS-201
- IWS-202
- IWS-203
- IWS-204
- IWS-205
- IWS-206
- IWS-207
- IWS-208
- IWS-209
- IWS-210
- IWS-211
- IWS-212
- IWS-213
- IWS-271

Shaftwall
- IWS-301
- IWS-302

Linings
- IWS-401
- IWS-402
- IWS-403
- IWS-404
- IWS-405
- IWS-406
- IWS-407
- IWS-408
- IWS-409
- IWS-410 plasterboard lining to envelope
- IWS-411 plasterboard lining to envelope
- IWS-412
- IWS-413
- IWS-414 plasterboard lining to envelope
- IWS-415
- IWS-416
- IWS-417
- IWS-418
- IWS-419
- IWS-471
- IWS-472

- Blockwork
- Plywood pattress
- Surface fixed timber batten extended 100mm either side of opening to take curtains
- Fire-stop with thermal break by others
- RED — Dimension to grid
- GREEN — Setting out from face of board to extent of bathroom pod
- BLUE — Dimension to centre of wall access panel
- ORANGE — Dimension to centre of service penetration
- CYAN — Dimension to IWS-410 / IWS-411
- Reinforced windowsill
- AP-03 — 300 x 300 wall access panel
- A — service penetration size 'A'
- B — service penetration size 'B'

NOTES

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North

Rev	Date	Description
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01	14.12.2018	Revised to new GA information
02	25.01.2019	Dimensions included
03	24.06.2019	Issued for construction riser information only as marked by boundary
04	04.10.2019	Revised as per riser door rationalisation requested by B+K
05	09.04.2020	Amenity space revised to suit revised layout

Project Title
New Wakefield Street
Manchester

Drawing Title
Internal Wall Setting Out Plan
Level 01 Sheet 02 of 02

Job No 10109 | Scale 1:50@A1 | Date Sept. 2018

Status
For Construction

Drawing No 10109-A-G252-P-01-002 | Revision 05

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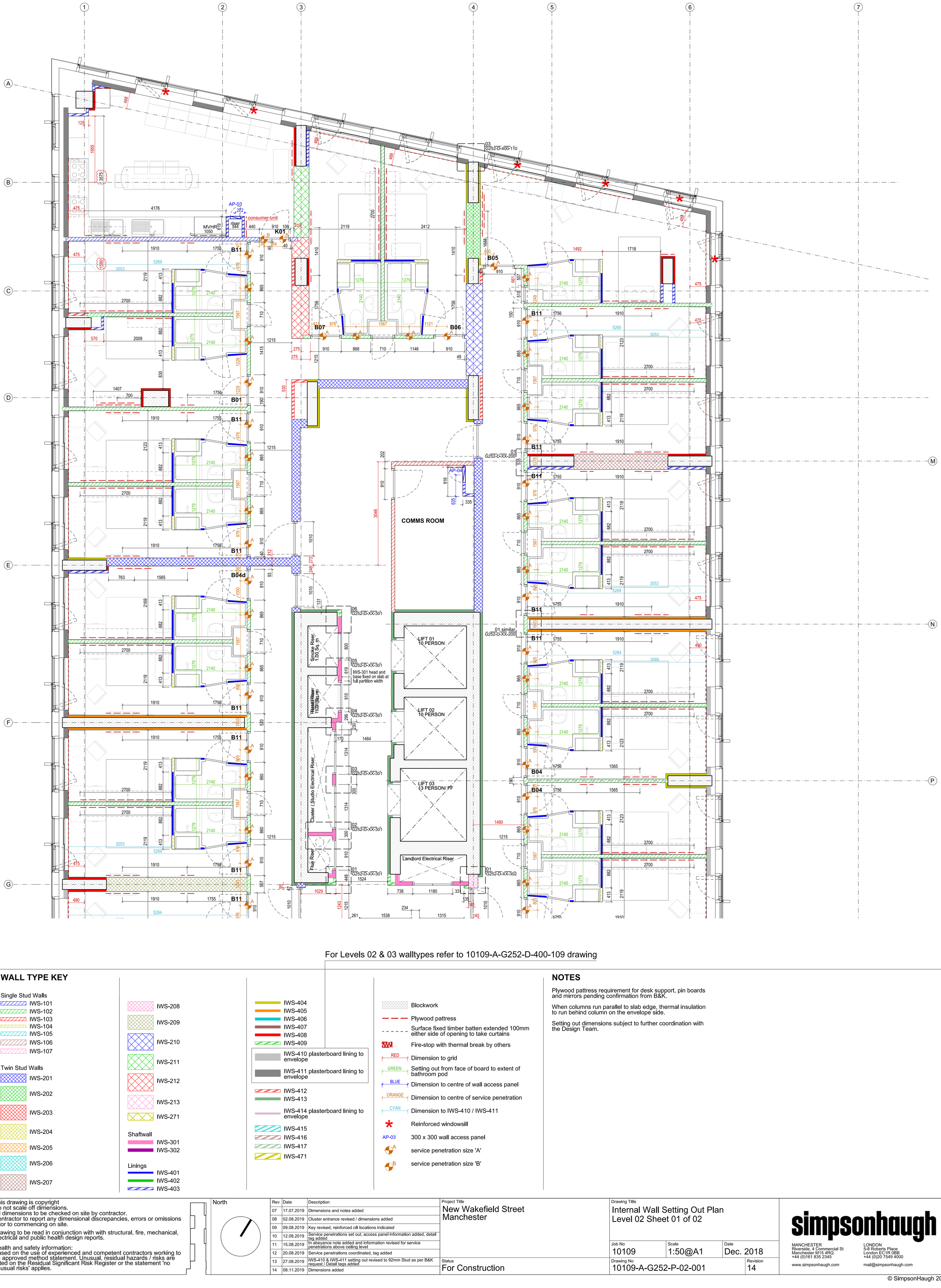

For Levels 02 & 03 walltypes refer to 10109-A-G252-D-400-109 drawing

WALL TYPE KEY

Single Stud Walls
- IWS-101
- IWS-102
- IWS-103
- IWS-104
- IWS-105
- IWS-106
- IWS-107

Twin Stud Walls
- IWS-201
- IWS-202
- IWS-203
- IWS-204
- IWS-205
- IWS-206
- IWS-207
- IWS-208
- IWS-209
- IWS-210
- IWS-211
- IWS-212
- IWS-213
- IWS-271

Shaftwall
- IWS-301
- IWS-302

Linings
- IWS-401
- IWS-402
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- IWS-406
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- IWS-408
- IWS-409
- IWS-410 plasterboard lining to envelope
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- Blockwork
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- Fire-stop with thermal break by others
- RED — Dimension to grid
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- CYAN — Dimension to IWS-410 / IWS-411
- Reinforced windowsill
- AP-03 — 300 x 300 wall access panel
- A — service penetration size 'A'
- B — service penetration size 'B'

NOTES

Plywood pattress requirement for desk support, pin boards and mirrors pending confirmation from B&K.

When columns run parallel to slab edge, thermal insulation to run behind column on the envelope side.

Setting out dimensions subject to further coordination with the Design Team.

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North

Rev	Date	Description
07	17.07.2019	Dimensions and notes added
08	02.08.2019	Cluster entrance revised / dimensions added
09	09.08.2019	Key revised, reinforced cill locations indicated
10	12.08.2019	Service penetrations set out, access panel information added, detail tag added
11	15.08.2019	In abeyance note added and information revised for service penetrations above ceiling level
12	20.08.2019	Service penetrations coordinated, tag added
13	27.08.2019	IWS-410 & IWS-411 setting out revised to 92mm Stud as per B&K request / Detail tags added
14	08.11.2019	Dimensions added

Project Title
New Wakefield Street
Manchester

Status
For Construction

Drawing Title
Internal Wall Setting Out Plan
Level 02 Sheet 01 of 02

Job No	Scale	Date
10109	1:50@A1	Dec. 2018

Drawing No
10109-A-G252-P-02-001

Revision
14

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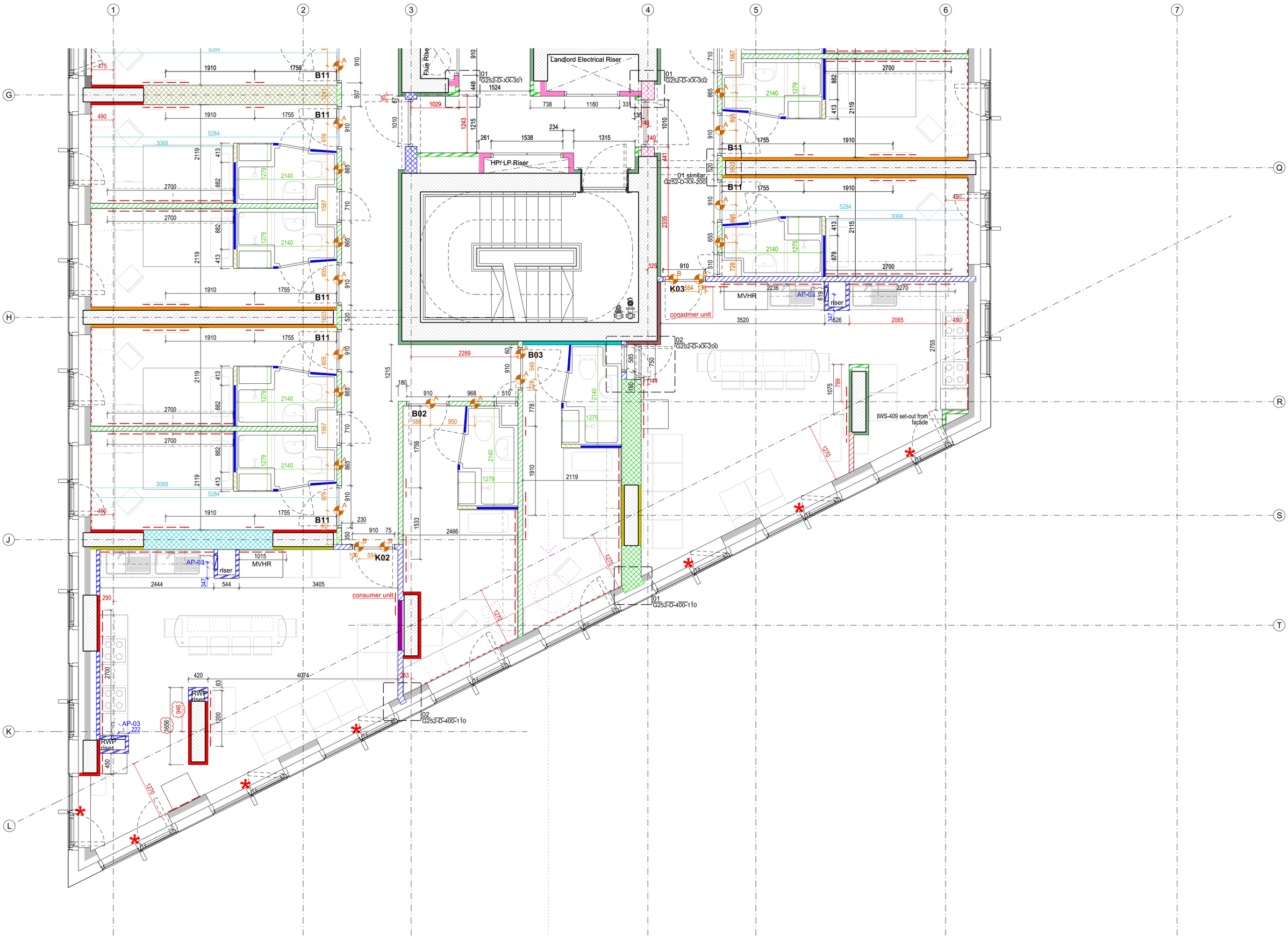

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WALL TYPE KEY

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- IWS-102
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- IWS-104
- IWS-105
- IWS-106
- IWS-107

Twin Stud Walls
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- IWS-204
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- IWS-271

Shaftwall
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Linings
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Rev	Date	Description
07	09.08.2019	Key revised, reinforced cill locations indicated
08	12.08.2019	Service penetrations set out, access panel information added, detail tag added
09	15.08.2019	In abeyance note added and information revised for service penetrations above ceiling level
10	20.08.2019	Service penetrations coordinated, tag added, double door riser updated as per RBA + Abacus coordination
11	27.08.2019	IWS-410 & IWS-411 setting out revised to 92mm Stud as per B&K request / Detail tags added
12	13.09.2019	B03 riser doors dimensions added
13	08.11.2019	Dimensions added

Project Title
New Wakefield Street
Manchester

Drawing Title
Internal Wall Setting Out Plan
Level 02 Sheet 02 of 02

Job No 10109 | Scale 1:50@A1 | Date Dec. 2018

Status
For Construction

Drawing No 10109-A-G252-P-02-002 | Revision 13

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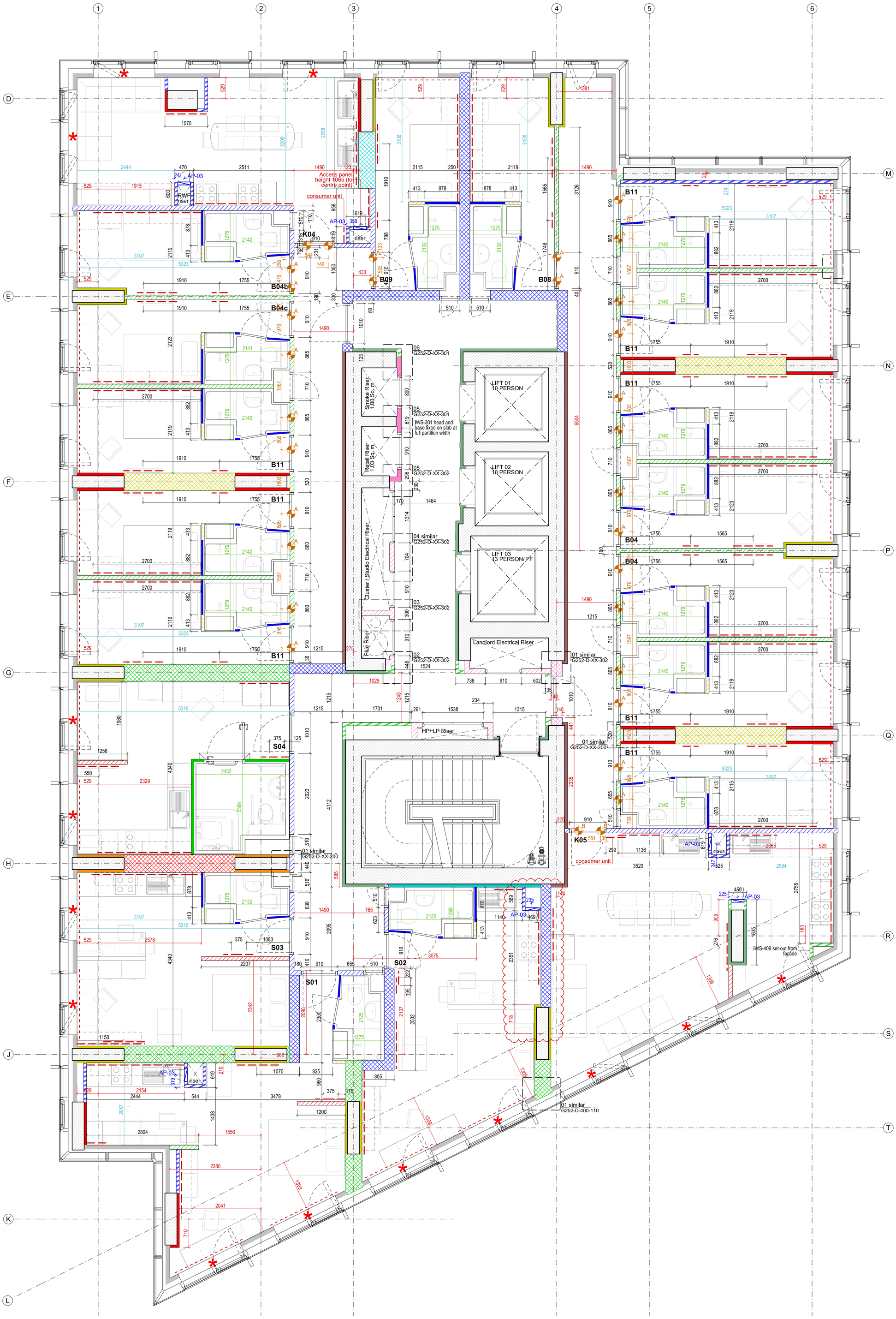

WALL TYPE KEY

Single Stud Walls
- IWS-101
- IWS-102
- IWS-103
- IWS-104
- IWS-105
- IWS-106
- IWS-107

Twin Stud Walls
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- IWS-202
- IWS-203
- IWS-204
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- IWS-209
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- IWS-213
- IWS-271

Shaftwall
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- AP-03 — 300 x 300 wall access panel
- A — service penetration size 'A'
- B — service penetration size 'B'

NOTES

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North

Rev	Date	Description
05	17.06.2019	Revised as per B+K request
06	16.08.2019	Remaining floor issued 'For Construction' / Information added
07	17.09.2019	Dimensions to envelope lining added
08	19.09.2019	Dimensions added as per B+K request
09	02.10.2019	Plywood pattress moved in studio S02
10	04.10.2019	Revised as per riser door rationalisation requested by B+K
11	14.10.2019	Detail reference tags added, K04 access panel note added
12	23.10.2019	Studio wall amended

Project Title
New Wakefield Street
Manchester

Drawing Title
Internal Wall Setting Out Plan
Level 06

Job No: 10109
Scale: 1:50@A1
Date: Dec. 2018

Status: For Construction
Drawing No: 10109-A-G252-P-06-001
Revision: 12

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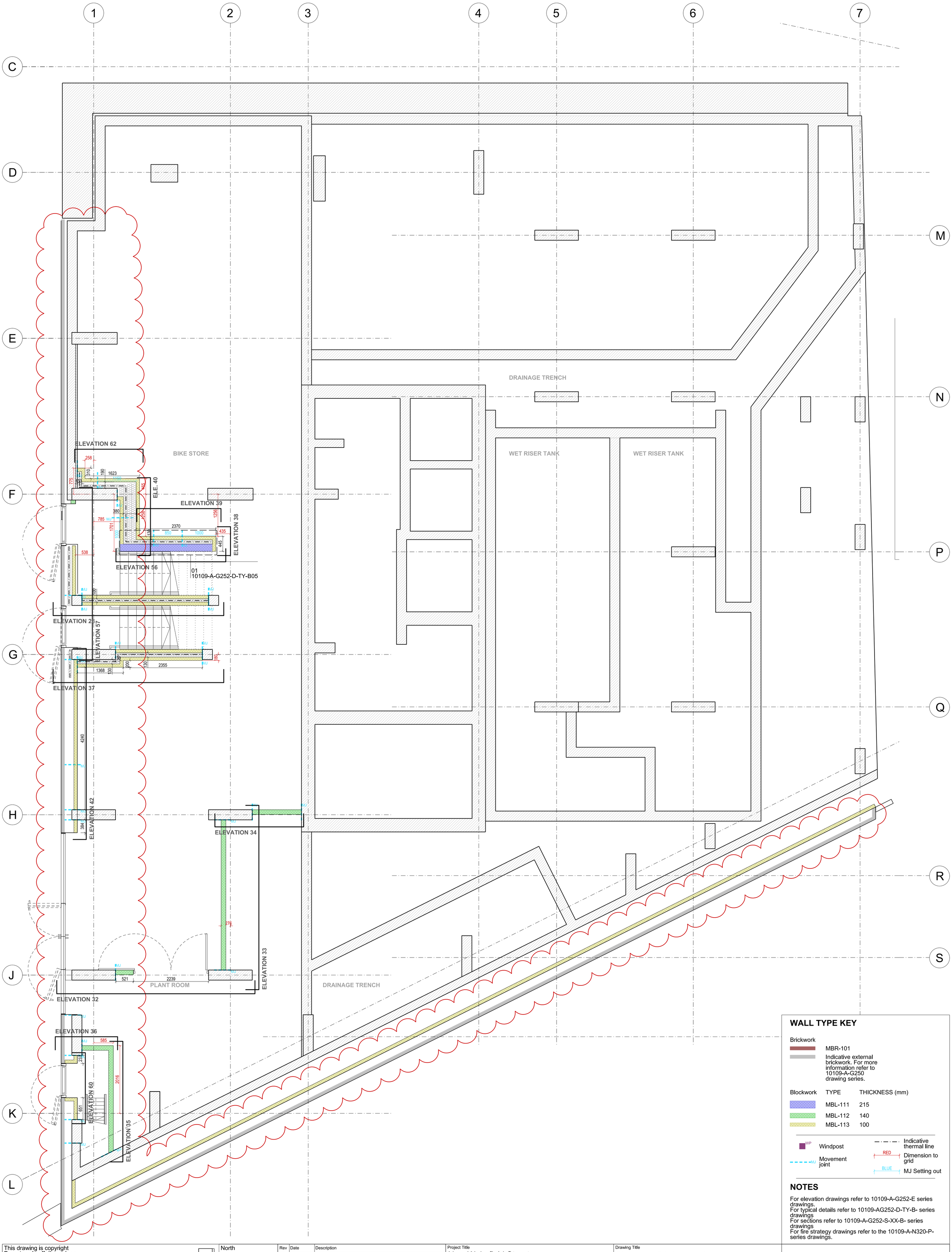

WALL TYPE KEY

Brickwork

MBR-101	
Indicative external brickwork. For more information refer to 10109-A-G250 drawing series.	

Blockwork	TYPE	THICKNESS (mm)
	MBL-111	215
	MBL-112	140
	MBL-113	100

WP Windpost

MJ Movement joint

Indicative thermal line

RED Dimension to grid

BLUE MJ Setting out

NOTES

For elevation drawings refer to 10109-A-G252-E series drawings.
For typical details refer to 10109-AG252-D-TY-B- series drawings
For sections refer to 10109-A-G252-S-XX-B- series drawings
For fire strategy drawings refer to the 10109-A-N320-P- series drawings.

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North

Rev	Date	Description
00	28.02.2019	First Issue
01	29.03.2019	Revised to current layout following further coordination
02	26.04.2019	Blockwork types revised to B&K request, revised to Abacus and Curtins comments
03	09.05.2019	Drawing reference added
04	06.06.2019	Drawing revised following SH, Abacus & Curtins coordination
05	18.07.2019	South elevation blockwork indicated, indicative external masonry shown. Cavity widths added for bloockwork walls

Project Title
New Wakefield Street
Manchester

Drawing Title
Blockwork & brickwork type plan
Lower ground floor

Job No	Scale	Date
10109	1:50@A1	Feb. 2019

Status
For Construction

Drawing No
10109-A-G252-P-LG-B01

Revision
05

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Project title New Wakefield Street, Manchester
File number 10109-A-G252-SCH-001
Title Plasterboard Linings and Partitions Schedule

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Revision	Date	Status	Description
00	31.08.2018	Stage 4 Preliminary	
01	14.09.2018	Stage 4 Preliminary	
02	14.12.2018	Information	
03	10.01.2019	Information	
04	18.02.2019	Information	
05	19.06.2019	Information	Revised to Value Engineering proposals and B+K and RBA's comments
06	27.06.2019	Information	Revised to British Gypsum NBS information
07	17.07.2019	Information	Revised to BG and DT coordination
08	05.11.2019	Information	Walltype added for 'riser door rationalisation' as requested by B+K / IWS-410 & IWS-411 revised as built on site
09	09.04.2020	Information	Revised to suit amenity spaces design

Where the Works will be subject to wet conditions such as in shower rooms, bathrooms, kitchens the following shall be applied:	
General areas board:	shall be substituted with high humidity areas board:
15mm Gyproc SoundBloc	15mm Gyproc SoundBloc MR
15mm Gyproc WallBoard	15mm Gyproc Moisture Resistant
12.5mm Gyproc WallBoard	12.5mm Gyproc Moisture Resistant
15mm Gyproc FireLine	15mm Gyproc FireLine MR
19mm Gyproc CoreBoard	n/a
15mm Glasroc F Firecase	n/a
15mm Gyproc DuraLine	15mm Gyproc DuraLine MR

No. of pages 6
Notes
- Drylining partitions developed using British Gypsum systems and products.
- British Gypsum to confirm overall system (including required & achieved performances and buildability/height)
- RBA to confirm acoustic performances
- GypLyner IWL has not been tested to provide a fire rating. Wall liner cavities to be fire-stopped at junctions with fire rated walls
- Cavity barriers under review (fire report section 4.1.5)

red text or box — **IN ABEYANCE** TBC by British Gypsum
revisions from previous issue
Wall type superseded

Reference	BG System	Performance					Width excl. finish (mm)	Studs			Boards						Insulation		Finish
		Sound insulation	Fire resistance - integrity (E) & insulation (I) (minutes)	Thermal	Max. Height (mm)	Duty		Type	Layout	Spacing (mm)	Face 1 Type	Thickness	Layers	Face 2 Type	Thickness	Layers	Type	Thickness (mm)	
SINGLE STUD PARTITIONS																			
IWS-101	GypWall CLASSIC	54 dB RW	30 or 60	n/a	3700	Severe	110	Gypframe 48 S 50 'C'	Single	600	Gyproc SoundBloc	15	2	Gyproc SoundBloc	15	2	Isover Acoustic Partition Roll (APR 1200)	25	PLS-101
IWS-102	GypWall ROBUST	49 dB RW	none or 30	n/a	3800	Severe	102	Gypframe 70 S 50 'C'	Single	600	Gyproc DuraLine	15	1	Gyproc DuraLine	15	1	Isover Acoustic Partition Roll (APR 1200)	50	PLS-101
IWS-103	GypWall ROBUST	n/a	n/a	n/a	3800	Severe	102	Gypframe 70 S 50 'C'	Single	600	Gyproc DuraLine	15	1	Gyproc DuraLine	15	1			PLS-101
IWS-104	GypWall CLASSIC	n/a	n/a	n/a	2500mm, or 3100mm as specified	Medium	75	Gypframe 48 S 50 'C'	Single	600, reduced to 300 centres for heights greater than 2500	Gyproc WallBoard	12.5	1	Gyproc WallBoard	12.5	1			PLS-101
IWS-105 superseded by IWS-103	GypWall CLASSIC Classic	n/a	60	n/a	3700	Severe	110	Gypframe 48 S 50 'C'	Single	600	Gyproc FireLine	15	2	Gyproc FireLine	15	2			PLS-101
IWS-106 loading requirements as per BS 6180:2011 section 6.2 table 2	GypWall CLASSIC	n/a	60	n/a	5400	Severe	154	Gypframe 92 I 90 'I' Stud to achieve 3kN/m loading (fixed at slab edge / void)	Single	400	Gyproc WallBoard	15	2	Gyproc WallBoard	15	2			
IWS-107	GypWall ROBUST	n/a	120	n/a	5000	Severe	132	Gypframe 70 AS 50 AcouStuds	Single	600	Gyproc SoundBloc (inner layer)	15	1	Gyproc SoundBloc (inner layer)	15	1			PLS-101
											+ 15mm Gyproc DuraLine (outer layer)	15	1	+ 15mm Gyproc DuraLine (outer layer)	15	1			

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15mm Gyproc WallBoard	15mm Gyproc Moisture Resistant
12.5mm Gyproc WallBoard	12.5mm Gyproc Moisture Resistant
15mm Gyproc FireLine	15mm Gyproc FireLine MR
19mm Gyproc CoreBoard	n/a
15mm Glasroc F Firecase	n/a
15mm Gyproc DuraLine	15mm Gyproc DuraLine MR

IN ABEYANCE TBC by British Gypsum
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Wall type superseded

Reference	BG System	Performance					Width excl. finish (mm)	Studs			Boards						Insulation		Finish
		Sound insulation	Fire resistance - integrity (E) & insulation (I) (minutes)	Thermal	Max. Height (mm)	Duty		Type	Layout	Spacing (mm)	Face 1 Type	Thickness	Layers	Face 2 Type	Thickness	Layers	Type	Thickness (mm)	
TWIN STUD PARTITIONS																			
IWS-201	GypWall QUIET IWL	70 dB RW	60	n/a	2800mm or 3600mm as specified	Severe	250	Gypframe 48 I 50 'I' Stud	Twin	600 reduced to 300 for heights greated than 2800	Gyproc SoundBloc	15	2	Gyproc SoundBloc	15	2	Isover Acoustic Partition Roll (APR 1200)	100	PLS-101
IWS-202	GypWall QUIET	build-up confirmed by RBA (e - 'RE: NWS-Partition and Lining Queries' 2019-06-19)	60	n/a	4200	Severe	420	Gypframe 48 S 50 'C' Stud (50 FEC 50)	Twin braced	600	Gyproc SoundBloc	15	2	Gyproc SoundBloc	15	2	Isover Acoustic Partition Roll (APR 1200)	100	PLS-101
IWS-203	GypWall QUIET	build-up confirmed by RBA (e - 'RE: NWS-Partition and Lining Queries' 2019-06-19)	60	n/a	4200	Severe	440	Gypframe 48 S 50 'C' Stud (50 FEC 50)	Twin braced	600	Gyproc SoundBloc	15	2	Gyproc SoundBloc	15	2	Isover Acoustic Partition Roll (APR 1200)	100	PLS-101
IWS-204	GypWall QUIET	50 dB RW (estimated) / build-up confirmed by RBA (e - 'RE: NWS- Partition and Lining Queries' 2019-06-19)	30	n/a	4200	Severe	440	Gypframe 48 S 50 'C' Stud (50 FEC 50)	Twin braced	600	Gyproc WallBoard	12.5	2	Gyproc WallBoard	12.5	2	Isover Acoustic Partition Roll (APR 1200)	25	PLS-101
IWS-205	GypWall QUIET	50 dB RW (estimated) / build-up confirmed by RBA (e - 'RE: NWS- Partition and Lining Queries' 2019-06-19)	30	n/a	4200	Severe	250	Gypframe 48 S 50 'C' Stud (50 FEC 50)	Twin braced	600	Gyproc WallBoard	12.5	2	Gyproc WallBoard	12.5	2	Isover Acoustic Partition Roll (APR 1200)	25	PLS-101
IWS-206	GypWall QUIET	54 dB RW (estimated) / build-up confirmed by RBA (e - 'RE: NWS- Partition and Lining Queries' 2019-06-19)	30	n/a	4200	Severe	420	Gypframe 48 S 50 'C' Stud (50 FEC 50)	Twin braced	600	Gyproc WallBoard Side: In line with 15mm board of adjacent wall type	15	2	Gyproc WallBoard Side: In line with 12.5mm board of adjecent wall type	12.5	2	Isover Acoustic Partition Roll (APR 1200)	25	PLS-101
IWS-207	GypWall QUIET	50 dB RW (estimated) / build-up confirmed by RBA (e - 'RE: NWS- Partition and Lining Queries' 2019-06-19)	30		4200	Severe	455	Gypframe 48 S 50 'C' Stud (50 FEC 50)	Twin braced	600	Gyproc WallBoard	12.5	2	Gyproc WallBoard	12.5	2	Isover Acoustic Partition Roll (APR 1200)	25	PLS-101
IWS-208	GypWall QUIET IWL	70 dBRW (Rw+Ctr 62dB)	120	n/a	2800mm or 3600mm as specified	Severe	280	Gypframe 48 I 50 'I' Stud	Twin	600 reduced to 300 for heights greated than 2800	Gyproc SoundBloc (inner layer) + 15mm Gyproc DuraLine (outer layer)	15 15	1 1	Gyproc SoundBloc (inner layer) + 15mm Gyproc DuraLine (outer layer)	15 15	1 1	Isover Acoustic Partition Roll (APR 1200)	100	PLS-101
IWS-209	GypWall QUIET	50 dB RW (estimated) / build-up confirmed by RBA (e - 'RE: NWS- Partition and Lining Queries' 2019-06-19)	30	n/a	4200	Severe	420	Gypframe 48 S 50 'C' Stud (50 FEC 50)	Twin braced	600	Gyproc WallBoard	12.5	2	Gyproc WallBoard	12.5	2	Isover Acoustic Partition Roll (APR 1200)	25	PLS-101

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15mm Gyproc SoundBloc	15mm Gyproc SoundBloc MR
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12.5mm Gyproc WallBoard	12.5mm Gyproc Moisture Resistant
15mm Gyproc FireLine	15mm Gyproc FireLine MR
19mm Gyproc CoreBoard	n/a
15mm Glasroc F Firecase	n/a
15mm Gyproc DuraLine	15mm Gyproc DuraLine MR

IN ABEYANCE TBC by British Gypsum
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Wall type superseded

Reference	BG System	Performance					Width excl. finish (mm)	Studs			Boards						Insulation		Finish
		Sound insulation	Fire resistance - integrity (E) & insulation (I) (minutes)	Thermal	Max. Height (mm)	Duty		Type	Layout	Spacing (mm)	Face 1 Type	Thickness	Layers	Face 2 Type	Thickness	Layers	Type	Thickness (mm)	
IWS-210	GypWall QUIET	build-up confirmed by RBA (e - 'RE: NWS-Partition and Lining Queries' 2019-06-19)	60	n/a	4200	Severe	485	Gypframe 48 S 50 'C' Stud (50 FEC 50)	Twin braced	600	Gyproc SoundBloc	15	2	Gyproc SoundBloc	15	2	Isover Acoustic Partition Roll (APR 1200)	100	PLS-101
IWS-211	GypWall QUIET	54 dB RW (estimated) / build-up confirmed by RBA (e - 'RE: NWS- Partition and Lining Queries' 2019-06-19)	30	n/a	4200	Severe	445	Gypframe 48 S 50 'C' Stud (50 FEC 50)	Twin braced	600	Gyproc WallBoard	12.5	2	Gyproc WallBoard	12.5	2	Isover Acoustic Partition Roll (APR 1200)	25	PLS-101
IWS-212	GypWall QUIET	build-up confirmed by RBA (e - 'RE: NWS-Partition and Lining Queries' 2019-06-19)	30	n/a	4200	Severe	510	Gypframe 48 S 50 'C' Stud (50 FEC 50)	Twin braced	600	Gyproc WallBoard Side: corridor	15	2	Gyproc WallBoard Side: bedroom	12.5	2	Isover Acoustic Partition Roll (APR 1200)	25	PLS-101
IWS-213 walltype no longer required	GypWall QUIET IWL	70 dBRW	120	n/a	10335 by additional structural support by others	Severe	400	Gypframe92 I 90 'I' Stud	Twin	600	Gyproc SoundBloc (outer side) + Gyproc Fireline (inner framing side)	15 15	2 1	Gyproc SoundBloc (outer side) + Gyproc Fireline (inner framing side)	15 15	2 1	Isover Acoustic Partition Roll (APR 1200)	100	PLS-101
IWS-271 walltype no longer required	GypWall QUIET	TBC by RBA	120	0.26W/m2K	7500	Severe	210	Gypframe 48 S 50 'C'	Twin braced	600	Gyproc DuraLine MR (external side - outer side) + Gyproc Fireline MR (external side - inner framing side) + security mesh	15 15	1 1	Gyproc Fireline (internal side)	15	2	50mm Isover Acoustic Partition Roll (APR 1200) or similar i.e Rockwool	3 x 50	internal side: PLS-102 Cold side : moisture impervious coating by others
PLASTERBOARD SHAFT WALL PARTITIONS																			
IWS-301	ShaftWall	n/a	120 (both sides - shaft and core lobby)	n/a	4500	Severe	107	Gypframe 60 I 70 'I' Stud secured by Gypframe Retaining Channel	Single	600	Glasroc F Firecase	15	3	Glasroc F Firecase	20	1	n/a	n/a	PLS-101
IWS-302	ShaftWall	n/a	30	n/a	4500	Severe	92	Gypframe 60 I 70 'I' Stud	Single	600	Gyproc FireLine	15	2	Gyproc CoreBoard	19	1	n/a	n/a	PLS-101

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15mm Gyproc WallBoard	15mm Gyproc Moisture Resistant
12.5mm Gyproc WallBoard	12.5mm Gyproc Moisture Resistant
15mm Gyproc FireLine	15mm Gyproc FireLine MR
19mm Gyproc CoreBoard	n/a
15mm Glasroc F Firecase	n/a
15mm Gyproc DuraLine	15mm Gyproc DuraLine MR

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Reference	BG System	Performance					Width excl. finish (mm)	Studs			Boards						Insulation		Finish
		Sound insulation	Fire resistance - integrity (E) & insulation (I) (minutes)	Thermal	Max. Height (mm)	Duty		Type	Layout	Spacing (mm)	Face 1 Type	Thickness	Layers	Face 2 Type	Thickness	Layers	Type	Thickness (mm)	
PLASTERBOARD DRY LINING SYSTEMS																			
IWS-401 lining to standard bathroom pod	n/a	n/a	n/a	n/a		n/a	34.5	Gypframe GL1 Lining Channel (brackets by pod manufacturer)	Single	600	Gyproc WallBoard	12.5	1	n/a	n/a	n/a	n/a	n/a	PLS-101
IWS-402 lining to accessible / adaptable pods	n/a	n/a	n/a	n/a		n/a	25	n/a (framing by pod manufacturer)	n/a	n/a	Gyproc WallBoard	12.5	2	n/a	n/a	n/a	n/a	n/a	PLS-101
IWS-403	GypLyner IWL	As per RBA advice	n/a	n/a	2700mm or 3400mm as specified	Severe	75	Gypframe 48 I 50 'I' Stud	Single	600 reduced to 300 for heights greater than 2700	Gyproc WallBoard	12.5	2	n/a	n/a	n/a	Isover Acoustic Partition Roll (APR 1200)	25	PLS-101
IWS-404	GypLyner UNIVERSAL	As per RBA advice	none (30 or 60 by concrete column)	n/a	n/a	n/a	60 or 70	Gypframe GL1 Lining Channel	Single	600	Gyproc SoundBloc	15	1	n/a	n/a	n/a	Isover Acoustic Partition Roll (APR 1200)	25	PLS-101
IWS-405	GypLyner UNIVERSAL	As per RBA advice	none (30 or 60 by concrete outrigger wall)	n/a	n/a	n/a	70	Gypframe GL1 Lining Channel	Single	600	Gyproc SoundBloc	15	2	n/a	n/a	n/a	Isover Acoustic Partition Roll (APR 1200)	25	PLS-101
IWS-406	GypLyner UNIVERSAL	As per RBA advice	none (120 mins by concrete core)	n/a	n/a	n/a	80	Gypframe GL1 Lining Channel	Single	600	Gyproc WallBoard	12.5	2	n/a	n/a	n/a	Isover Acoustic Partition Roll (APR 1200)	25	PLS-101
IWS-407	GypLyner UNIVERSAL	As per RBA advice	none (120 mins by concrete core)	n/a	n/a	n/a	75	Gypframe GL1 Lining Channel	Single	600	Gyproc WallBoard	15	1	n/a	n/a	n/a	Isover Acoustic Partition Roll (APR 1200)	25	PLS-101

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15mm Glasroc F Firecase	n/a
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		Sound insulation	Fire resistance - integrity (E) & insulation (I) (minutes)	Thermal	Max. Height (mm)	Duty		Type	Layout	Spacing (mm)	Face 1 Type	Thickness	Layers	Face 2 Type	Thickness	Layers	Type	Thickness (mm)	
IWS-408	GypLyner UNIVERSAL	As per RBA advice	none (30 or 60 mins by concrete column)	n/a	n/a	n/a	60 or 70	Gypframe GL1 Lining Channel	Single	600	Gyproc WallBoard	12.5	1	n/a	n/a	n/a	Isover Acoustic Partition Roll (APR 1200)	25	PLS-101
IWS-409	GypLyner IWL	n/a	n/a	n/a	2700mm or 3000mm as specified (3600mm on Level 04)	Severe	65 (80mm on Level 04)	Gypframe 48 I 50 'I' Stud	Single	600 reduced to 300 for heights greater than 2700	Gyproc DuraLine	15	1 (additional board on level 04)	n/a	n/a	n/a			PLS-101
IWS-410 **Levels 02-03**	GypLyner IWL	Refer to the Acoustic Report by RBA	n/a		5800	Severe	124	Gypframe 92 I 90 'I' Stud / additional post and transom may be required to comply with required loadings	Single	600	Gyproc SoundBloc	15	2	n/a	n/a		dense (~45kg/m3) RWA45 Rockwool + 1 x polyethylene menbrane by others	fully filled, typically 100 + 25 + 100mm / minimum 100mm	PLS-101
IWS-410 **Levels 04-32**	GypLyner IWL	Refer to the Acoustic Report by RBA	n/a		4200	Severe	102	Gypframe 70 I 50 'I' Stud / additional post and transom may be required to comply with required loadings	Single	600	Gyproc SoundBloc	15	2	n/a	n/a		dense (~45kg/m3) RWA45 Rockwool + 1 x polyethylene menbrane by others	fully filled, typically 100 + 75mm + 25mm / minimum 100mm	PLS-101
IWS-411 **Levels 02-03**	GypLyner IWL	Refer to the Acoustic Report by RBA	n/a		5800	Severe	139	Gypframe 92 I 90 'I' Stud additional post and transom may be required to comply with required loadings	Single	600	Gyproc SoundBloc	15	3	n/a	n/a		dense (~60kg/m3) RW3 Rockwool 1 x polyethylene menbrane by others	fully filled, typically 100 + 25 + 100mm / minimum 100mm	PLS-101
IWS-411 **Levels 04-32**	GypLyner IWL	Refer to the Acoustic Report by RBA	n/a		4200	Severe	117	Gypframe 70 I 50 'I' Stud additional post and transom may be required to comply with required loadings	Single	600	Gyproc SoundBloc	15	3	n/a	n/a		dense (~60kg/m3) RW3 Rockwool 1 x polyethylene menbrane by others	fully filled, typically 75 + 100mm / minimum 100mm	PLS-101
IWS-412	GypLyner IWL	As per RBA advice	n/a		2800mm or 3600mm as specified	Severe	80	Gypframe 48 I 50 'I' Stud	Single	600 reduced to 300 for heights greater than 2800	Gyproc SoundBloc	15	2	n/a	n/a	n/a	Isover Acoustic Partition Roll (APR 1200)	25	PLS-101
IWS-413	GypLyner UNIVERSAL	n/a	n/a	n/a	n/a	n/a	75 or 60	Gypframe GL1 Lining Channel	Single	600	Gyproc WallBoard	15	1	n/a	n/a	n/a			PLS-101

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19mm Gyproc CoreBoard	n/a
15mm Glasroc F Firecase	n/a
15mm Gyproc DuraLine	15mm Gyproc DuraLine MR

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IWS-414 lining to SFS	n/a	Refer to RBA information	n/a	n/a	as per framing system	n/a	30	see G250 architectural drawings	see G250 architectural drawings	600mm max	Gyproc SoundBloc	15	2	n/a	n/a	n/a	see G250 architectural drawings	see G250 architectural drawings	PLS-101
IWS-415	GypLyner IWL	n/a	none (60 or 120 by blockwork or concrtete)	n/a	9000	Severe	178	Gypframe 146 I 80 'I' Stud	Single	600	Gyproc WallBoard	15	2	n/a	n/a	n/a			
IWS-416	GypLyner IWL	n/a	n/a	n/a	3900	Severe	87	Gypframe 70 I 70 'I' Stud	Single	600	Gyproc Duraline	15	1	n/a	n/a	n/a	n/a	n/a	PLS-101
IWS-417 superseded	GypLyner IWL	n/a	n/a	n/a	6000	Medium	106.5	Gypframe 92 I 90 'I' Stud	Single	600	Gyproc WallBoard	12.5	1	n/a	n/a	n/a	n/a	n/a	PLS-101
IWS-418	GypLyner IWL	TBC by RBA based on IWS-403 with bigger stud to suit height	n/a	n/a	4300	Severe	102	Gypframe 70 I 70 'I' Stud	Single	600	Gyproc WallBoard	15	2	n/a	n/a	n/a	Isover Acoustic Partition Roll (APR 1200)	25	PLS-101
IWS-419	GypLyner UNIVERSAL	n/a	n/a	n/a	n/a	Severe	75 or 60	Gypframe GL1 Lining Channel	Single	600	Gyproc Duraline	15	1	n/a	n/a	n/a	n/a	n/a	PLS-102
IWS-471	GypLyner IWL	TBC by RBA	none (120 by blockwork or concrtete or brickwork)	by others	3600	Severe	80	Gypframe 48 I 50 'I' Stud	Single	300	Gyproc DuraLine	15	2	n/a	n/a	n/a	Earthwool Omnifit Slab by others, 1 x polyethylene menbrane by others	fully filled, typically 50 + 100mm / minimum 150mm	PLS-102
IWS-472	GypLyner IWL	TBC by RBA	none (120 by blockwork or concrete)	by others	2700	Severe	65	Gypframe 48 I 50 'I' Stud	Single	400	Gyproc DuraLine	15	1	n/a	n/a	n/a	Earthwool Omnifit Slab by others, 1 x polyethylene menbrane by others	fully filled, typically 50 + 150mm / minimum 200mm	PLS-102

UNITE

1-5 NEW WAKEFIELD STREET

MANCHESTER

ACOUSTIC ASSESSMENT

REPORT 7939/AAR
Prepared: 20 March 2018
Revision Number: 2

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Acoustic Assessment Report

UNITE

1-5 NEW WAKEFIELD STREET

MANCHESTER

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Revision	Comment	Date	Prepared By	Approved By
0	First Issue	20 June 2017	Paul Taylor	Alex J Wyatt
1	Revised building design	27 November 2017	Paul Taylor	Alex J Wyatt
2	Revised to cover the now proposed Unitised curtain walling system in lieu of Metsec external wall	20 March 2018	Paul Taylor	Alex J Wyatt

Terms of contract:

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The recommendations within this report relate to acoustics performance only and will need to be integrated within the overall design by the lead designer to incorporate all other design disciplines such as fire, structural integrity, setting-out, etc. Similarly, any sketches appended to this report illustrate acoustic principles only and again will need to be developed in to full working drawings by the lead designer to incorporate all other design disciplines.

In line with our Environmental Policy, one hard copy of the report will be provided, upon request. Additional copies of the report, or further hard copies of revised reports, would be subject to an administrative cost of £20.00 (+VAT) per copy.

RBA ACOUSTICS

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1.0 INTRODUCTION

Planning permission has been granted for the construction of student accommodation on land currently occupied by Sound Control on New Wakefield Street, Manchester.

The existing buildings are to be demolished. A new 32-storey plus ground floor residential block for student accommodation (Sui Generis) comprising approximately 600 student bed-spaces and communal areas is to be erected.

An assessment has been carried out in relation to the noise levels likely to be incident on the proposed building façades to demonstrate that noise will not unduly affect the future occupants of the development.

RBA Acoustics have been commissioned by The UNITE Group Plc. to undertake a noise survey and acoustic assessment for the proposed development.

This report details the results of the noise survey and sets out the acoustic performance requirements of the external building fabric elements.

This report is based upon application drawings and is suitable for submission with the planning application.

2.0 ENVIRONMENTAL NOISE SURVEY

2.1 Site Location Details

The site is bordered by New Wakefield Street to the north and the River Medlock to the south. Beyond the site borders, the area is bounded by Oxford Road to the east, Great Marlborough Street to the west and Hulme Street to the south.

Oxford Road has recently been converted into a bus and cycle corridor, restricting general traffic from travelling through between 06:00 and 21:00 hours, seven days a week between Hathersage Road and Portland Street.

The Development Site is also situated in an area with a vibrant night-time economy. Directly opposite and to the north of the site is The Thirsty Scholar, which is a bar and music venue situated beneath the railway arches. The Zombie Shack is also situated to the north of the site.

Situated to the east of the site is Revolution Manchester, which is a restaurant and bar.

To the west of the site along New Wakefield Street is The Font, which is a cocktail bar.

Slightly further to the west of the site along New Wakefield Street is the Black Dog Ballroom, which is a bar and restaurant which offers live music.

Please also see attached Site Plan 7939/SP1 for further details of the site location.

2.2 Survey Methodology

General

Environmental noise monitoring was undertaken over a continuous 5 day period between Wednesday 10th and Monday 15th May 2017 at two locations around the re-development site to establish the existing background noise levels over typical day and night-time periods. Weather conditions over the monitoring period were generally dry with only light wind speeds and were considered suitable for noise monitoring.

Light rainfall was noted to occur between:

- 09:00 and 14:00 hours and between 22:00 hours and 23:00 hours on Friday 12th May 2017.
- 05:00 and 09:00 hours on Saturday 13th May 2017.
- 02:00 and 06:00 hours and between 10:30 and 12:30 hours on Sunday 14th May 2017.
- 06:00 until the end of the survey on Monday 15th May 2017.

From review of the survey data rainfall is not considered to have affected our measurements due to it generally being light rainfall.

Supplementary short-term measurements were undertaken between 16:00 and 17:30 hours on Wednesday 10th May 2017 and 23:00 and 01:00 hours on Friday-Saturday 12th-13th May 2017 to establish typical daytime and night-time noise levels around the re-development site and establish further detail on the night-time noise climate.

Instrumentation

The following instrumentation was used for the surveys:

Table 7939/T1 – Equipment Details

Manufacturer	Model Type	Serial No.	Calibration	
			Certificate No.	Expiry Date
Position 1				
Norsonic Type 1 Sound Level Meter	Nor140	1406255	24932	6 March 2019
Norsonic Pre Amplifier	1209	20491		
Norsonic ½" Microphone	1225	225529	24931	6 March 2019
Norsonic Sound Calibrator	1251	34391	U24930	6 March 2019
Position 2				
Norsonic Type 1 Sound Level Meter	Nor140	1406007	U21856	13 June 2018
Norsonic Pre Amplifier	1209	20043		
Norsonic ½" Microphone	1225	208146	21855	13 June 2018
Norsonic Sound Calibrator	1251	34127	U21854	13 June 2018
Positions A, B & C				
01dB A&V Type 1 Sound Level Meter	Black Solo 01	65630	U21437	24 April 2018
01dB A&V Pre Amplifier	PRE 21 S	16254		
Gras ½" Microphone	MCE 212	166570	21436	24 April 2018
01dB-Stell Calibrator	Cal 21	50241574	U21435	24 April 2018

The sound level meters were calibrated both prior to and on completion of the surveys with no calibration drifts observed.

Measurement Positions

Position 1 – New Wakefield Street - Unattended

The microphone was located at 3rd floor level on the existing building on the north façade overlooking New Wakefield Street and the train lines opposite, with direct line of sight to the passing trains. The microphone was positioned approximately 2m from the existing building façade. The microphone was considered to be subject to façade reflections.

Position 2 – West of Re-development - Unattended

The microphone was located at 2nd floor level on the existing building on the west façade towards the south-west corner overlooking the rear service area. The microphone was positioned approximately 1m from the existing building façade. The microphone was considered to be subject to façade reflections.

Position A – Oxford Road - Attended

The microphone was positioned on a tripod approximately 1.2m above ground level along Oxford Road, at the north end of the Holiday Inn, at the edge of the pavement. The microphone was considered to be in free field conditions.

Position B – Junction of Oxford Road and New Wakefield Street - Attended

The microphone was positioned on a tripod approximately 1.2m above ground level on the corner of the junction between Oxford Road and New Wakefield Street, at the edge of the pavement. The microphone was considered to be in free field conditions.

Position C–New Wakefield Street - Attended

The microphone was positioned on a tripod approximately 1.2m above ground level on New Wakefield Street outside The Font, at the edge of the pavement. The microphone was considered to be in free field conditions.

The measurement positions are shown on the attached Site Plan 7939/SP2 and Photographs 7939/P1-P5.

2.3 Site Conditions

During our time on site it was noted that noise levels at Measurement Position 1 were dominated by road traffic movements along Oxford Road, intermittent traffic movements along New Wakefield Street and regular train passbys along the elevated railway viaduct opposite.

At Measurement Position 2 it was noted that noise levels were affected predominantly by rail movements along the train viaduct on the opposite side of New Wakefield Street, traffic noise from Great Marlborough Street, Hulme Street and the surrounding road network.

At Measurement Position A it was noted that noise levels were affected by road traffic movements and pedestrian activity along Oxford Road.

At Measurement Position B it was noted that noise levels were affected by road traffic movements and pedestrian activity along Oxford Road and train movements on the adjacent railway viaduct. During our time on-site on Friday night, music noise breakout was audible from Revolution as well as customers outside the establishment.

At Measurement Position C it was noted that noise levels were affected by road traffic movements and pedestrian activity along New Wakefield Street and train movements on the adjacent railway viaduct. During our time on-site on Friday night, music noise breakout was audible from The Thirsty Scholar, Sound Control (which is to be closed as part of the re-development), The Font and to a lesser extent the Black Dog Ballroom, as well as customers outside the establishments.

2.4 Results

The measured L_{Aeq}, L_{A90} and L_{Amax} 15 minute period levels are shown as time-histories on the attached Graphs 7939/G1-4. The averaged daytime and night-time L_{Aeq} noise levels are summarised in the following Table 7939/T2 below. Also shown is the range of maximum (L_{Amax}) night-time noise levels and typical maximum level (90th percentile of 5-minute samples) for each measurement position. Noise levels have been corrected for façade reflections where appropriate.

Table 7939/T2 – L_{Aeq} and L_{Amax} Noise Levels

Measurement Position	Average $L_{Aeq, period}$ Noise Level (dB)		Range and [typical] L_{Amax} noise levels (dB)
	Daytime (07:00 – 23:00)*	Night-time (23:00 – 07:00) *	Night-time (23:00 – 07:00)*
Position 1 – New Wakefield Street	66	65	56-99 [86]
Position 2 – West of Re-development	60	58	52-84 [74]
Position A –Oxford Road	68	72	79-100 [100]
Position B- Junction of Oxford Road and New Wakefield Street	69	72	81-92 [92]
Position C – New Wakefield Street	70	69	79-90 [90]

*Positions A, B and C are reflective of the time periods over which the survey took place at these locations.

The typical background noise levels ($L_{A90, 15mins}$) at both unattended measurement positions are summarised in the following Table 7939/T3 below. This data can be used to set plant noise emission criteria for use in the assessment of noise emissions from any proposed plant at the development.

Table 7939/T3 – Measured Typical $L_{A90, 15mins}$ Noise Levels

Measurement Position	Minimum $L_{A90, 15mins}$ Noise Level during period (dB)		
	Office Hours (08:00 – 20:00)	Daytime (07:00 – 23:00)	Night-time (23:00 – 07:00)
Position 1 – New Wakefield Street	56	56	48
Position 2 – West of Re-development	55	55	51

Averaged spectral noise levels are graphically represented on the attached Graphs 7939/G5-6.

Histograms of the measured background noise levels at measurement Position 1 and 2 are provided on the attached Graphs 7939/G7-8.

3.0 PLANT NOISE EMISSION CRITERIA

Manchester City Council's standard requirements in relation to fixed plant installations are outlined within Manchester City Council's Noise and Planning Guidance dated December 2015 in Section 3.6.1.5.1, which states that the noise assessment should be based on BS 4142:2014. It is also stated that:

"Externally mounted ancillary plant, equipment and servicing shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a rating level of 5dB (L_{Aeq}) below the typical background (L_{A90}) noise level at the nearest noise sensitive location."

In line with the above requirements, the following plant noise emission criteria are proposed:

Table 7939/T4 – Plant Noise Emission Limits

Measurement Position	Maximum noise rating limit of all plant during relevant time period (dB)		
	Office Hours (08:00 – 20:00)	Daytime (07:00 – 23:00)	Night-time (23:00 – 07:00)
Position 1 – Wakefield Street	51	51	43
Position 2 – West of Re-development	50	50	46

In line with BS 4142: 2014, should the proposed plant be identified as having intermittent, tonal, impulsive or otherwise characteristic features, a further applicable penalty should be added to the predicted specific noise level.

4.0 NOISE MODELLING

In order to predict the extent of self screening and reflections afforded by the various surrounding buildings, an acoustic model of the development has been generated using the CadnaA platform.

The model allows the various sound sources, which in this case are the main surrounding roads and train lines, to be calibrated according to the noise levels measured on-site. The proposed buildings are subsequently built into the model and calculations using the methodology outlined in ISO9613 to predict both façade incident noise levels at all floor heights and selected receptor locations and to produce noise contours for the site and surrounding area.

The attached Noise Maps 7939/NM1-6 illustrate the façade incident noise levels for the site.

5.0 EXTERNAL NOISE INTRUSION CRITERIA

Residential Criteria

5.1 Local Authority Criteria

Anonymous Noise Sources

Manchester City Council's requirements with regards to noise ingress into residential developments from anonymous noise sources (e.g. road and railway noise) are outlined within Section 3.6.1.1 of Manchester City Council's Noise and Planning Guidance document dated December 2015, which states the following criteria:

- *Bedrooms (night-time - 23:00 – 07:00)* *30dB L_{Aeq}*
  Individual noise events should not normally exceed 45dB $L_{Amax,f}$ by more than 15 times
- *Living Rooms (daytime - 07:00 – 23:00)* *35dB L_{Aeq}*
- *Gardens and terraces (daytime - 07:00 – 23:00)* *55dB L_{Aeq}*

Entertainment Noise Sources

Manchester City Council's requirements with regards to entertainment noise ingress into residential developments are outlined within Section 3.6.1.2 of Manchester City Council's Noise and Planning Guidance document dated December 2015, which states the following criteria:

Music noise levels in the 63Hz and 125Hz octave centre frequency bands (L_{eq}) should be controlled so as not to exceed (in habitable rooms) 47dB and 41dB (L_{eq}) respectively.

5.2 British Standard 8233:2014

BS 8233:2014 "Guidance on Sound insulation and noise reduction for buildings" draws on the results of research and experience to provide information on achieving internal acoustic environments appropriate to their functions. The noise level values given are in terms of an average (L_{Aeq}) level.

The standard advises the following internal ambient noise levels for achieving suitable resting and sleeping conditions within residential properties. A brief explanation of the acoustic terminology used in this report is shown in Appendix A.

Table 7939/T5 – BS 8233:2014 Residential Criteria

Room	Daytime (07:00 to 23:00 hours)	Night-time (23:00 to 07:00 hours)
Living Rooms	35 dB $L_{Aeq,16hour}$	--
Dining Room/area	40 dB $L_{Aeq,16hour}$	--
Bedrooms	35 dB $L_{Aeq,16hour}$	30 dB $L_{Aeq,8hour}$

Although generally no specific numerical requirement is set in terms of an L_{Amax} noise level, BS 8233:2014 does provide the following guidance with regards individual noise events:

"Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or $L_{Amax,f}$ depending on the character and number of events per night. Sporadic noise events could require separate values."

Guidance provided in the World Health Organisation's Guidelines for Community Noise further refines the requirements for individual noise events as outlined below. However, Table H.3 of BS 8233:2014 does state a range of 45-55dB L_{Amax} for hotel bedrooms during the night-time period.

5.3 World Health Organisation: Guidelines for Community Noise

The document describes guideline levels that are *"essentially values for the onset of health effects from noise exposure"*.

A table of guideline values is included, relating to adverse health effects, referred to as any temporary or long term deterioration in physical, psychological, or social functioning that is associated with noise exposure.

The following is an extract from *Table 4.1: Guideline values for community noise in specific environments*, as stated in the document.

Table 7939/T6 – Guideline Values for Community Noise

Specific Environment	Critical Health Effect(s)	L_{Aeq} (dB)	Time Base (hours)	$L_{Amax,f}$ (dB)
Dwelling, indoors	Speech intelligibility and moderate annoyance, daytime and evening	35	16	-
Inside bedrooms	Sleep disturbance, night-times	30	8	45*
Outside bedrooms	Sleep disturbance, window open (outdoor values)	45	8	60

* With reference to maximum noise levels the following further guidance is provided within WHO:

"For a good sleep, it is believed that indoor sound pressure levels should not exceed approximately 45dB L_{Amax} more than 10-15 times per night (Vallet & Vernet 1991) and most studies show an increase in the percentage of awakenings at SEL values of 55-60 dBA (Passchier-Vermeer 1993; Finegold et al. 1994; Pearsons et al. 1995). For intermittent events that approximate aircraft noise, with an effective duration of 10-30s, SEL values of 55-60 corresponds to a L_{Amax} value of 45dB. Ten to 15 of these events during an 8 hour night-time implies a $L_{Aeq, 8h}$ of 20-25dB. This is 10-15dB below the $L_{Aeq, 8h}$ or 30dB for continuous night-time noise exposure, and shows that intermittent character of noise must be taken into account when setting night-time noise limits for noise exposure. For example, this can be achieved by considering the number of noise events and the difference between the maximum sound pressure level and the background of these events."

Therefore the frequency of occurrence of maximum noise events should not typically exceed 10-15 times in any night. Consideration is also required to be given to the SEL of each individual event to ensure that a level of 55-60dBA is not exceeded.

Non-Residential Criteria

The following sections pertain to the commercial and communal areas at ground, first and top floor levels.

5.4 British Standard 8233:2014

Ultimately the design criterion for non-residential spaces will depend on the end user activity. Hence, we outline criteria for these areas based on the guidance within BS 8233:2014. The standard advises the following internal ambient noise levels (L_{Aeq}) for the given activity and conditions for work requiring concentration within offices.

Table 7939/T7 – BS 8233:2014 Non-Residential Criteria

Activity	Location	Design Range $L_{Aeq,T}$ (dB)
Speech or Telephone Communications	Department Store	50-55
	Corridor, Circulation Space	45-55
Study and Work Requiring Concentration	Staff/Meeting Room, Training Room	35-45
	Executive Office	35-40

The standard also advises that noise levels should be within the range of 45-50 dBA within open plan offices where acoustic privacy is important.

5.5 British Council for Offices 2014

BCO 2014 provides guidance on external noise intrusion levels (whether from road, rail or aircraft sources) should, after attenuation by the composite building envelope, not exceed the following design criteria:

Table 7939/T8 – BCO 2014 Design Criteria

Criterion	Environment	Design Range
External noise intrusion levels	Open plan offices	NR40 (≈45dBA)
	Speculative Offices*	NR38 (≈43dBA)
	Cellular Offices	NR35 (≈40dBA)

*Please note, the speculative office criterion is a compromise between the ideal for open plan and cellular offices.

In addition, $L_{Amax\,(fast)}$ noise intrusion levels should not normally exceed 55dBA in open plan/speculative offices or 50dBA in cellular offices.

5.6 Summary

Residential Areas

The project criteria adopted for Student Bedrooms and Studios are therefore as follows:

Night-time (23:00 – 07:00)	30dB L_{Aeq} and typically < 45dB $L_{Amax,f}$ *
Daytime (07:00 – 23:00)	35dB L_{Aeq}

* Under WHO, 10-15 occurrences during the night-time in excess of 45dBA are "allowable". The new 2014 version of BS 8233 states L_{max} levels in the region of 45-55dBA could be considered acceptable.

Appropriate criteria for the shared student Living/Dining/Kitchen Rooms are as follows:

Daytime (07:00 – 23:00)	35dB L_{Aeq}

Non-Residential Areas

Although some of the above standard guidance does not specifically outline the time periods over which these criteria should be considered suitable, in the case of BS 8233:2014, it does note the time period should be appropriate for the activity involved. Currently proposed hours of operation are not known for the commercial unit and the relevant time period has therefore been assumed.

Based on guidance from BS8233:2014 and BCO 2014, we consider it appropriate to design to the following criteria:

Commercial Unit	08:00 – 20:00	50dB L_{Aeq}
Study Area (incl Libraries)	1 Hour	40dB L_{Aeq}
Common Room	Daytime (07:00 – 23:00)	40dB L_{Aeq}
Lobby/Laundry	Daytime (07:00 – 23:00)	45dB L_{Aeq}

6.0 EXTERNAL BUILDING FABRIC ASSESSMENT

6.1 Background

Appropriate internal noise levels can be achieved providing suitable building envelope constructions are employed. Analyses of the external building fabric have been undertaken in order to ascertain the required acoustic performance of the glazing and other external fabric elements to achieve the project criteria.

6.2 Assumptions

Our external building fabric analyses have assumed the following:

(a) Drawings

Our assessment has been based on Simpson Haugh and Partners drawings dated May 2017.

(b) Noise Levels

The assessment has been based on the design noise levels as detailed in Section 2.4.

(c) Room Absorption

We have assumed the bedrooms and studios to be acoustically "soft" with vinyl, curtains and other soft furnishings. For the purposes of our analyses we have assumed the following absorption coefficients.

Table 7939/T9 – Bedroom/Studio Absorption Coefficients

Absorption Coefficient (α) at Octave Band Centre Frequency (Hz)							
63	125	250	500	1k	2k	4k	8k
0.15	0.18	0.25	0.27	0.31	0.32	0.32	0.32

We have assumed the living/dining/kitchen rooms to be less acoustically absorptive (with a vinyl floor finish and worktops & cupboards, etc.). For the purposes of our analyses we have assumed the following absorption coefficients.

Table 7939/T10 – Living/Dining/Kitchen Room Absorption Coefficients

Absorption Coefficient (α) at Octave Band Centre Frequency (Hz)							
63	125	250	500	1k	2k	4k	8k
0.15	0.18	0.20	0.22	0.22	0.22	0.23	0.27

We have assumed offices and common rooms to be less acoustically absorptive still (with a carpet floor finish but no acoustically absorbent ceiling). For the purposes of our analyses we have assumed the following absorption coefficients.

Table 7939/T11 – Office/Common Room Absorption Coefficients

Absorption Coefficient (α) at Octave Band Centre Frequency (Hz)							
63	125	250	500	1k	2k	4k	8k
0.08	0.08	0.08	0.10	0.15	0.20	0.20	0.20

(d) External Wall – Unitised Curtain Walling

The external façade of the building is now to comprise unitised curtain walling with fixed glazing, opening glazed side lights for purge ventilation and spandrel panels.

The fixed glazing and glazed side lights (with no internal lining behind them) should achieve the glazing performances stated below in Section 6.3 for the relevant façade zone (see Section 6.4).

The spandrel panels are understood to either comprise the double glazed unit (relevant to façade zone) with full fill mineral wool insulation (~200mm) behind and internally faced with a 3mm steel sheet, or they comprise 3mm aluminium sheet, air space, 3mm aluminium sheet, full fill mineral wool insulation (~200mm) behind and internally faced with 3mm steel sheet. The recessed area panels comprise 3mm aluminium sheet, air space, 1.5mm steel sheet, 120mm mineral wool insulation and internally faced with 3mm steel sheet.

At low level and to the sides of the vision panels, these spandrel panels are further internally lined with metal studwork with mineral wool insulation infill and internally faced with plasterboard. There are two Wall Types necessary for this internal lining, which are detailed below.

Wall Type 1

In order to achieve Manchester City Council's entertainment noise break-in criteria at night, it will be necessary to acoustically upgrade the external wall construction at lower floor levels towards the north end of the development. This is applicable to Zone 1 (i.e. Levels 2 to 4, overlooking New Wakefield Street).

- 100mm metal studwork
- 100mm dense (~60kg/m^3) RW3 Rockwool full fill
- 3 x 15mm dense plasterboard, e.g. BG SoundBloc or similar

As such, we have assumed the following sound reduction indices (equating to an overall R_W of 54dB) for all non-vision façade areas comprising the above construction:

Table 7939/T12 – Wall Type 1 – Non-Vision SRIs

Assumed Sound Reduction Index (dB) at Octave Band Centre Frequency (Hz)							
63	125	250	500	1k	2k	4k	8k
26	37	45	55	55	55	55	55

Wall Type 2

This is applicable to all other façade Zones.

- 100mm metal studwork
- 100mm dense (~45kg/m^3) RWA45 Rockwool full fill
- 2 x 15mm dense plasterboard, e.g. BG SoundBloc or similar

As such, we have assumed the following sound reduction indices (equating to an overall R_W of 53dB) for all non-vision façade areas comprising the above construction:

Table 7939/T13 – Wall Type 2 – Non-Vision SRIs

Assumed Sound Reduction Index (dB) at Octave Band Centre Frequency (Hz)							
63	125	250	500	1k	2k	4k	8k
21	32	45	55	55	55	55	55

Should the proposals for non-vision areas change, it is critical we are informed at the earliest opportunity as this could have a significant impact on the sound insulation performance requirements of the glazing systems.

(e) Ventilation

A "whole-house" mechanical ventilation (WHMV – Approved Document F System 4) system is being considered to be installed throughout the development. Such a system is likely to be similar to the Villavent or Vent Axia systems used on other UNITE projects. This comprises a low speed encased fan within a fully ducted system with fresh air supply to bedrooms and extract from kitchens and toilets/bathrooms. It is typical for the WHMV system to also have heat recovery (i.e. MVHR) capabilities for increased SAP ratings. We have assumed that external noise break-in to the bedrooms and living rooms via the ventilation system will be negligible (when compared to the glazing) due to the fully ducted nature of the system.

It should be noted the WHMV provides background trickle ventilation only and that side opening lights are to generally be openable to provide rapid or purge ventilation. During those periods where they are opened for purge/rapid ventilation, noise levels will naturally be increased internally.

If trickle ventilators are desirable, we have carried out the necessary assessment and appropriate acoustic performance specifications for such are detailed below for this eventuality.

6.3 Specification & Guidance Constructions

Appendix B (attached) details the sound reduction performance specification for the glazed elements of the external building fabric and any trickle ventilators.

The glazing performance specifications apply to the glazing package as a whole inclusive of glazing, louvres, spandrel panels, framing, opening lights, doors, seals, etc. The performance of the glazing system will depend on many factors such as the glazing configuration, size of window panels, quality of framing, quality of sealing, etc.

For guidance purposes we would typically expect the following glazing configurations detailed below to prove commensurate with achieving the sound insulation performance specifications detailed within Appendix B.

Please note – *The guidance configurations described in Table 7939/T14 are given for costing purposes only. All window systems should be capable of meeting the performance specifications shown in Appendix B, with laboratory test certificates being made available in support of the quoted performance. Glazing proposals which simply reflect the guidance constructions indicated in this report will not, in isolation, be sufficient evidence that a window configuration will meet the performance specification.*

Table 7939/T14 – Guidance Glazing Configurations

Glazing Type	Glazing Configuration
G1	Very high performance secondary glazing comprising 10mm toughened glass secondary pane internally / 300mm cavity with absorptive reveal liners / 4mm glazing / 12mm cavity / 6mm glazing DGU externally
G2	Very high performance laminated double glazing comprising 10mm glass / 12mm cavity / 8.4mm acoustically laminated PVB glass
G3	High performance laminated double glazing comprising 10mm glass / 12mm cavity / 6.4mm acoustically laminated PVB glass
G4	Medium performance double glazing, e.g. 10mm glass / 12mm cavity / 6mm glass
G5	Medium performance double glazing, e.g. 10mm glass / 12mm cavity / 4mm glass
G6	Standard performance double glazing with differing pane thicknesses, e.g. 4mm glass / 12mm cavity / 6mm glass

Should trickle ventilators be desired instead of or in addition to mechanical ventilation, the following overall sound insulation performance is provided for guidance purposes.

Table 7939/T15 – Guidance Trickle Ventilators

Ventilator Type	Typical Ventilator Type	Ventilator Performance, $D_{n,e,w}$ (dB)
V1	High specification through-the-frame type trickle ventilator, e.g. Renson Invisivent EVO AK High	39
V2	Standard specification through-the-frame type trickle ventilator, e.g. Renson Invisivent EVO AK Basic	34

6.4 Applicable Zoning

Due to the differences in the prevailing noise climate around the site, five primary glazing zones have been defined, as indicated on the attached Façade Zoning Plans 7939/FZPs. The following table outlines the requirements:

Table 7939/T16 – Glazing & Vent Type Applied to Zoning

Façade Zone	Room Type	Glazing Type	Ventilator Type *	Wall Type
Zone 1	Bedroom / Studio	G1	-	Wall Type 1
	Living/Dining/Kitchen Room	G4	V1	Wall Type 1
	Common Room / Office / Reception	G4	-	Wall Type 2
Zone 2	Bedroom / Studio	G2	-	Wall Type 2
	Living/Dining/Kitchen Room	G6	V1	Wall Type 2
	Common Room / Office / Reception	-	-	Wall Type 2
Zone 3	Bedroom / Studio	G3	-	Wall Type 2
	Living/Dining/Kitchen Room	G6	V1	Wall Type 2
	Common Room / Office / Reception	-	-	Wall Type 2
Zone 4	Bedroom / Studio	G4	-	Wall Type 2
	Living/Dining/Kitchen Room	G6	V2	Wall Type 2
	Common Room / Office / Reception	-	-	Wall Type 2
Zone 5	Bedroom / Studio	G5	-	Wall Type 2
	Living/Dining/Kitchen Room	G6	V2	Wall Type 2
	Common Room / Office / Reception / Commercial	G6	-	Wall Type 2

**The ventilator type is provided as guidance should trickle ventilators be required, otherwise it has been assumed that an MVHR or other mechanical ventilation system will be provided. Typically ventilators are only required to 8-bed or more cluster flats and only to the Living/Dining/Kitchen Room.*

6.5 Flanking Specification

We also advise on the flanking specification for any curtain walling or continuous glazing systems proposed as follows to aid the development of such systems.

Flanking Performance Specification

The previous Sections are in relation to external noise intrusion through any curtain walling systems to internal areas. Separating wall and floor sound insulation performance can often be compromised by curtain walling systems. It is thus important that an additional specification for the curtain walling package be introduced, which will limit the amount of sound transfer across separating wall and floor lines through the curtain walling system. A flanking performance specification is attached within Appendix B – Section 3.0.

Achievement of the specification can be demonstrated by laboratory acoustic testing in general accordance with BS EN ISO 10848-2:2006. This is admittedly a complex and costly testing procedure and therefore the supplier may – following tender reviews – be allowed to demonstrate by other means that the specification can be achieved. This is reflected in the specification wording.

The specification should also be incorporated within any other packages, which could affect the transmission of flanking sound at separating wall and floor lines.

It is likely insulated double/split mullions and transoms will be required in order to achieve the attached flanking specification. This obviously has a large impact on the design and style of any curtain walling system and should be investigated at the earliest opportunity to ensure the specification is achieved.

7.0 CONCLUSION

RBA Acoustics have undertaken noise monitoring at the proposed UNITE student accommodation site at 1-5 New Wakefield Street, Manchester. The measured noise levels are presented herein. The resultant noise levels have been used in our assessment of the glazing and ventilation requirements to ensure suitable internal noise levels are achieved at the proposed development with reference to BS 8233, WHO, BCO and anticipated Local Authority criteria.

We do not consider planning approval should be rejected on the basis of noise and can confirm internal noise levels can be effectively controlled by implementing acoustic glazing configurations.

General guidance configurations have been suggested for the glazing and ventilation that should be capable of achieving the required specifications detailed within Appendix B.

In addition, suitable plant noise emission criteria have also been stipulated based upon the results of the noise survey.

Appendix A - Acoustic Terminology

dB	Decibel - Used as a measurement of sound pressure level. It is the logarithmic ratio of the noise being assessed to a standard reference level.
dB(A)	The human ear is more susceptible to mid-frequency noise than the high and low frequencies. To take account of this when measuring noise, the 'A' weighting scale is used so that the measured noise corresponds roughly to the overall level of noise that is discerned by the average human. It is also possible to calculate the 'A' weighted noise level by applying certain corrections to an un-weighted spectrum. The measured or calculated 'A' weighted noise level is known as the dB(A) level. Because of being a logarithmic scale noise levels in dB(A) do not have a linear relationship to each other. For similar noises, a change in noise level of 10dB(A) represents a doubling or halving of subjective loudness. A change of 3dB(A) is just perceptible.
L_{eq}	L_{eq} is defined as a notional steady sound level which, over a stated period of time, would contain the same amount of acoustical energy as the actual, fluctuating sound measured over that period (1 hour).
L_{Aeq}	The level of notional steady sound which, over a stated period of time, would have the same A-weighted acoustic energy as the A-weighted fluctuating noise measured over that period.
L_{An} (e.g. L_{A10}, L_{A90})	If a non-steady noise is to be described it is necessary to know both its level and the degree of fluctuation. The L_n indices are used for this purpose, and the term refers to the level exceeded for n% of the time, hence L_{10} is the level exceeded for 10% of the time and as such can be regarded as the 'average maximum level'. Similarly, L_{90} is the average minimum level and is often used to describe the background noise.
$L_{max,T}$	The instantaneous maximum sound pressure level which occurred during the measurement period, T. It is commonly used to measure the effect of very short duration bursts of noise, such as for example sudden bangs, shouts, car horns, emergency sirens etc. which audibly stand out from the general level of, say, traffic noise, but because of their very short duration, maybe only a very small fraction of a second, may not have any effect on the L_{eq} value.

Appendix B – External Building Fabric Acoustic Specification

1.0 Window Sound Insulation Performance

Glazed units (inclusive of glazing, louvres, timber panels, spandrel panels, infill panels, framing, opening lights, balcony/terrace doors, seals, etc. as appropriate) should achieve the following minimum sound reduction indices as tested in general accordance with BS EN ISO 10140-2:2010:

Type	Minimum Recommended Sound Reduction Index (dB) at Octave Band Centre Frequency (Hz)								R_w (dB)
	63	125	250	500	1k	2k	4k	8k	
G1	34	33	52	54	58	64	72	72	56
G2	31	28	30	39	44	49	56	56	42
G3	23	27	29	36	41	42	52	52	39
G4	22	26	27	34	40	38	46	46	38
G5	21	25	22	33	40	38	44	44	36
G6	19	23	22	27	38	38	38	38	33

Note: R_w is the "overall weighted sound reduction index" tested in a laboratory.

N.B. as the internal noise criteria are expressed in dBA terms, other frequency specific performance levels may ultimately prove acoustically acceptable. Test data for representative samples of all glazing systems shall be submitted to RBA Acoustics for approval to demonstrate compliance with the above performance specifications.

2.0 Ventilator Sound Insulation Performance

Ventilators (in their open state) should achieve the following minimum element-normalised level differences as tested in accordance with BS EN 20140-10:1992:

Type	Minimum Recommended $D_{n,e}$ (dB) at Octave Band Centre Frequency (Hz)								$D_{n,e,w}$ (dB)
	63	125	250	500	1k	2k	4k	8k	
V1	36	40	37	35	37	44	65	65	39
V2	33	37	34	40	45	49	49	49	34

Note: $D_{n,e,w}$ is the "overall weighted element normalised level difference" tested in a laboratory.

Please note the above specification(s) assumes one ventilator will be installed per room. The specification(s) should be increased by a factor of 10Log(N) should N ventilators be required per room, i.e. increase by +3dB or +5dB respectively should two or three ventilators be required per room.

N.B. as the internal noise criteria are expressed in dBA terms, other frequency specific performance levels may ultimately prove acoustically acceptable. Test data for the vents in their open state shall be submitted to RBA Acoustics for approval.

3.0 Acoustic Flanking Specification

Extent

There is potential for any curtain walling or continuous system to transmit sound across the separating floors and walls, and to thus result in future sound insulation problems.

The following specification should therefore be introduced within the tender documentation in order to ensure the system components are adequately designed.

The following specifications apply to all curtain walling or continuous elements between residential units and, if applicable, between residential units and commercial areas. Between non-residential areas (e.g. commercial to commercial) it is standard practice to relax the specification to a value of 50dB $D_{n,f,w}$.

With regard to potential flanking through the panels, the specification is commensurate with relatively high sound insulation levels. Achievement of this specification will require careful consideration of the panel design, in particular the insulation type and construction make-up of the panel skin. In addition it is likely to be necessary to design the cladding such that double/twin insulated mullions and transoms are included.

Horizontal Flanking at Separating Wall Lines

The curtain walling/continuous system shall achieve a horizontal weighted normalised flanking level difference of 60dB $D_{n,f,w}$ when tested in general accordance with BS EN ISO 10848-2:2006 [previously BS EN 20140-9:1994] (the methodology amended accordingly).

The supplier shall demonstrate by the provision of previous test reports (and comparative calculations if required) that the specification can be achieved. The Client, however, reserve the right to insist on laboratory acoustic testing if any doubts remain in relation to the flanking performance of the system.

The curtain walling system shall provide suitable surfaces against which a good acoustic seal can be made with future separating walls.

Vertical Flanking at Separating Floor Lines

The curtain walling system shall achieve a vertical weighted normalised flanking level difference of 60dB $D_{n,f,w}$ when tested in general accordance with BS EN ISO 10848-2:2006 [previously BS EN 20140-9:1994] (the methodology amended accordingly).

The supplier shall demonstrate by the provision of previous test reports (and comparative calculations if required) that the specification can be achieved. The Client, however, reserve the right to insist on laboratory acoustic testing if any doubts remain in relation to the flanking performance of the system.

The curtain walling system shall provide suitable surfaces against which a good acoustic seal can be made with future separating floors.

Appendix C – CDM Considerations

The following hazards pertinent to our design input have been identified and control measures suggested:

Hazard	Risk Of	At Risk	Rating			Control Measures	Controlled		
			L	S	R		L	S	R
Acoustic glazing - weight	Strain of neck, limbs or back. Fall from height.	Contractors	3	5	15	Alternative "standard" glazing has been investigated but not considered viable. Provide sufficient manpower, lifting gear and structural support	1	5	5

L: Likelihood
S: Severity
R: Rating

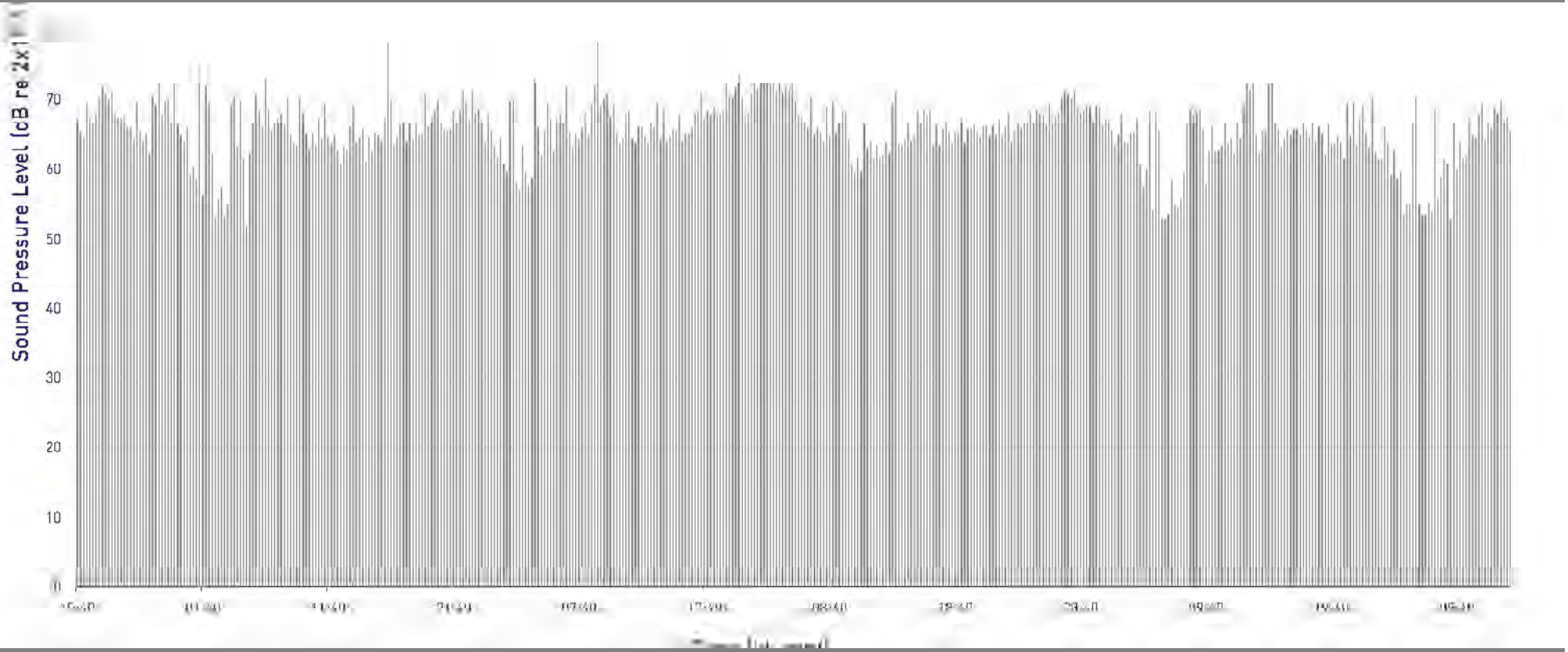
1-5 New Wakefield Street, Manchester

L_{Aeq} Time History

Measurement Position 1, Wednesday 10 May to Monday 15 May 2017

RBA ACOUSTICS

Graph 7937/G1



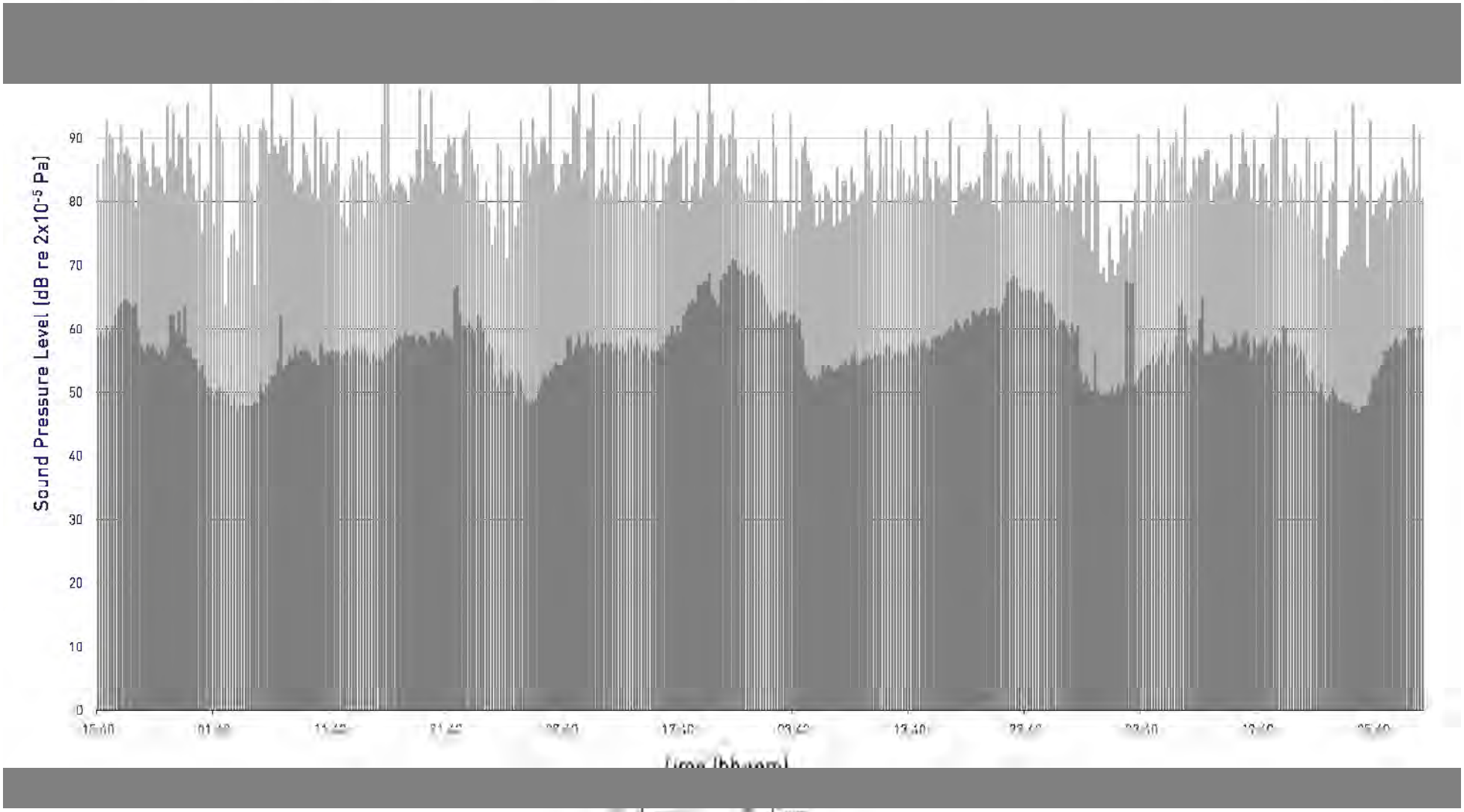
1-5 New Wakefield Street, Manchester

$L_{Amax,T}$ and L_{A90} Time History

Measurement Position 1, Wednesday 10 May to Monday 15 May 2017

RBA ACOUSTICS

Graph 7939/G2



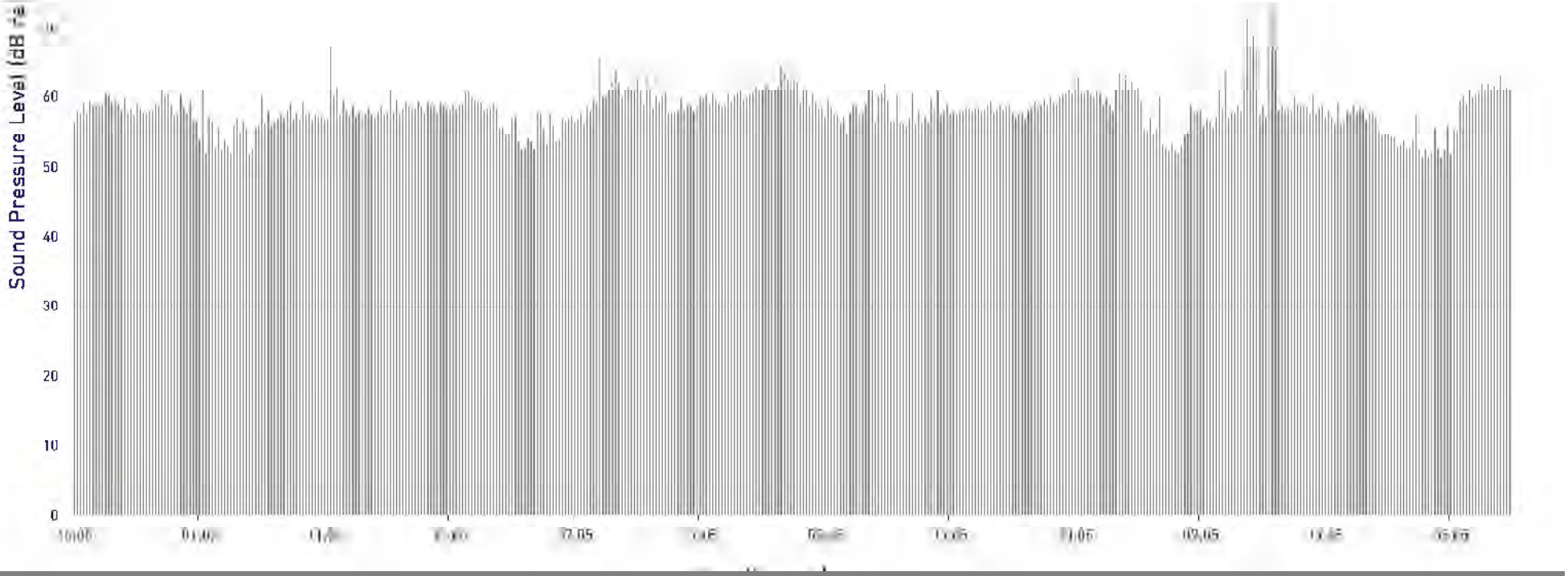
1-5 New Wakefield Street, Manchester

L_{Aeq} Time History

Measurement Position 2, Wednesday 10 May to Monday 15 May 2017

RBA ACOUSTICS

Graph 7939/G3



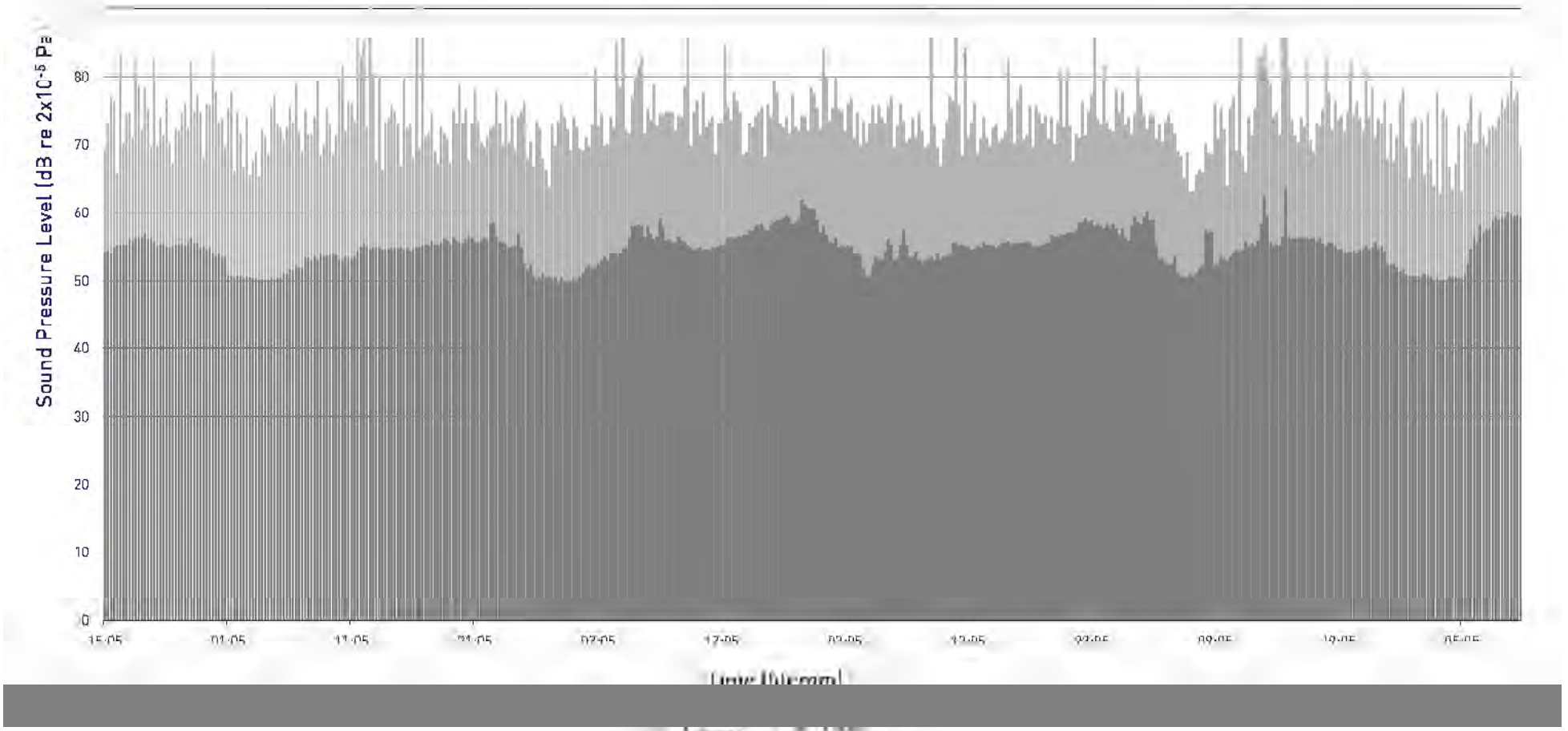
1-5 New Wakefield Street, Manchester

$L_{Aeq,T}$ and L_{A90} Time History

Measurement Position 2, Wednesday 10 May to Monday 15 May 2017

RBA ACOUSTICS

Graph 7939/SA



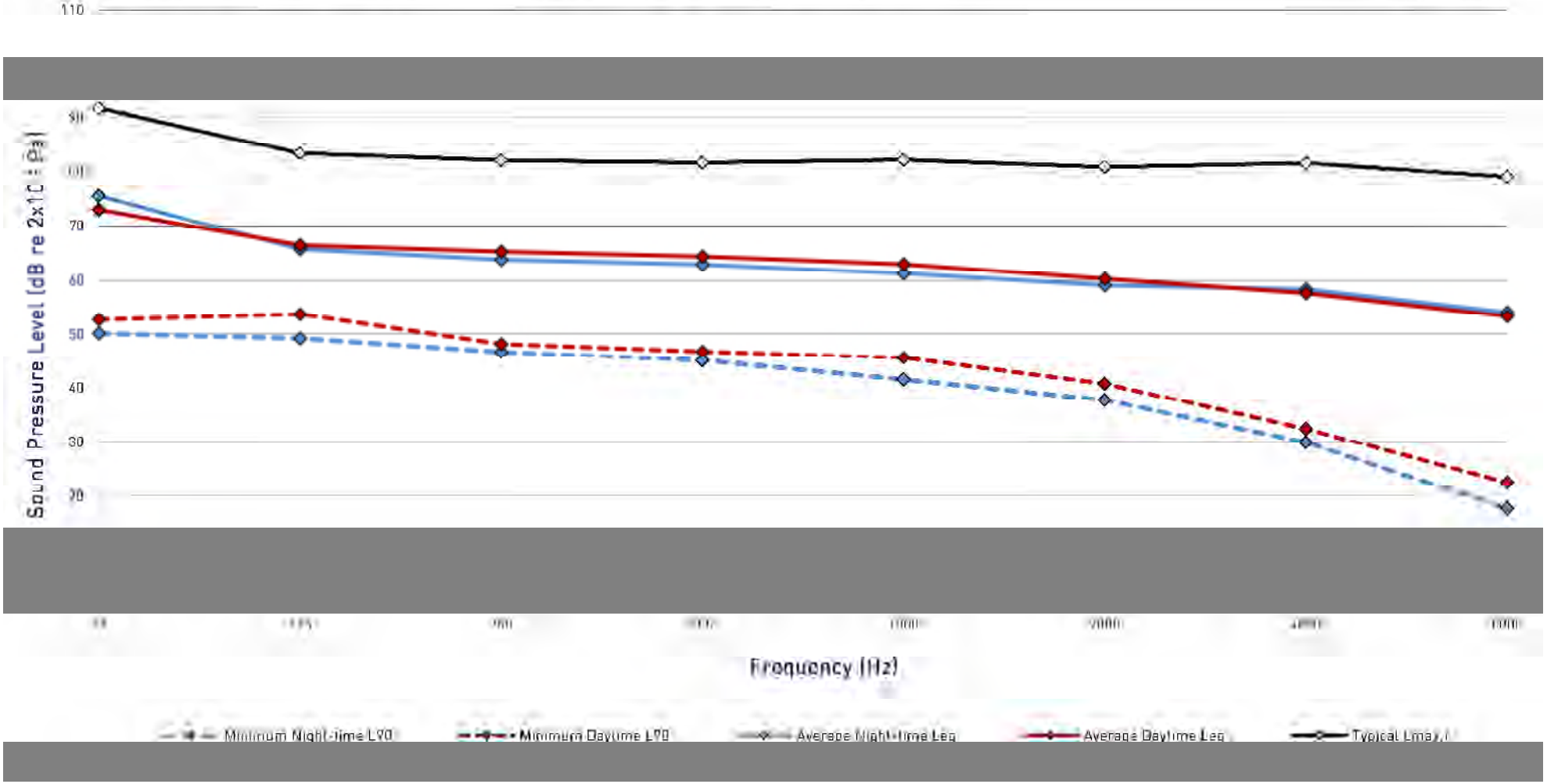
1-5 New Wakefield Street, Manchester

Spectral Noise Levels

Measurement Position 1, Wednesday 10 May to Monday 15 May 2017

RBA ACOUSTICS

Sheet 7929/05



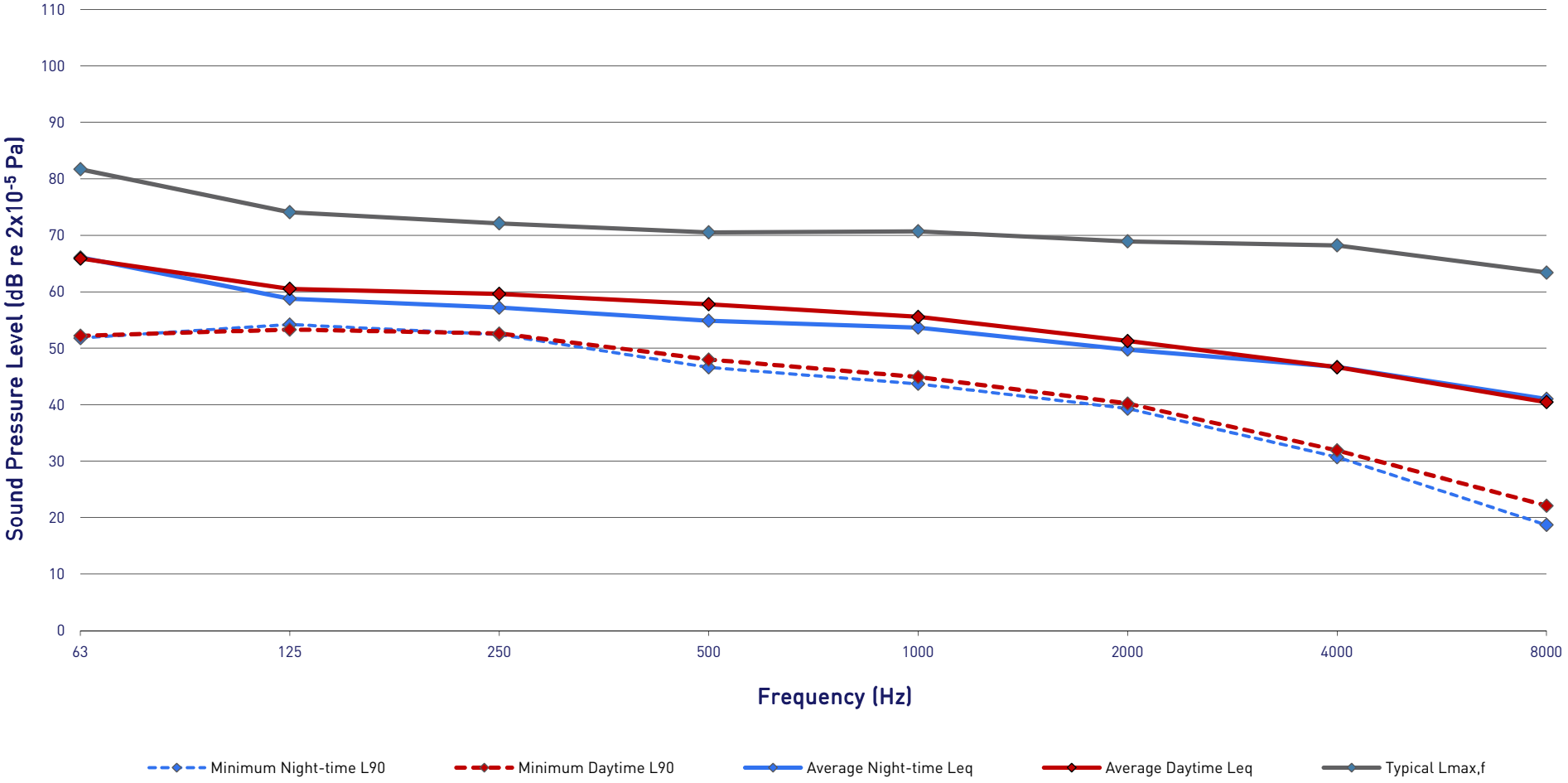
1-5 New Wakefield Street, Manchester

Spectral Noise Levels

Measurement Position 2, Wednesday 10 May to Monday 15 May 2017

RBA ACOUSTICS

Graph 7939/G6



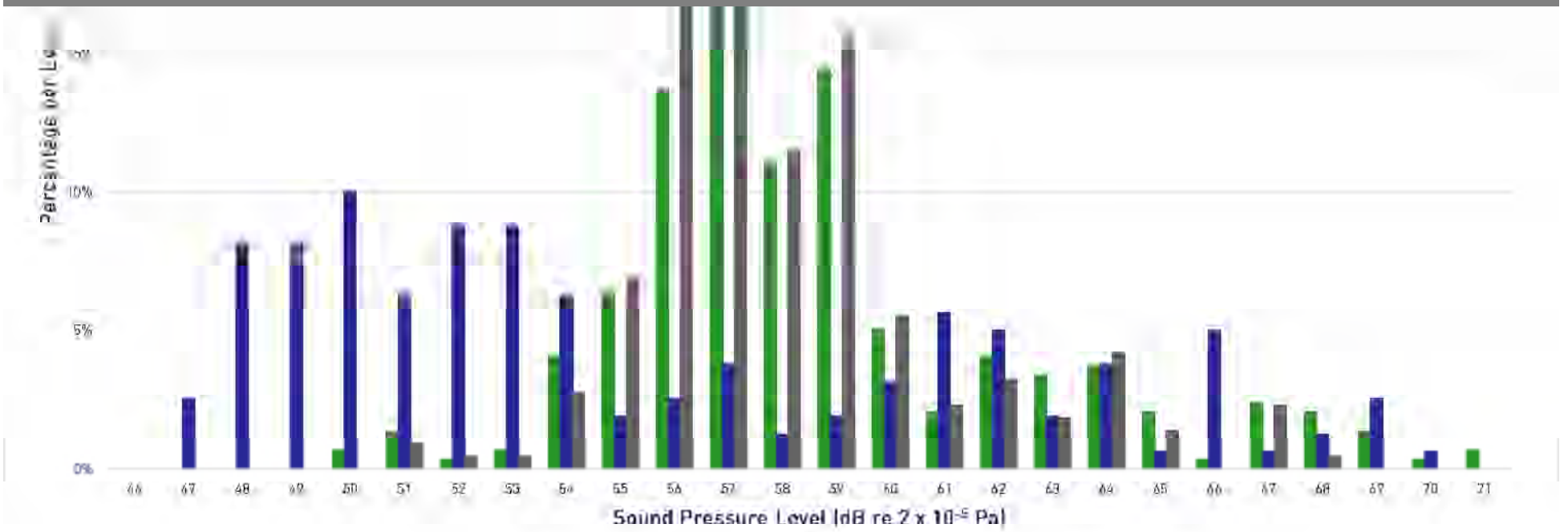
1-5 New Wakefield Street, Manchester

$L_{A90,15\ minutes}$ Histogram

Measurement Position 1, Wednesday 10 May to Monday 15 May 2017

RBA ACOUSTICS

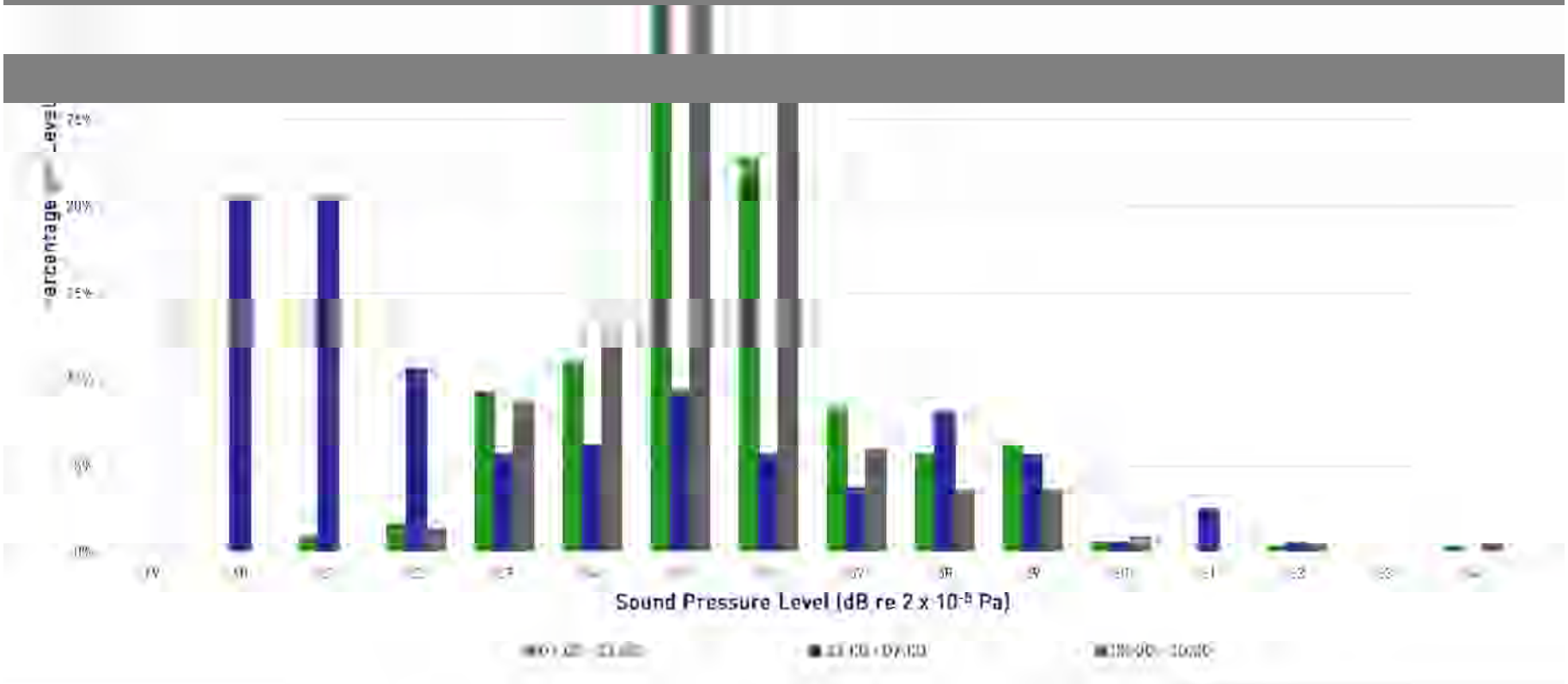
Graph 7939/G7

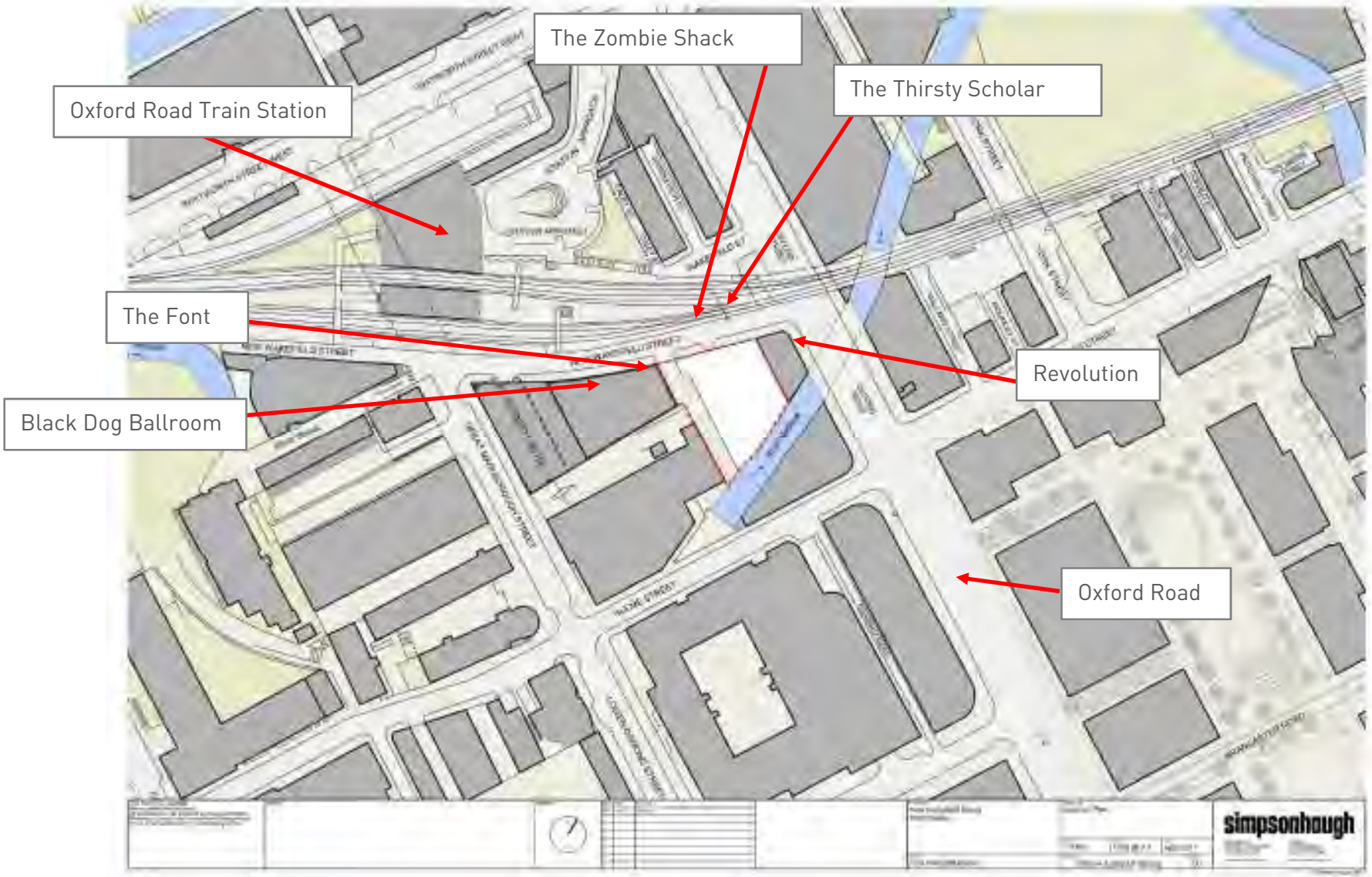


1 - 5 New Wakefield Street, Manchester

$L_{A90,15\ minutes}$ Histogram

Measurement Position 2, Wednesday 10 May to Monday 15 May 2017





UNITE, 1-5 New Wakefield Street, Manchester

Site Plan detailing surrounding area

Site Plan 7939/SP1

20 March 2018

Not to Scale

RBA ACOUSTICS



UNITE, 1-5 New Wakefield Street, Manchester

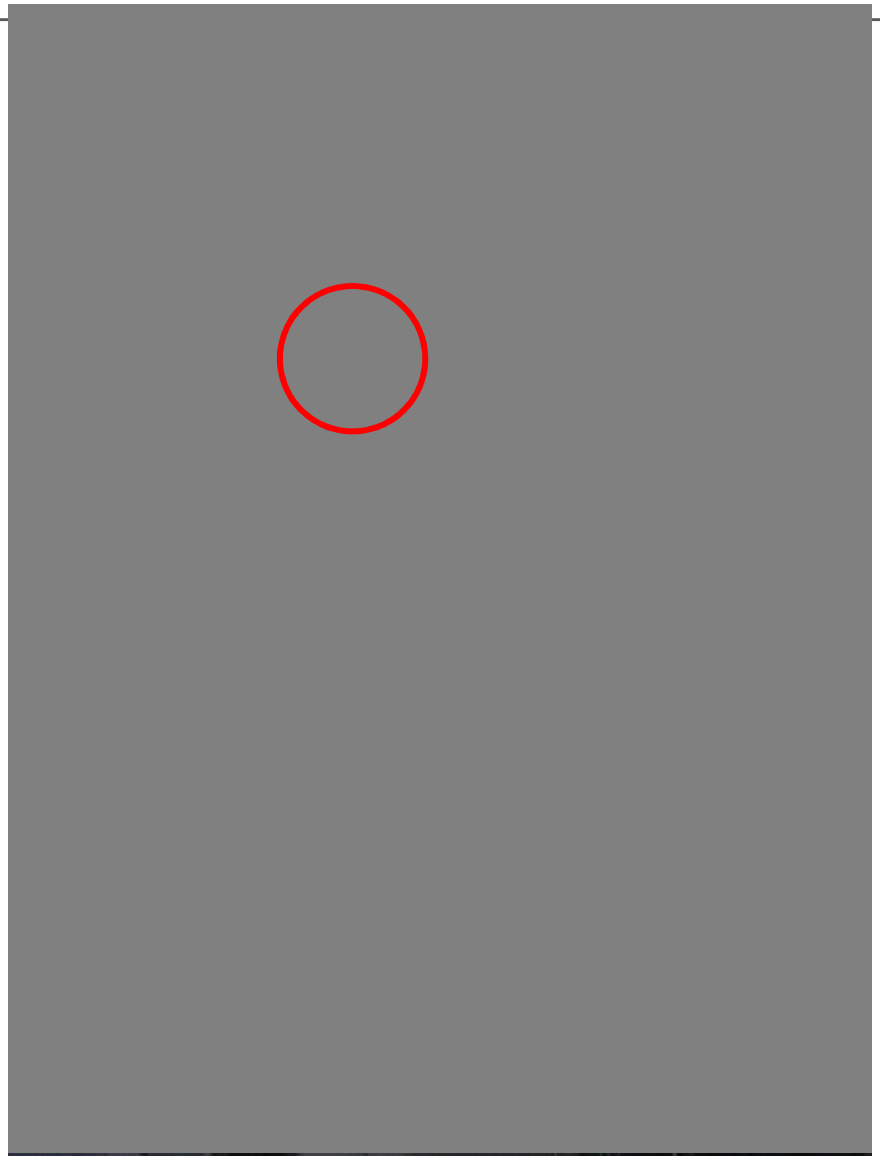
Site Plan detailing Measurement Positions

Site Plan 7939/SP2

20 March 2018

Not to Scale

RBA ACOUSTICS



UNITE, 1-5 New Wakefield Street, Manchester

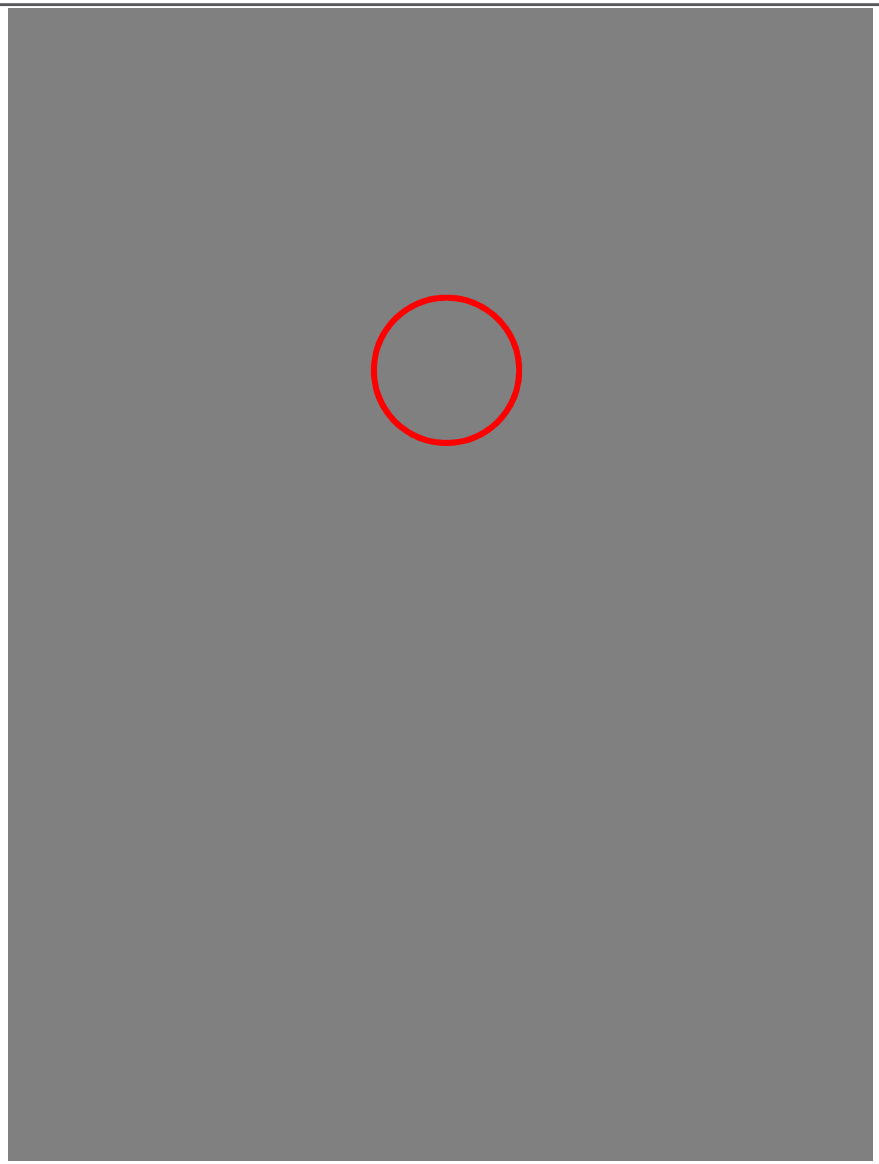
Photograph Showing Measurement Position 1,

Looking South-east

Photograph 7939/P1

20 March 2018

RBA ACOUSTICS



UNITE, 1-5 New Wakefield Street, Manchester

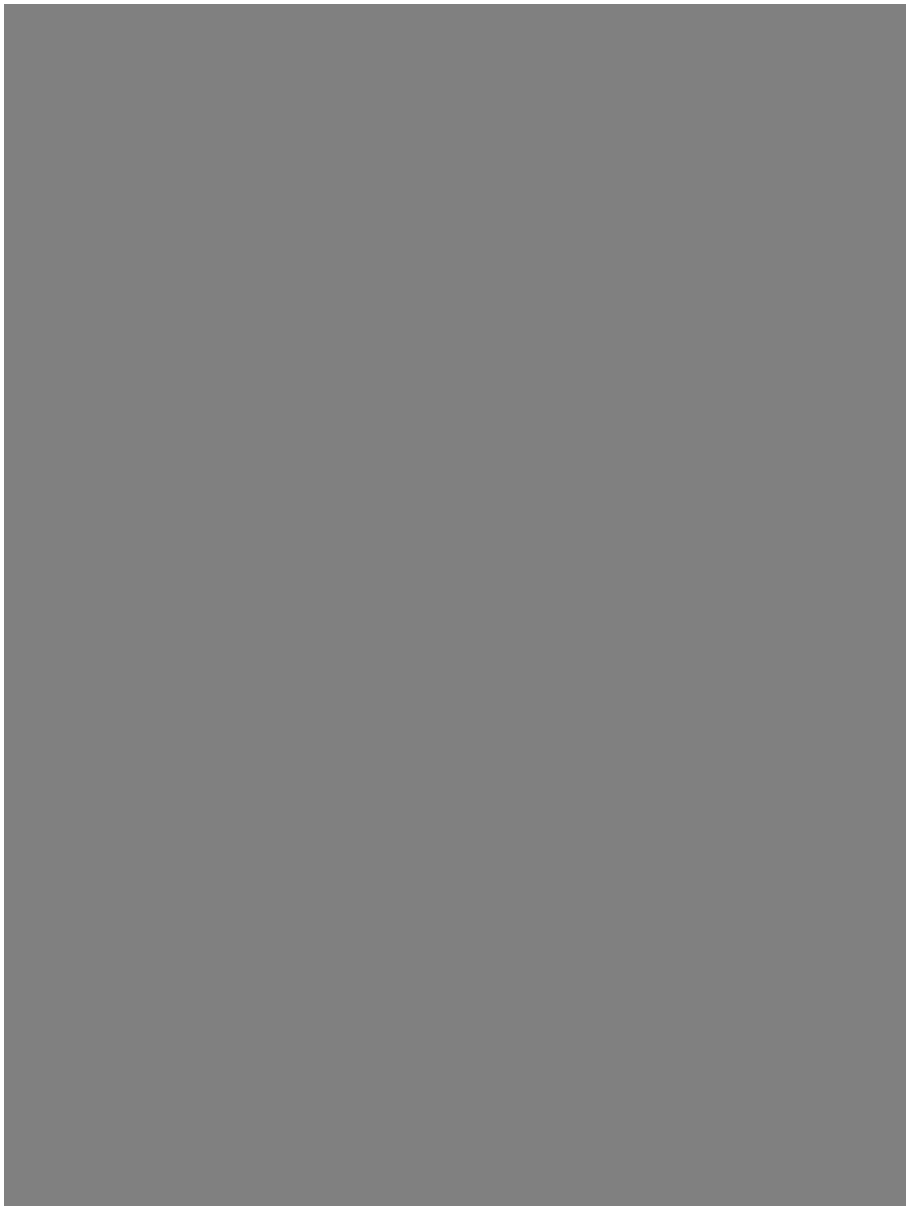
Photograph Showing Measurement Position 2,

Looking South-east

Photograph 7939/P2

20 March 2018

RBA ACOUSTICS



UNITE, 1-5 New Wakefield Street, Manchester

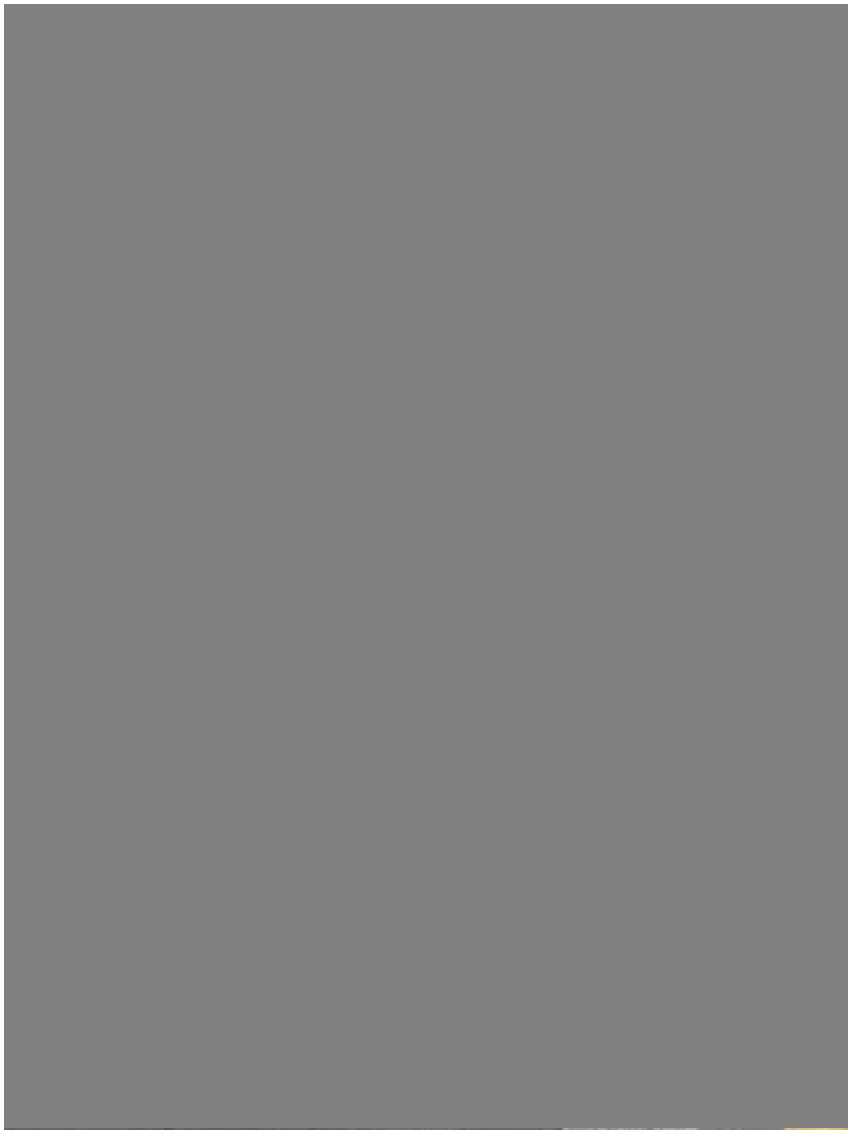
Photograph Showing Measurement Position A,

Looking North-west

Photograph 7939/P3

20 March 2018

RBA ACOUSTICS



UNITE, 1-5 New Wakefield Street, Manchester

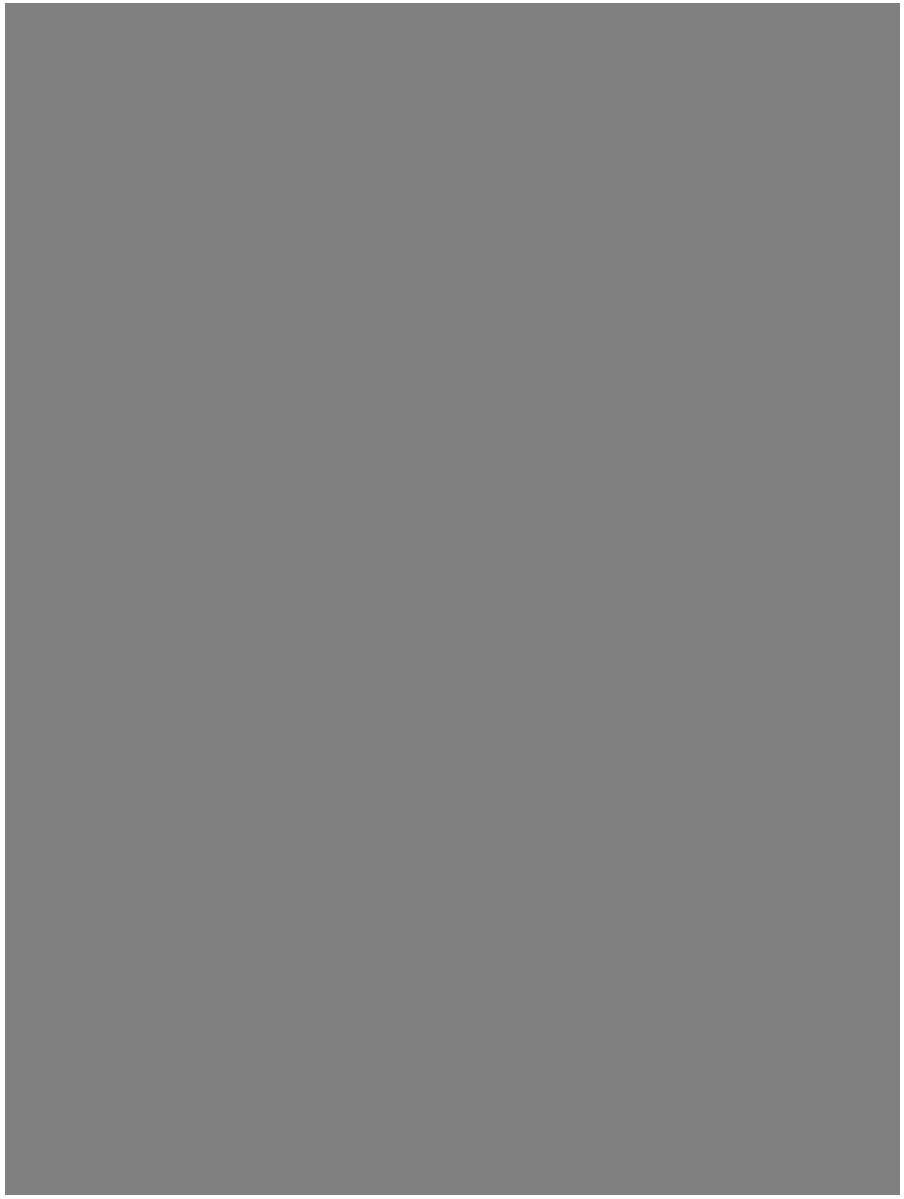
Photograph Showing Measurement Position B,

Looking North-west

Photograph 7939/P4

20 March 2018

RBA ACOUSTICS



UNITE, 1-5 New Wakefield Street, Manchester

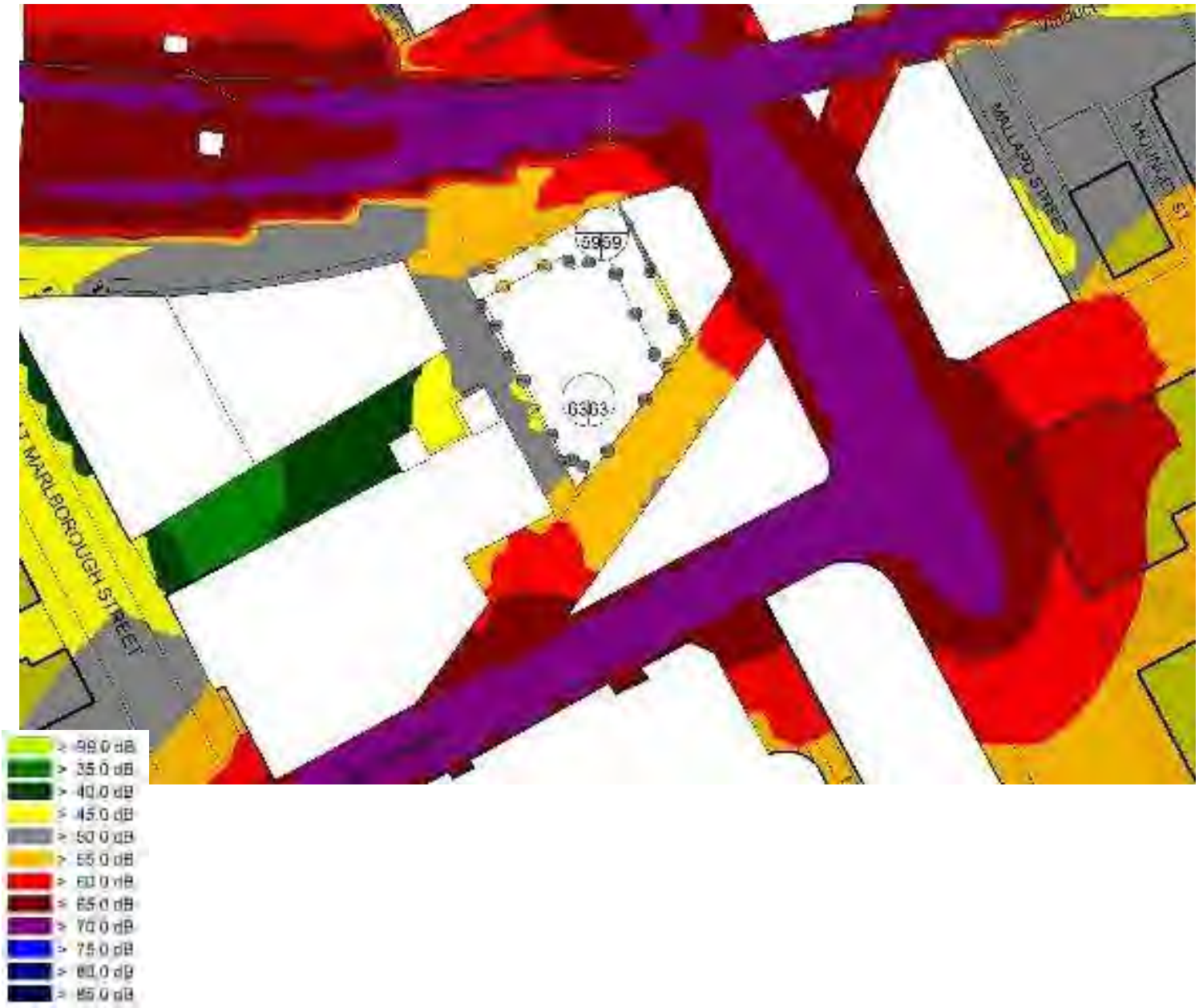
Photograph Showing Measurement Position C,

Looking West

Photograph 7939/P5

20 March 2018

RBA ACOUSTICS



UNITE, 1-5 New Wakefield Street, Manchester

Noise Map 7939/NM1

Predicted Daytime L_{eq} – Grid 4m above ground

20 March 2018

RBA ACOUSTICS

UNITE, 1-5 New Wakefield Street, Manchester

Noise Map 7939/NM2

Daytime L_{eq}

20 March 2018

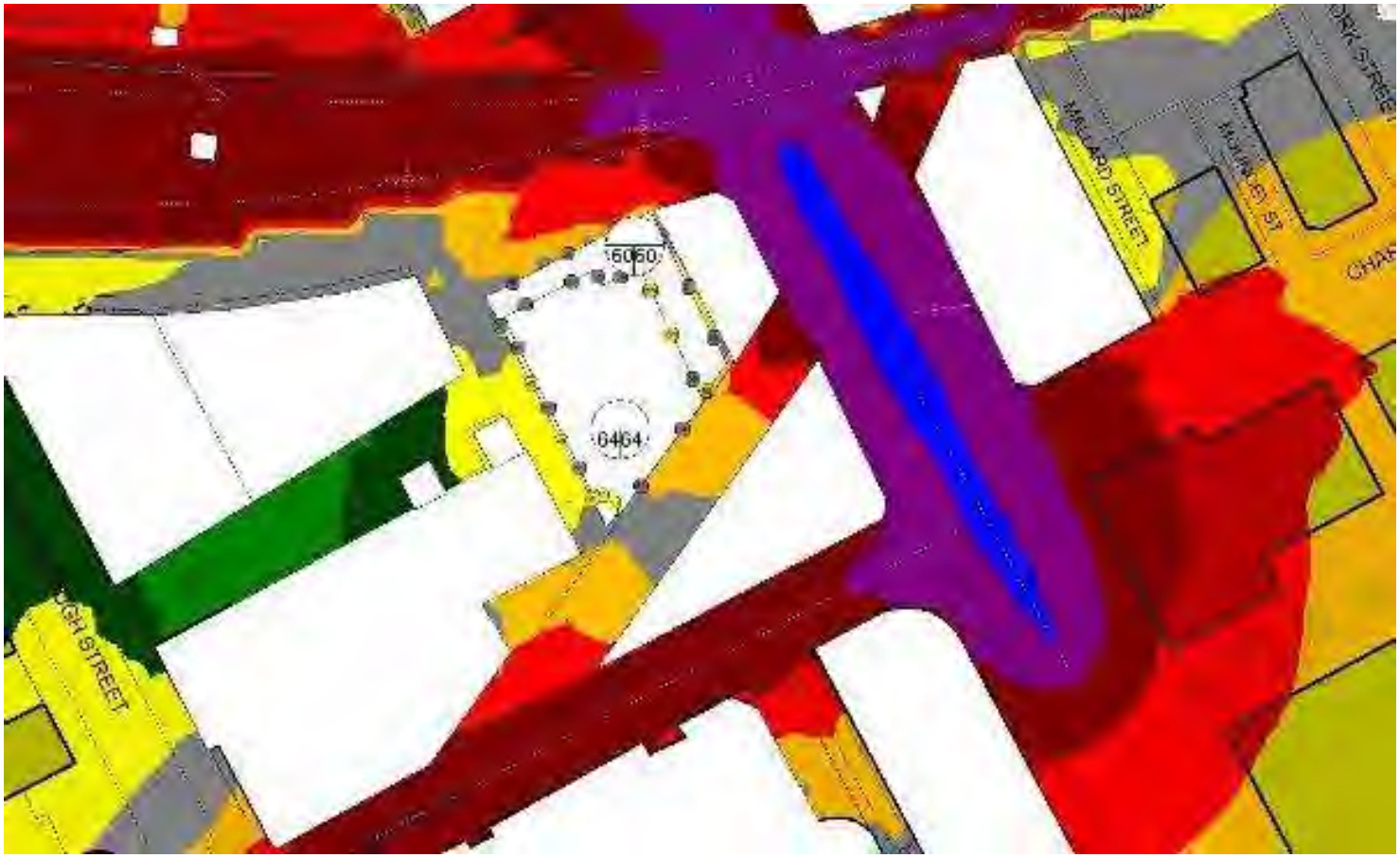


View from north-west



View from south-east

RBA ACOUSTICS



UNITE, 1-5 New Wakefield Street, Manchester

Noise Map 7939/NM3

Night-time L_{eq} – Grid 4m above ground

20 March 2018

RBA ACOUSTICS

UNITE, 1-5 New Wakefield Street, Manchester

Noise Map 7939/NM4

Night-time L_{eq}

20 March 2018

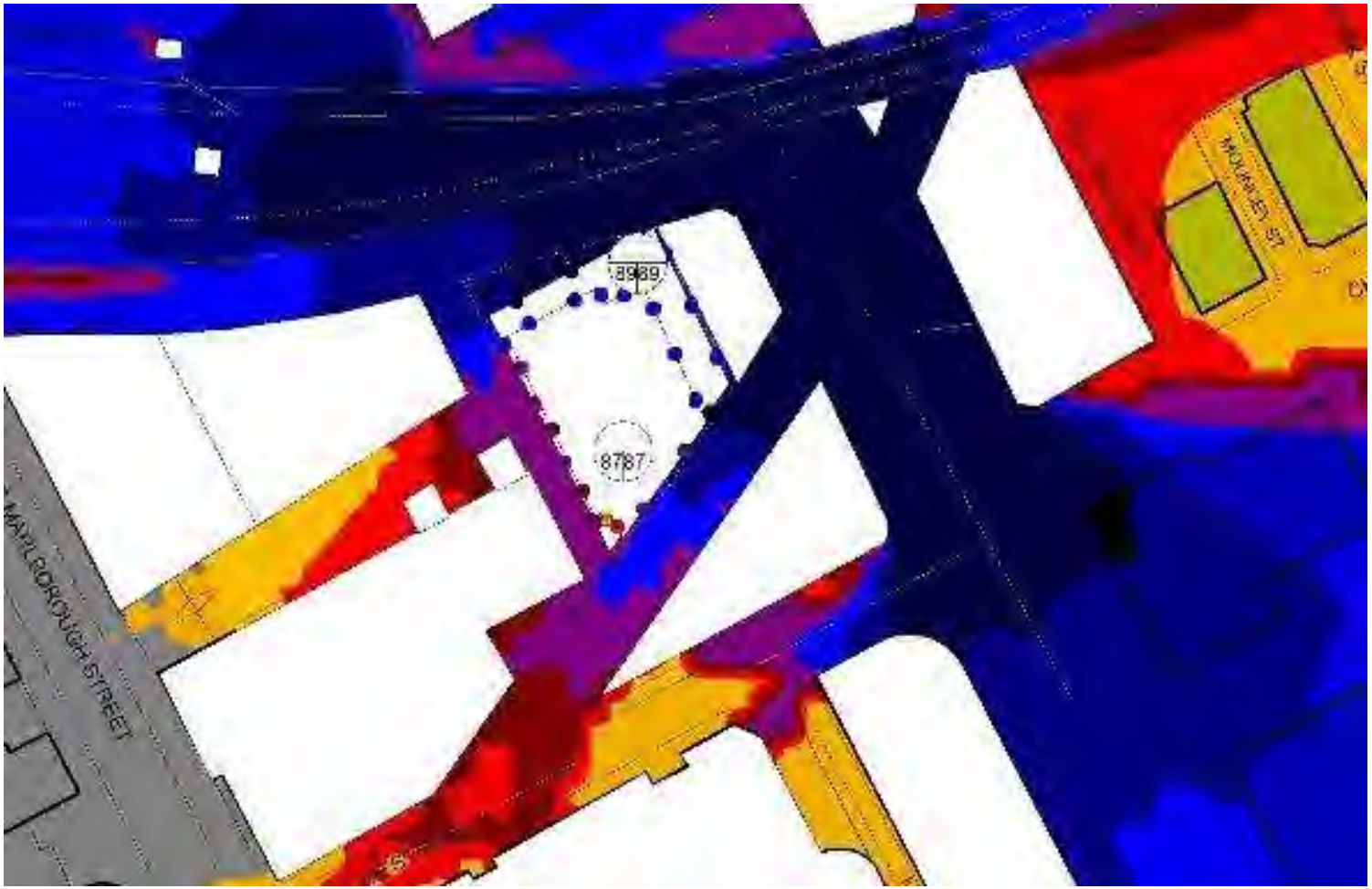


View from north-west



View from south-east

RBA ACOUSTICS





UNITE, 1-5 New Wakefield Street, Manchester

Noise Map 7939/NM5

Typical Night-time $L_{max,f}$ – Grid 4m above ground

20 March 2018

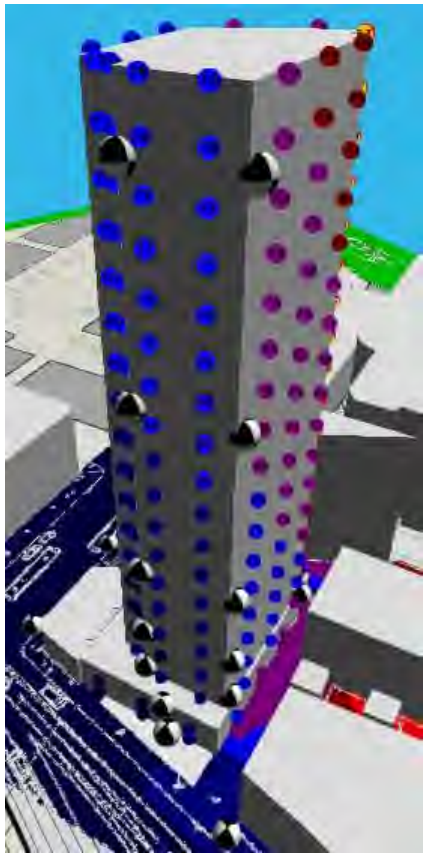
RBA ACOUSTICS

UNITE, 1-5 New Wakefield Street, Manchester

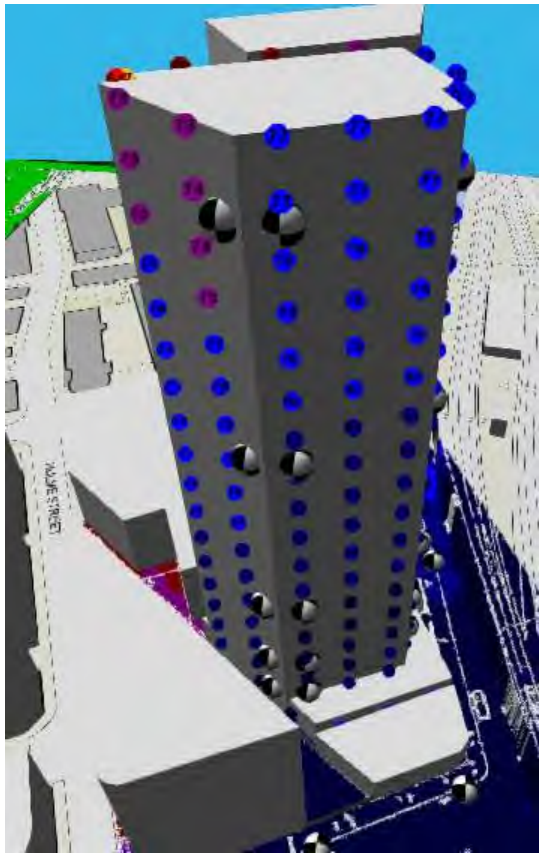
Noise Map 7939/NM6

Typical Night-time $L_{max,f}$

20 March 2018

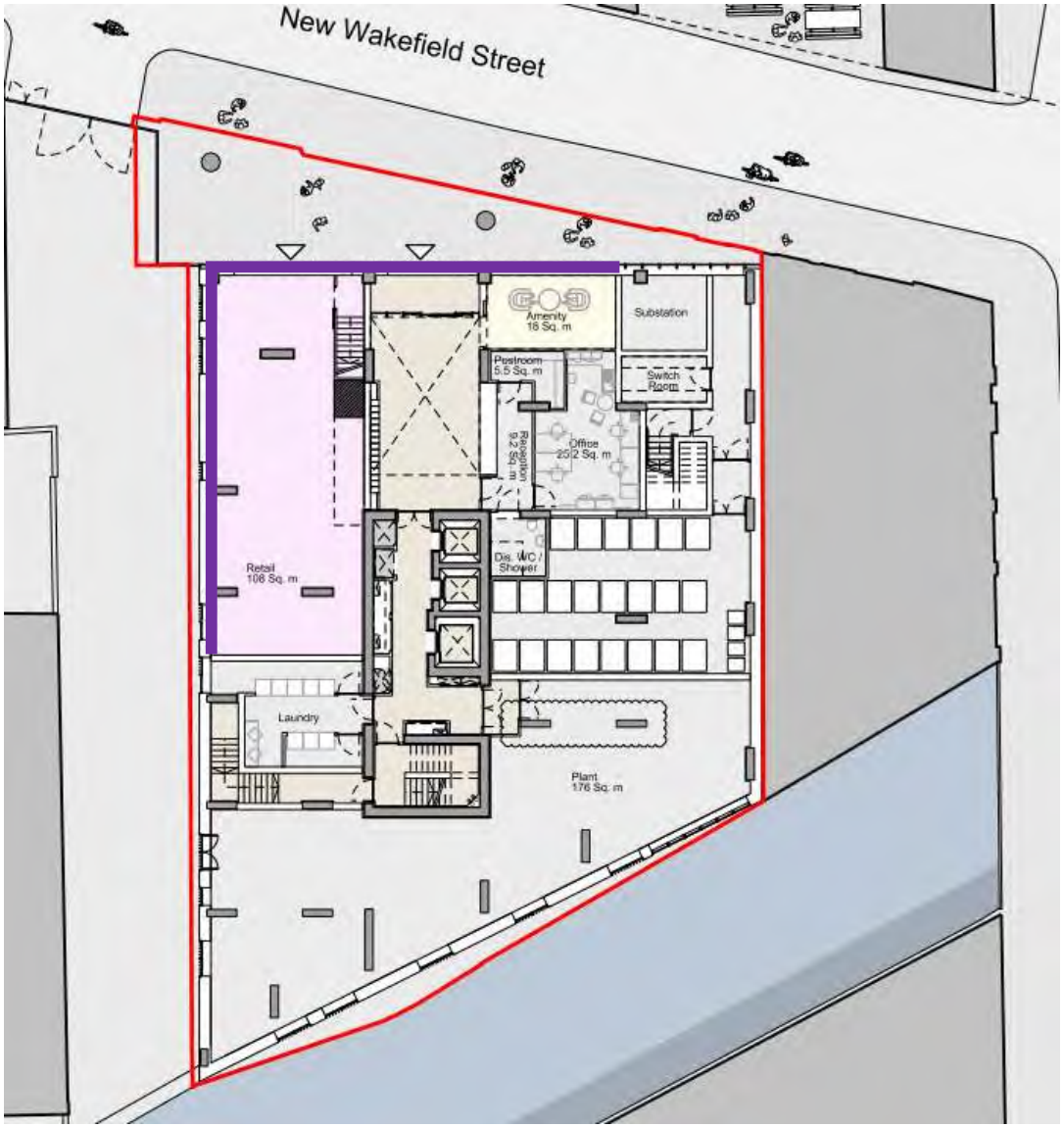


View from north-west



View from south-east

RBA ACOUSTICS



Facade Zone Key:

1
2
3
4
5

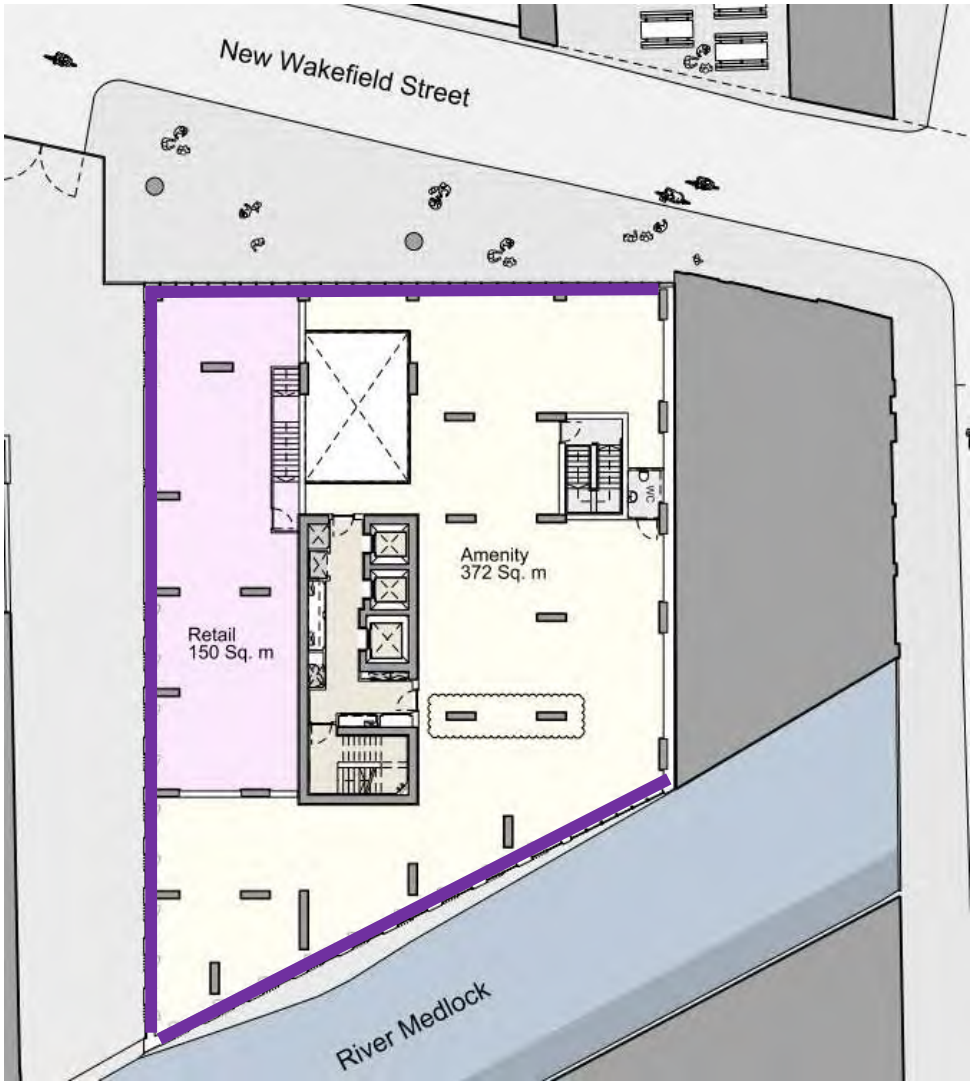
UNITE, 1-5 New Wakefield Street, Manchester

Façade Zoning Plan 7939/FZP0

Level -00

20 March 2018

RBA ACOUSTICS



Facade Zone Key:

1
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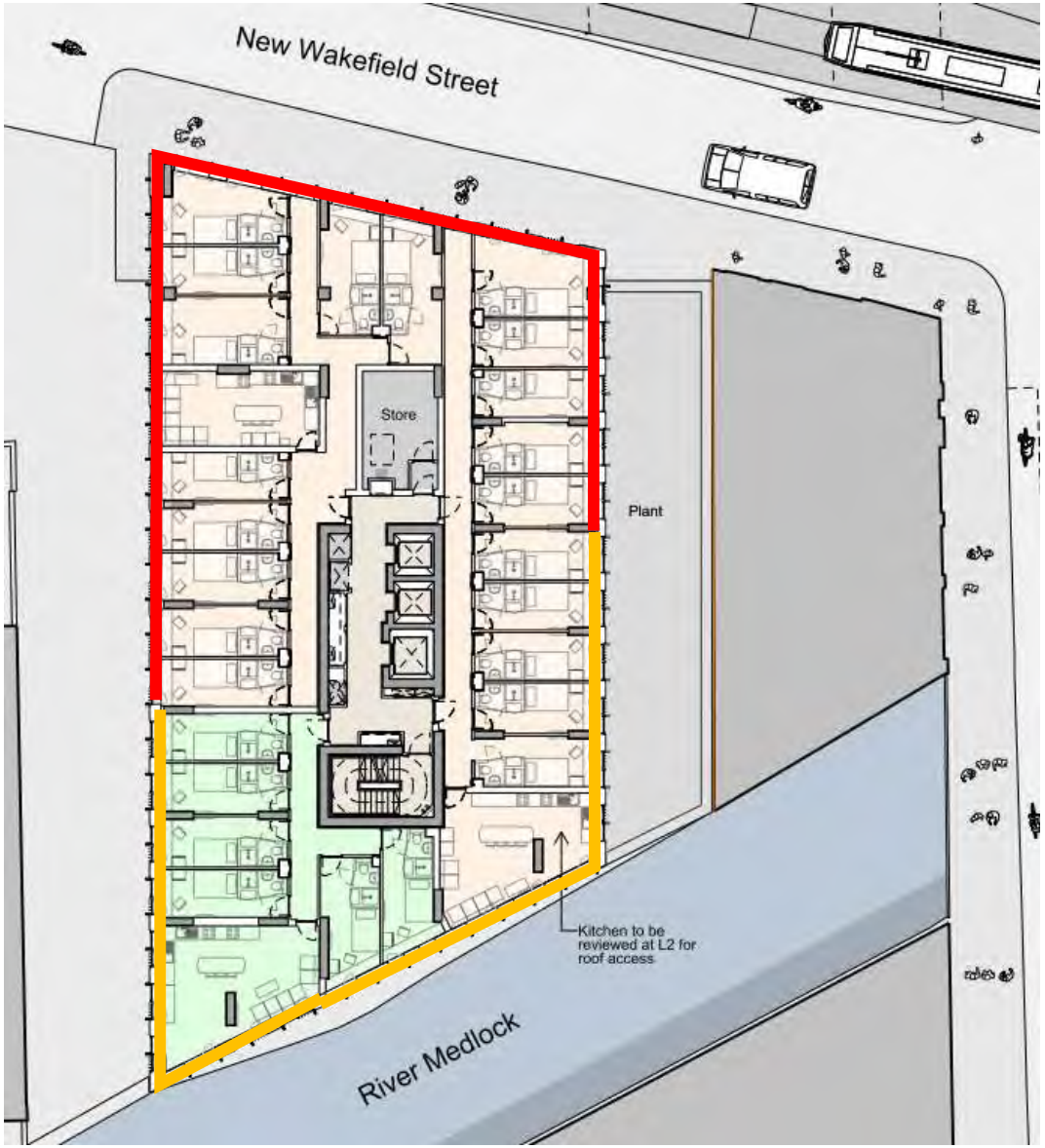
UNITE, 1-5 New Wakefield Street, Manchester

Façade Zoning Plan 7939/FZP1

Level -01

20 March 2018

RBA ACOUSTICS



Facade Zone Key:

1
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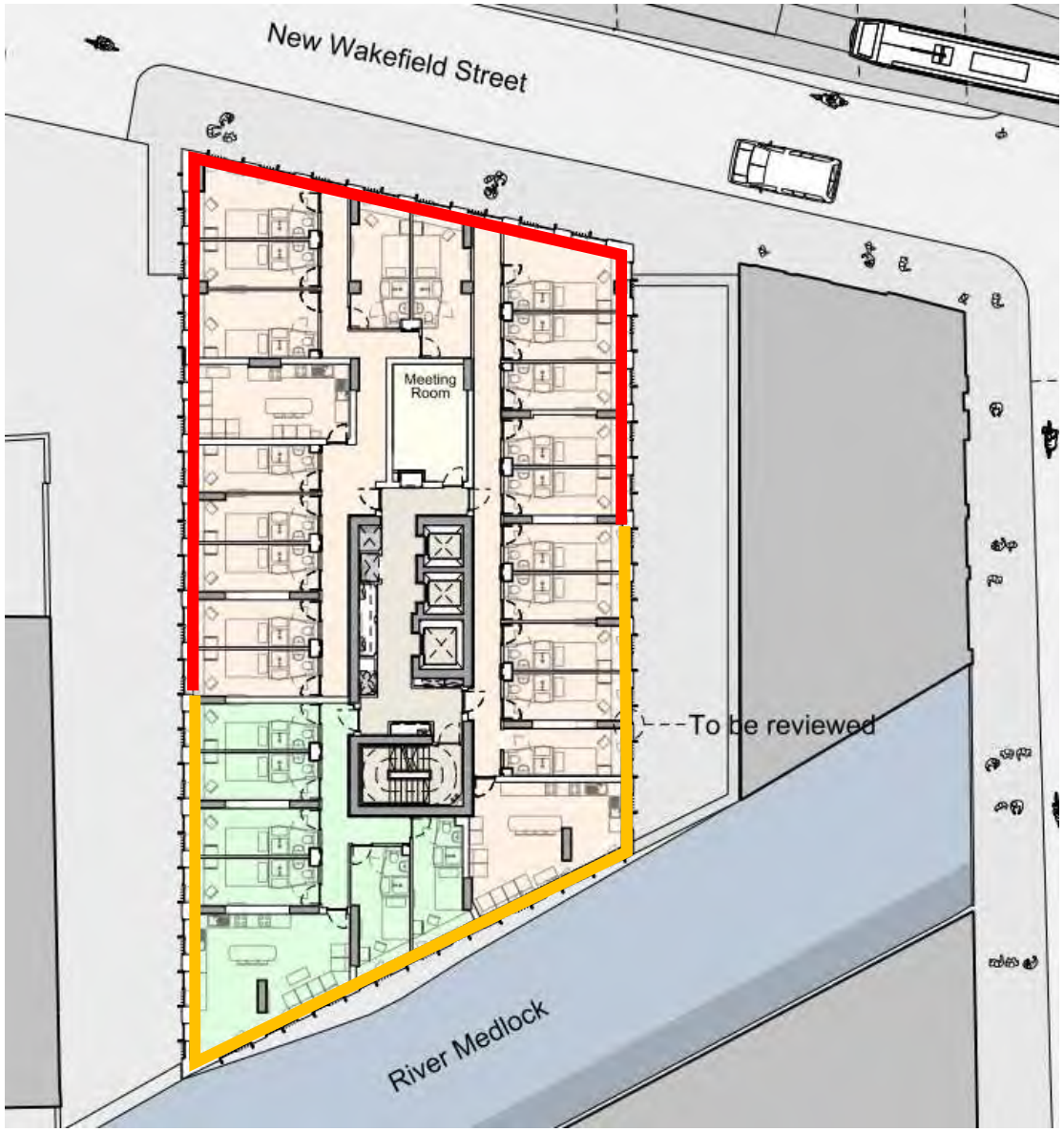
UNITE, 1-5 New Wakefield Street, Manchester

Façade Zoning Plan 7939/FZP2

Level 02-03

20 March 2018

RBA ACOUSTICS



Facade Zone Key:

1
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3
4
5

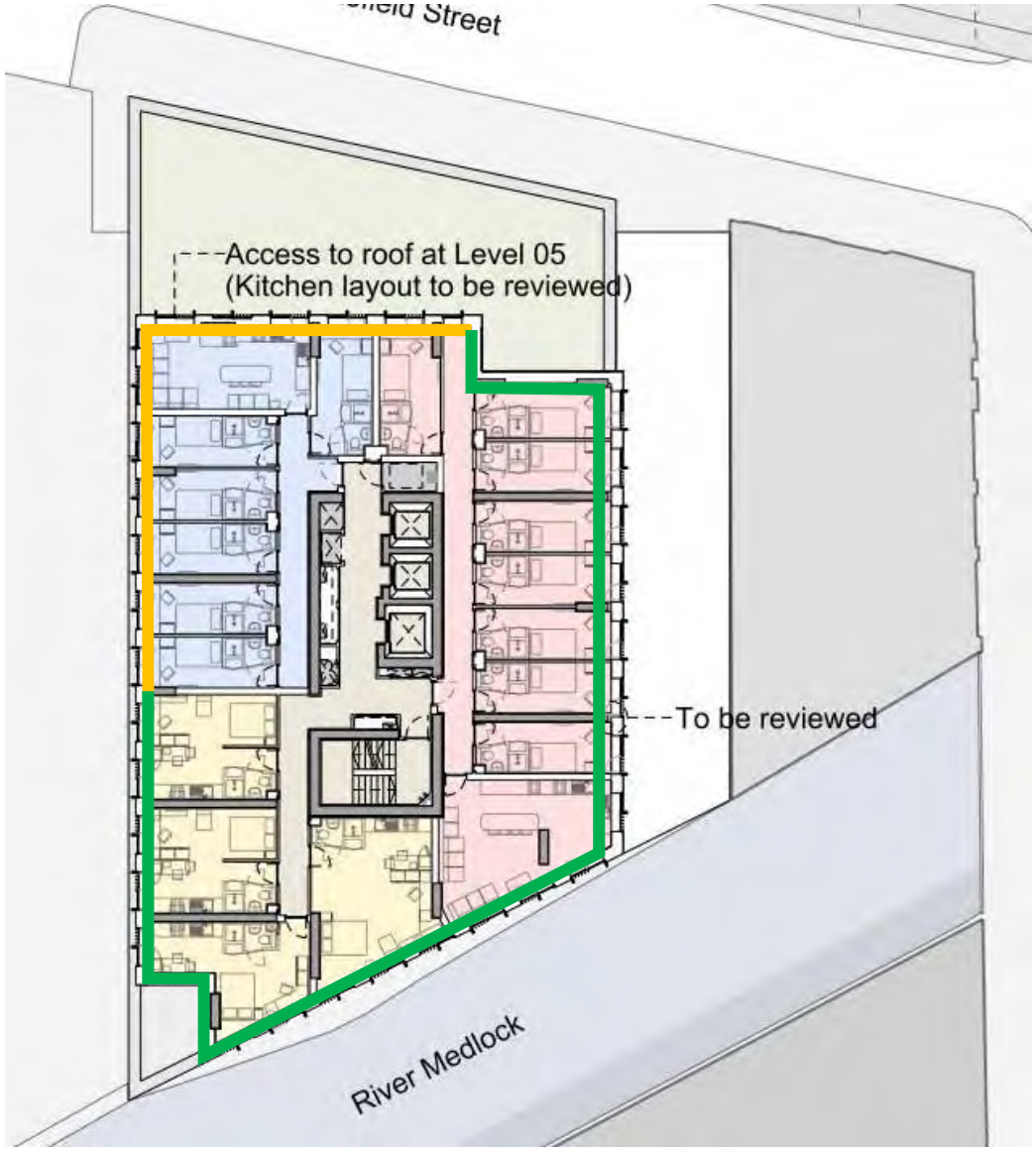
UNITE, 1-5 New Wakefield Street, Manchester

Façade Zoning Plan 7939/FZP3

Level 04

20 March 2018

RBA ACOUSTICS



Facade Zone Key:

1

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5

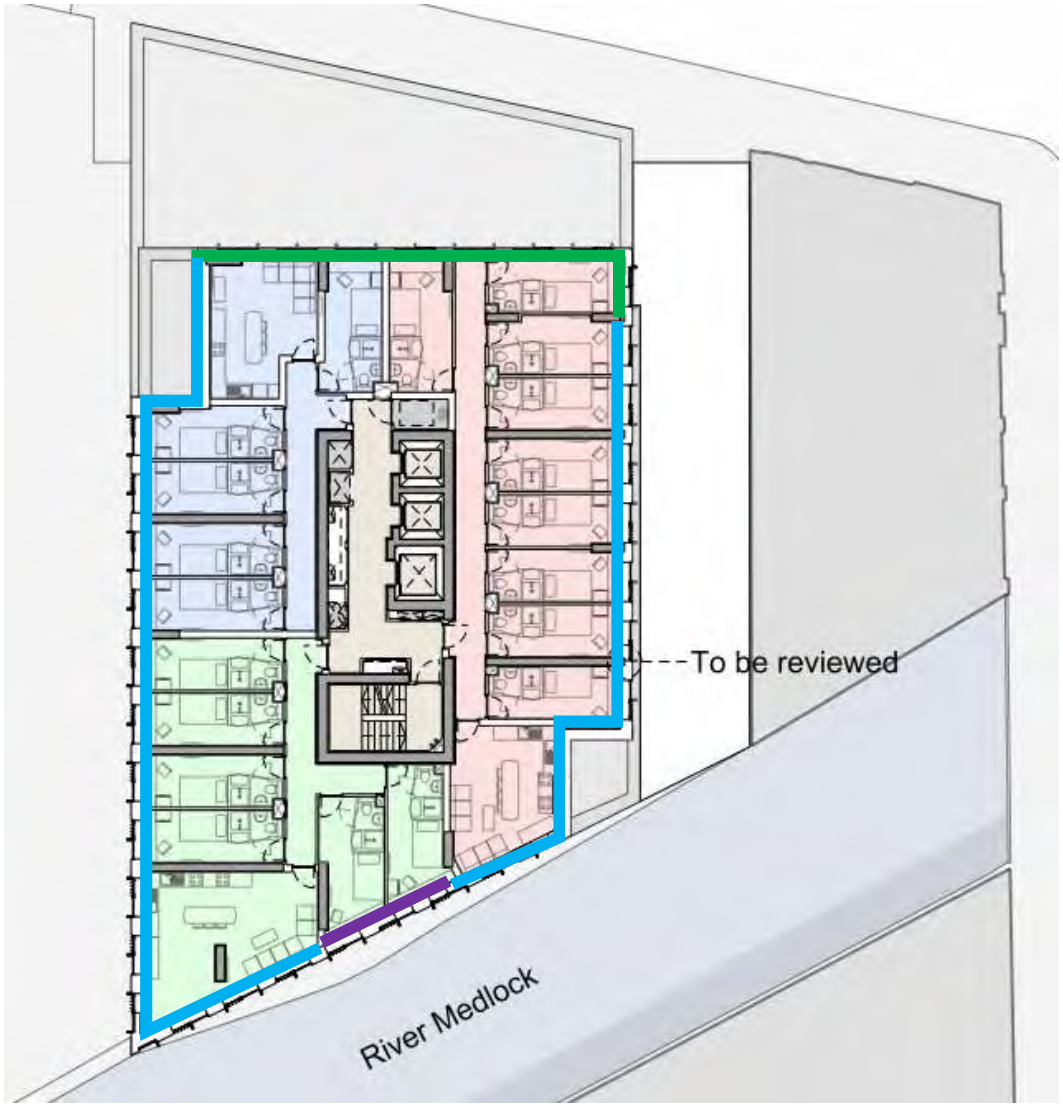
UNITE, 1-5 New Wakefield Street, Manchester

Façade Zoning Plan 7939/FZP4

Level 05-12

20 March 2018

RBA ACOUSTICS



Facade Zone Key:

1

2

3

4

5

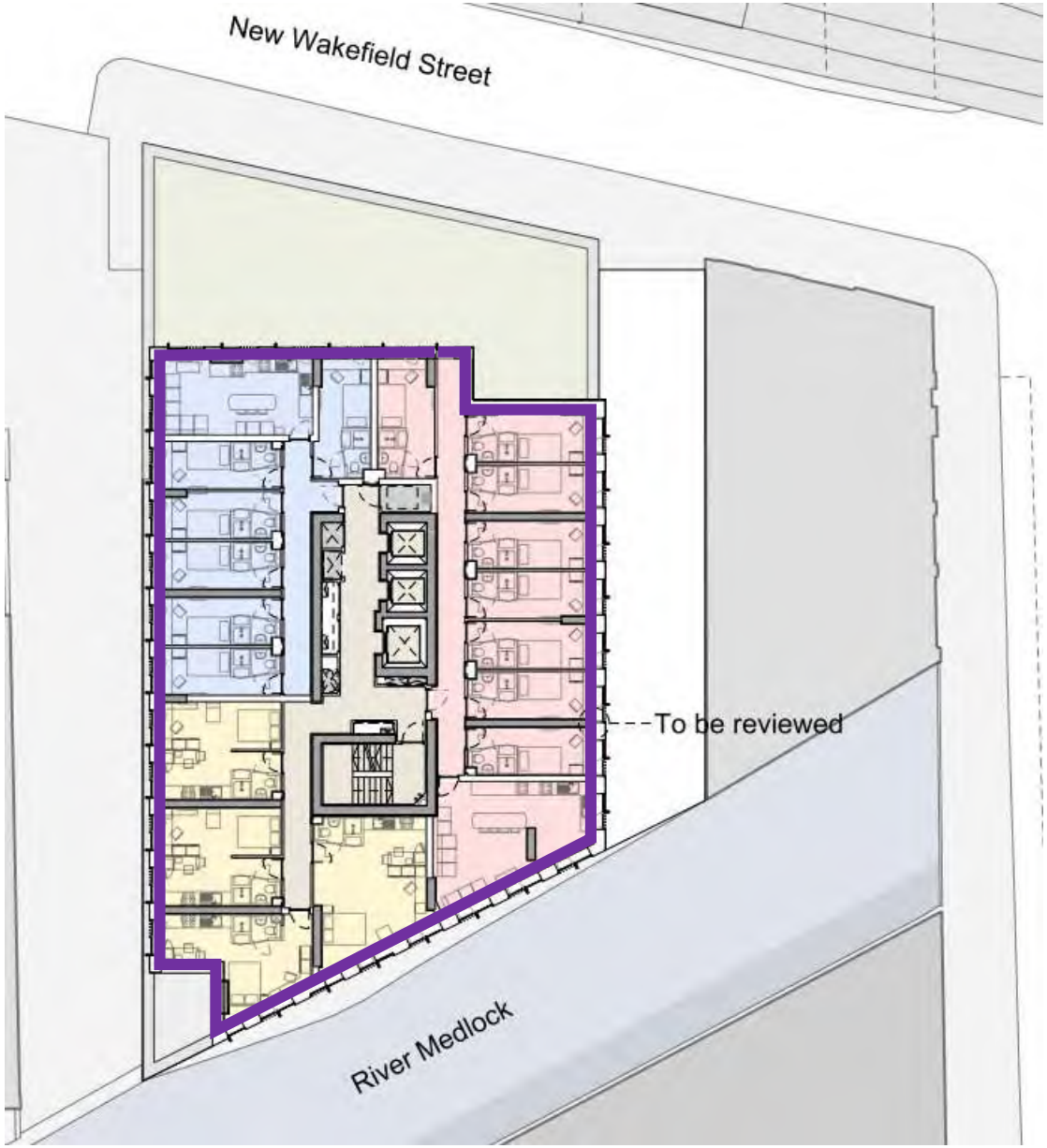
UNITE, 1-5 New Wakefield Street, Manchester

Façade Zoning Plan 7939/FZP5

Level 13-19

20 March 2018

RBA ACOUSTICS



Facade Zone Key:

1
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5

UNITE, 1-5 New Wakefield Street, Manchester

Façade Zoning Plan 7939/FZP6

Level 20-25

20 March 2018

RBA ACOUSTICS



Facade Zone Key:

1
2
3
4
5

UNITE, 1-5 New Wakefield Street, Manchester

Façade Zoning Plan 7939/FZP7

Level 26-31

20 March 2018

RBA ACOUSTICS



Facade Zone Key:

1

2

3

4

5

UNITE, 1-5 New Wakefield Street, Manchester

Façade Zoning Plan 7939/FZP8

Level 32

20 March 2018

RBA ACOUSTICS

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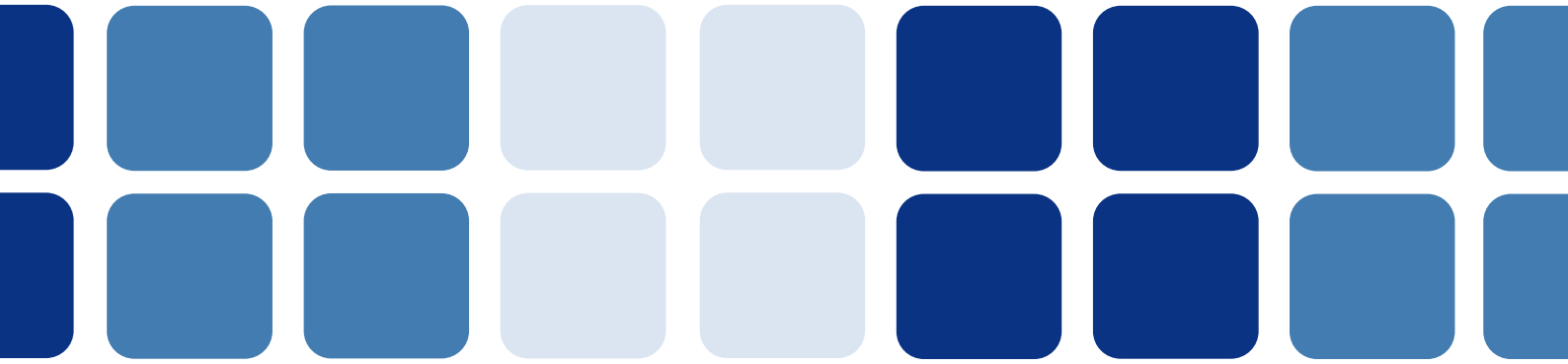
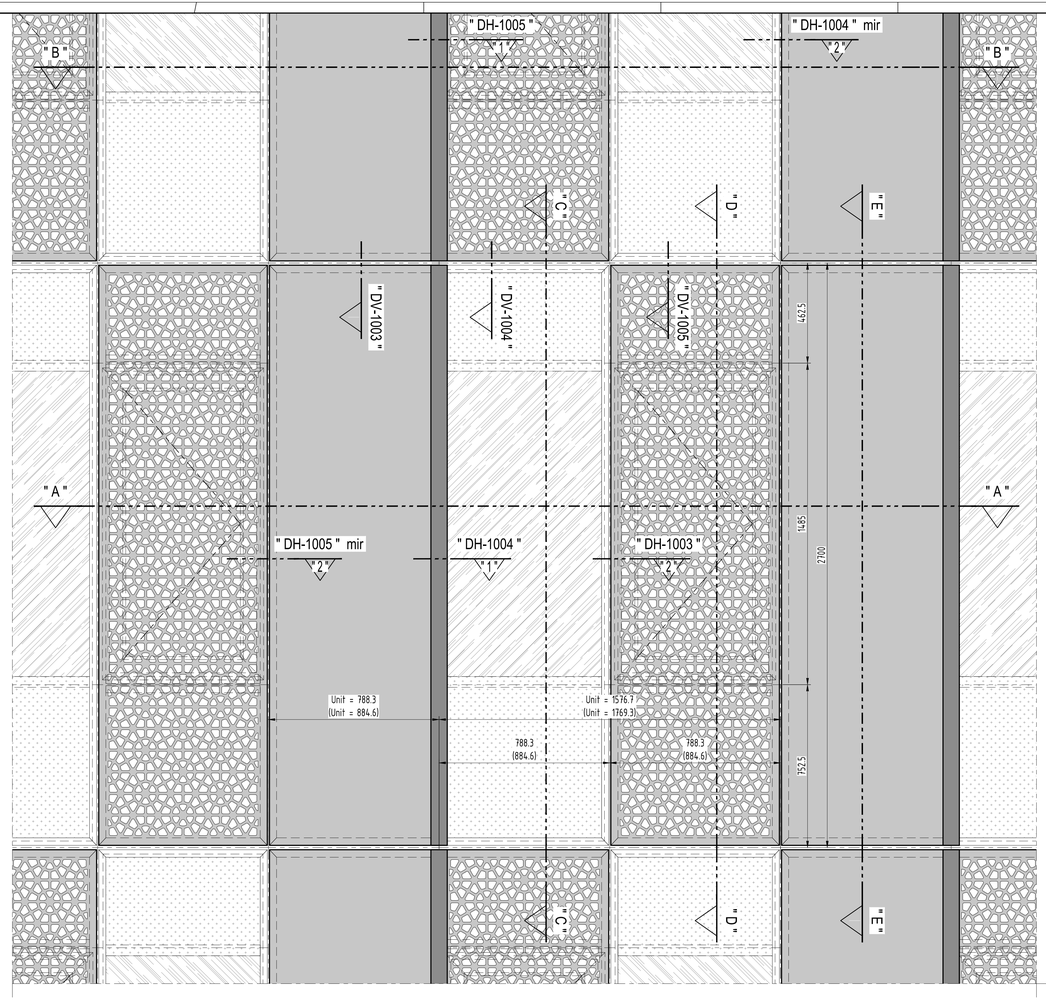
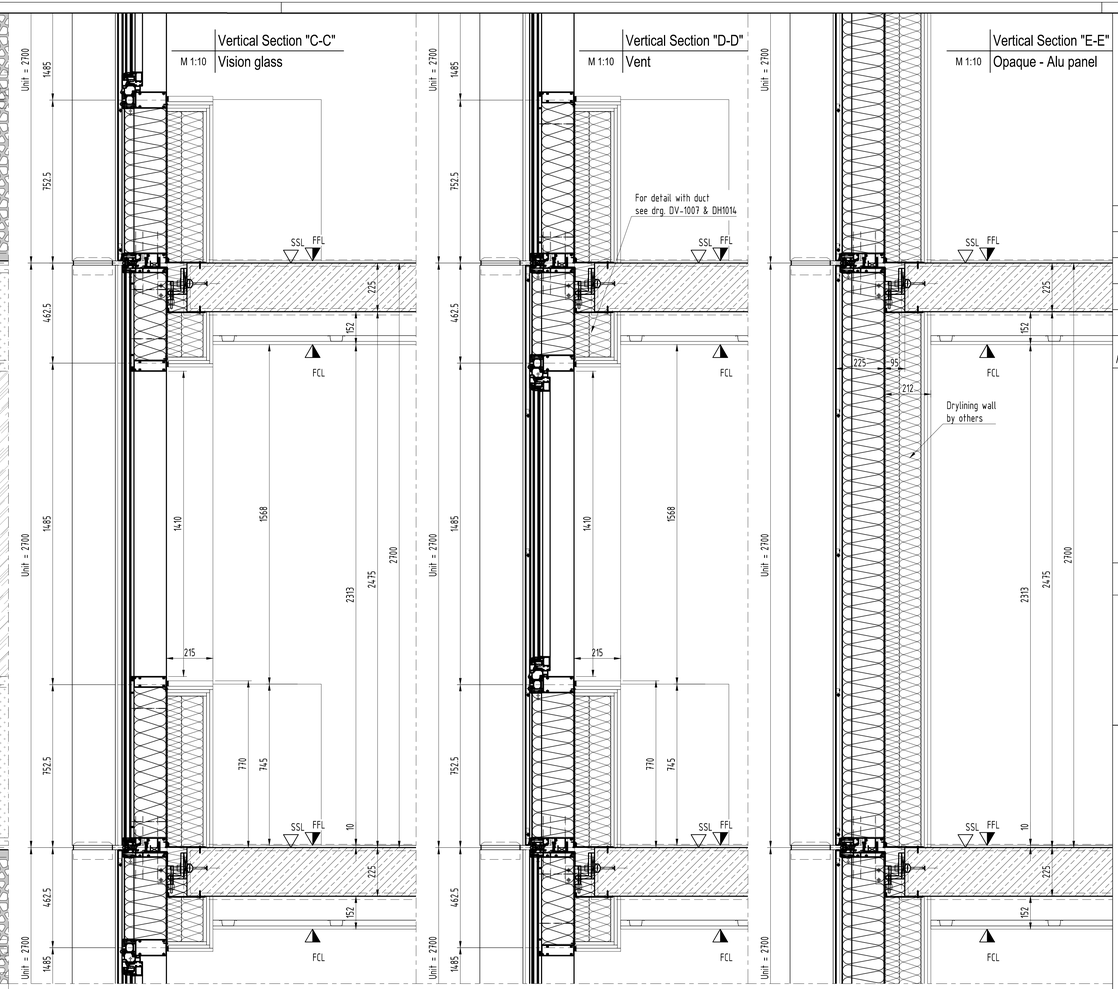
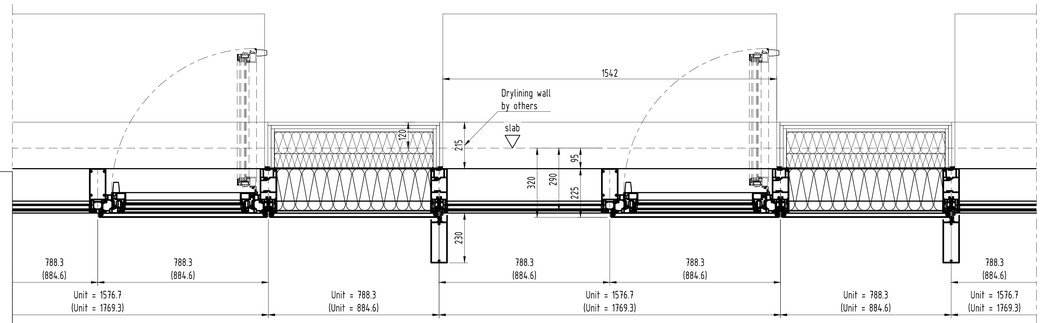
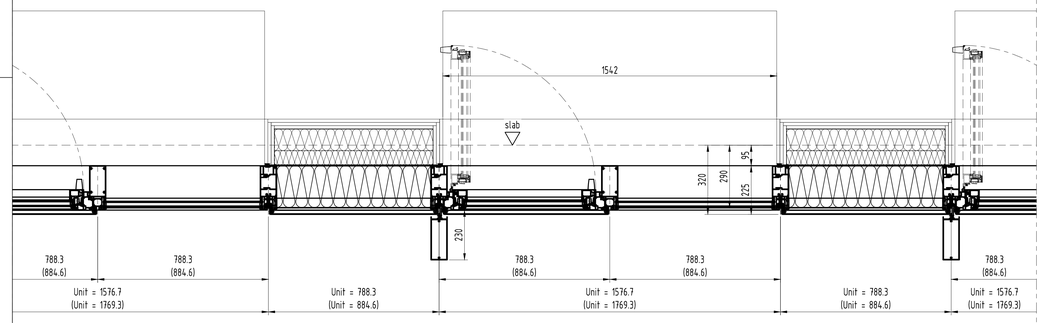








Horizonzal Section "A-A"
M 1:10



Horizonzal Section "B-B"
M 1:10

vision glass
vision glass with frit
alu panel
alu fin

STATUS NACRTA | *DRAWING STATUS*

A ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*

B ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*

C ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

POTPIS *SIGNATURE* | NADNEVAK *DATE*

03	Annotation for Duct added	29.04.2019
02	issued for status update	30.11.2018
01	updated acc. to comments	08.08.2018
INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*

KFK

NARUČITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*

NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*

New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER* **18-0773**

INVESTITOR | *CONTRACTOR*
Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*

Part Elevation
Standard Unit Bedroom
-

VRSTA PROJEKTA *PROJECT TYPE* EWS 01

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER* NWS-KFK- EWS01-XX-DR-EP-1001

INDEX | *REVISION* **03**

CRTAO *DRAWN BY*	EAF/MM		16.05.2018
KONTROLIRAO *CHECKED BY*	-		-
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:10	LIST *SHEET* -

P:\Projects_2018\P18001-NWG-Manchester\03_DETAILING\EWS-EW501-Details_2019NOV.dwg

Glass Type	GL01		30,76 mm	(31 mm)						
Rw	EN 140-3/717-1	- db		Instalation pos.:	Vertical					
Ug	EN 673	1,0 W/m²K			Vision Glazing					
g	EN 410	<=46 ca. %								
Lt	EN 410	75 ca. %								
Lr	EN 410	18 ca. %								
							Edges acc. To DIN 1249-11			
				Description	*Colour*	*K1*	*K2*	*K3*	*K4*
Glass exterior	**Layer**	**VSG/TVG**	**8,76 mm**						
	#1								
Glass 1		TVG	4,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#2								
Interlayer		PVB-Interlayer	0,76 mm		clear				
	#3								
Glass 2		TVG	4,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#4			ClimaGuard 1.0+T					
Spacer 1	**Layer**	**Chromatech Ultra F**	**16,00 mm**						
		Spacer	16,00 mm	Chromatech Ultra F	black				
		Primary sealing		Butyl	black				
		Secondary sealing	d=6,00 mm	Polysulfid	black				
		Gas		90% argon					
Glass interior	**Layer**	**ESG-H**	**6,00 mm**						
	#5								
Glass 3		ESG-H	6,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#6			Local Ceramic Frit RAL 7021					

Edge processing acc. To DIN 1249-11:			
	KG	cut edge	(rezano)
	KGS	bordered edge	(grubo brušeni bridovi)
	KMG	ground edge	(grubo brušeni bridovi+rub)
	KGN	smooth ground edge	(fino brušeni rubovi)
	KPO	polished edge	(polirani rubovi)

Stamp position				**Stamp type**
glass 1 at #1	top / right	b	45 mm	VSG/TVG
		h	30 mm	
glass 3 at #5	top / right	b	45 mm	ESG-H
		h	30 mm	

Glass type	**Description**	**Standard**	**Tolerance**	**Edge processing**
Float	Annealed glass	DIN EN 572	DIN EN 572-8	
TVG	Heat strengthened glass	BS EN 1863-1	DIN EN ISO 12543	
ESG-H	Toughned glass, heat-soak tested	BS EN 14179-1	EN 14179-8	
VSG	Laminated glass made of annealed glass	BS EN 14449	EN 14449-8	
VSG-TVG	Laminated glass made of heat strengthened glass	BS EN 14449 / EN 1863-1	EN 14449-8	
VSG-ESG-H	Laminated glass made of heat-soak tested toughned glass	BS EN 14449 / EN 14179-1	EN 14449-8	

Visible from:	INSIDE
Readable from:	INSIDE

GLASS STAMP TYPES

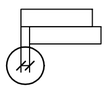
GLASS EXTERIOR	GLASS INTERIOR
	

Dimensional Tolerances	**edge length**	**for d 3 to 6 mm**	**for d 8 to 12 mm**	**for d 15 mm**	**for d 19 + 25 mm**
before any thermal thoughening or heat strengthening	<= 1500 mm	± 1,0	± 1,5	± 2,0	± 2,5
	> 1500 mm	± 1,5	± 2,0	± 2,5	± 3,0

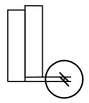
Pane squareness: Not more than 4mm difference in diagonal measurements

Fabrication tolerances:

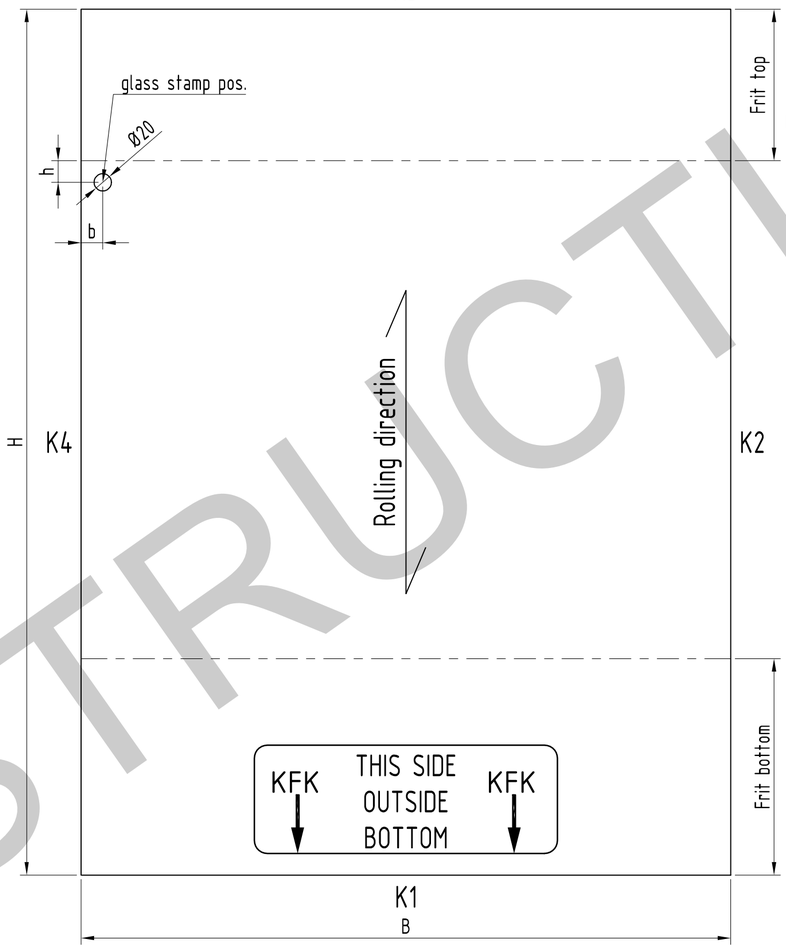
glass shift
Laminated glass: ±1mm
Insulated glass ±1mm

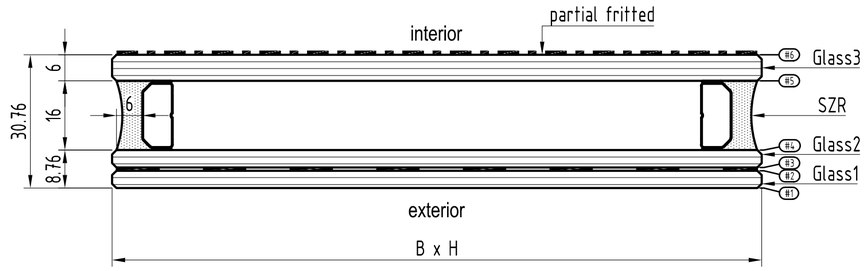


bottom edge
Laminated glass: ±0,5mm
Insulated glass ±0,5mm



Elevation from outside





STATUS NACRTA | *DRAWING STATUS*

A ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
B ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
C ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

POTPIS *SIGNATURE* NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
02	ClimaGuard updated	26.11.2018
01	VSG-Float changed to VSG-TVG	31.10.2018

KFK

NARU ITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*

NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*
New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER* **18-0773**

INVESTITOR | *CONTRACTOR*
Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*
Glass type overview
GL01
Vision Glass

VRSTA PROJEKTA *PROJECT TYPE* EWS 01

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER* NWS-KFK- EWS01-XX-DR-GL-0001
INDEX | *REVISION* **02**

CRTAO *DRAWN BY*	EAF/MM		08.08.2018
KONTROLIRAO *CHECKED BY*	-		-
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:1	LIST *SHEET* -

FOR CONSTRUCTION

P:\Projects_2018\PF18001-NWS-Manchester\03_DETAIL\GLASSTYPES\Glass-types_02.dwg

Glass Type	GL01a		30,00 mm	(30 mm)						
Rw	EN 140-3/717-1		- db		Instalation pos.:	Vertical				
Ug	EN 673		2,7 W/m²K			Vision Glazing				
g	EN 410		<=76 ca. %							
Lt	EN 410		81 ca. %							
Lr	EN 410		15 ca. %							
							Edges acc. To DIN 1249-11			
					Description	*Colour*	*K1*	*K2*	*K3*	*K4*
Glass exterior	**Layer**	**TVG**	**8,00 mm**							
	#1									
Glass 1		TVG	8,00	mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#2									
Spacer 1	**Layer**	**Chromatech Ultra F**	**16,00 mm**							
		Spacer	16,00	mm	Chromatech Ultra F	black				
		Primary sealing			Butyl	black				
		Secondary sealing	d=6,00	mm	Polysulfid	black				
		Gas			90% argon					
Glass interior	**Layer**	**ESG-H**	**6,00 mm**							
	#3									
Glass 2		ESG-H	6,00	mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#4				Ceramic Frit RAL 7021					

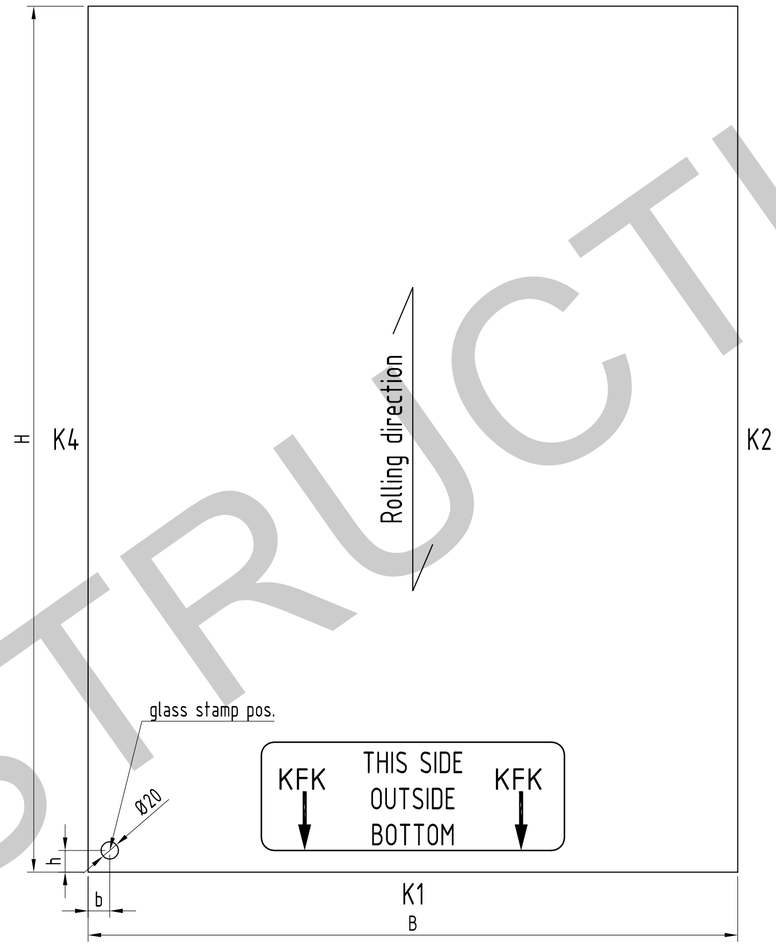
Edge processing acc. To DIN 1249-11:	KG	cut edge	(rezano)
	KGS	bordered edge	(grubo brušeni bridovi)
	KMG	ground edge	(grubo brušeni bridovi+rub)
	KGN	smooth ground edge	(fino brušeni rubovi)
	KPO	polished edge	(polirani rubovi)

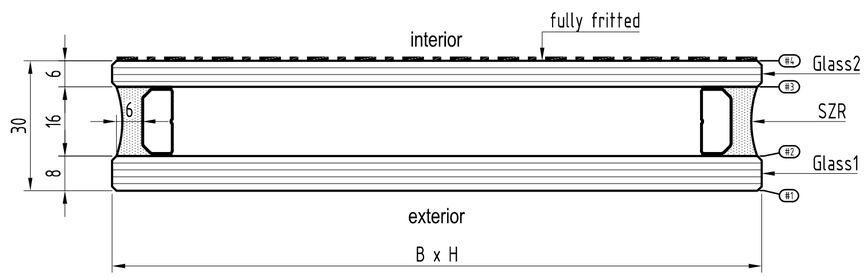
Stamp position				**Stamp type**
glass 1 at #2	bottom / left	b	45 mm	TVG
		h	45 mm	
glass 2 at #3	bottom / left	b	45 mm	ESG-H
		h	45 mm	

Glass type	**Description**	**Standard**	**Tolerance**	**Edge processing**
Float	Annealed glass	DIN EN 572	DIN EN 572-8	
TVG	Heat strengthened glass	BS EN 1863-1	DIN EN ISO 12543	
ESG-H	Toughned glass, heat-soak tested	BS EN 14179-1	EN 14179-8	
VSG	Laminated glass made of annealed glass	BS EN 14449	EN 14449-8	
VSG-TVG	Laminated glass made of heat strengthened glass	BS EN 14449 / EN 1863-1	EN 14449-8	
VSG-ESG-H	Laminated glass made of heat-soak tested toughned glass	BS EN 14449 / EN 14179-1	EN 14449-8	

Visible from:	OUTSIDE
Readable from:	OUTSIDE

Elevation from outside





GLASS STAMP TYPES

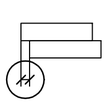
GLASS EXTERIOR	GLASS INTERIOR
BS EN 1863-1 TVG KFK	BS EN 14179-1 ESG-H KFK

Dimensional Tolerances	**edge length**	**for d 3 to 6 mm**	**for d 8 to 12 mm**	**for d 15 mm**	**for d 19 + 25 mm**
before any thermal thoughening or heat strengthening	<= 1500 mm	± 1,0	± 1,5	± 2,0	± 2,5
	> 1500 mm	± 1,5	± 2,0	± 2,5	± 3,0

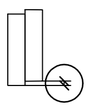
Pane squareness: Not more than 4mm difference in diagonal measurements

Fabrication tolerances:

glass shift
Laminated glass: ±1mm
Insulated glass ±1mm



bottom edge
Laminated glass: ±0,5mm
Insulated glass ±0,5mm



FOR CONSTRUCTION

STATUS NACRTA | *DRAWING STATUS*

A ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
B ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
C ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

POTPIS *SIGNATURE* | NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
02	Glass stamp layer changed	28.01.2019
01	Glass build up changed	31.10.2018

KFK

NARU ITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*

NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*
New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER*: **18-0773**

INVESTITOR | *CONTRACTOR*: Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*
Glass type overview
GL01a
Vision Glass fritted

VRSTA PROJEKTA *PROJECT TYPE*: EWS 01

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER*			INDEX | *REVISION*
NWS-KFK- EWS01-XX-DR-GL-0001a			**02**
CRTAO *DRAWN BY*	EAF/MM		08.08.2018
KONTROLIRAO *CHECKED BY*	-		-
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:1	LIST *SHEET* -

P:\Projects_2018\PF18001-NWS-Manchester\03_DETAIL\GLASSTYPES\Glass-types_02.dwg

Glass Type	GL02		30,76 mm	(31 mm)						
Rw	EN 140-3/717-1	- db			Instalation pos.:	Vertical				
Ug	EN 673	1,0 W/m²K				Vision Glazing				
g	EN 410	<=46 ca. %				Vent				
Lt	EN 410	75 ca. %								
Lr	EN 410	18 ca. %					Edges acc. To DIN 1249-11			
					Description	*Colour*	*K1*	*K2*	*K3*	*K4*
Glass exterior	**Layer**	**Float**	**6,00 mm**							
	#1									
Glass 1		Float	6,00	mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#2				ClimaGuard 1.0+					
Spacer 1	**Layer**	**Chromatech Ultra F**	**16,00 mm**							
		Spacer	16,00	mm	Chromatech Ultra F	black				
		Primary sealing			Butyl	black				
		Secondary sealing	d=6,00	mm	Polysulfid	black				
		Gas			90% argon					
Glass interior	**Layer**	**VSG**	**8,76 mm**							
	#3									
Glass 2		Float	4,00	mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#4									
Interlayer		PVB-Interlayer	0,76	mm		clear				
	#5									
Glass 3		Float	4,00	mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#6									

Edge processing acc. To DIN 1249-11:			
	KG	cut edge	(rezano)
	KGS	bordered edge	(grubo brušeni bridovi)
	KMG	ground edge	(grubo brušeni bridovi+rub)
	KGN	smooth ground edge	(fino brušeni rubovi)
	KPO	polished edge	(polirani rubovi)

Stamp position				**Stamp type**
glass 2 at #3	top / right	b	45 mm	VSG
		h	45 mm	

Glass type	**Description**	**Standard**	**Tolerance**	**Edge processing**
Float	Annealed glass	DIN EN 572	DIN EN 572-8	
TVG	Heat strengthened glass	BS EN 1863-1	DIN EN ISO 12543	
ESG-H	Toughned glass, heat-soak tested	BS EN 14179-1	EN 14179-8	
VSG	Laminated glass made of annealed glass	BS EN 14449	EN 14449-8	
VSG-TVG	Laminated glass made of heat strengthened glass	BS EN 14449 / EN 1863-1	EN 14449-8	
VSG-ESG-H	Laminated glass made of heat-soak tested toughned glass	BS EN 14449 / EN 14179-1	EN 14449-8	

Visible from:	INSIDE
Readable from:	INSIDE

GLASS STAMP TYPES

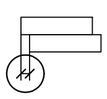
	BS EN 14449 VSG KFK
GLASS EXTERIOR	GLASS INTERIOR

Dimensional Tolerances	**edge length**	**for d 3 to 6 mm**	**for d 8 to 12 mm**	**for d 15 mm**	**for d 19 + 25 mm**
before any thermal thoughening or heat strengthening	<= 1500 mm	± 1,0	± 1,5	± 2,0	± 2,5
	> 1500 mm	± 1,5	± 2,0	± 2,5	± 3,0

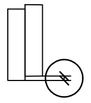
Pane squareness: Not more than 4mm difference in diagonal measurements

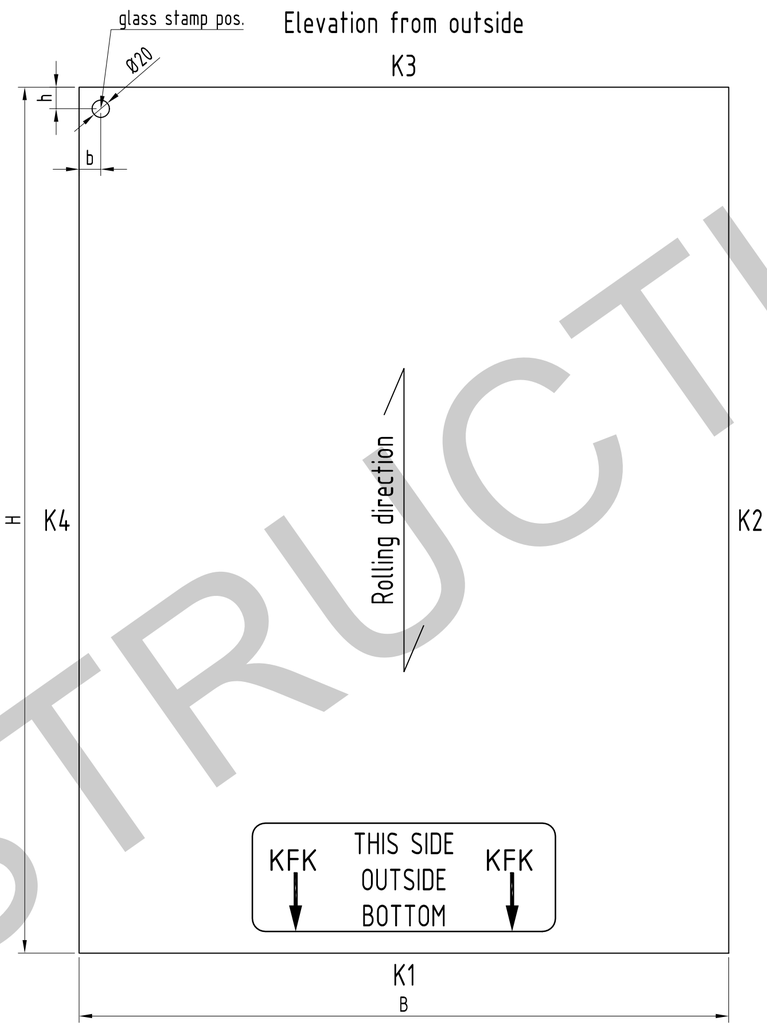
Fabrication tolerances:

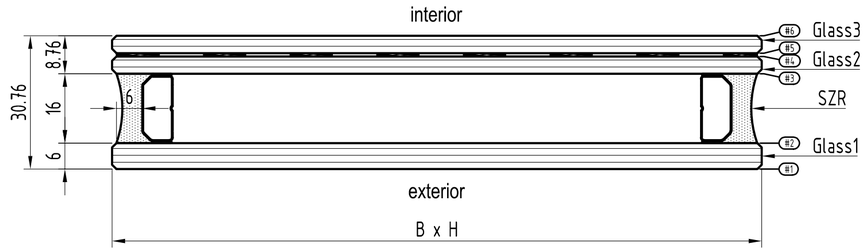
glass shift
Laminated glass: ±1mm
Insulated glass ±1mm



bottom edge
Laminated glass: ±0,5mm
Insulated glass ±0,5mm







STATUS NACRTA | *DRAWING STATUS*

A ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*

B ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*

C ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

POTPIS *SIGNATURE* | NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
01	Glass stamp layer changed	29.01.2019

KFK

NARU ITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*

NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*

New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER*: **18-0773**

INVESTITOR | *CONTRACTOR*: Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*

Glass type overview
GL02
Vision Glass Vent

VRSTA PROJEKTA *PROJECT TYPE*: EWS 01

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER*: NWS-KFK- EWS01-XX-DR-GL-0002

INDEX | *REVISION*: **01**

CRTAO *DRAWN BY*	EAF/MM		08.08.2018
KONTROLIRAO *CHECKED BY*	-		-
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:1	LIST *SHEET* -

FOR CONSTRUCTION

P:\Projects_2018\PF18001-NWS-Manchester\03_DETAIL\GLASSTYPES\Glass-types_02.dwg

Glass Type	GL03		30,76 mm	(31 mm)						
Rw	EN 140-3/717-1	>=42 db		Instalation pos.:	Vertical					
Ug	EN 673	1,0 W/m²K			Vision Glazing					
g	EN 410	<=46 ca. %								
Lt	EN 410	75 ca. %								
Lr	EN 410	18 ca. %								
							Edges acc. To DIN 1249-11			
				Description	*Colour*	*K1*	*K2*	*K3*	*K4*
Glass exterior	**Layer**	**VSG/TVG**	**8,76 mm**						
	#1								
Glass 1		TVG	4,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#2								
Interlayer		PVB-Interlayer	0,76 mm	Sound reduction	clear				
	#3								
Glass 2		TVG	4,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#4			ClimaGuard 1.0+T					
Spacer 1	**Layer**	**Chromatech Ultra F**	**16,00 mm**						
		Spacer	16,00 mm	Chromatech Ultra F	black				
		Primary sealing		Butyl	black				
		Secondary sealing	d=6,00 mm	Polysulfid	black				
		Gas		90% argon					
Glass interior	**Layer**	**ESG-H**	**6,00 mm**						
	#5								
Glass 3		ESG-H	6,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#6			Local Ceramic Frit RAL 7021					

Edge processing acc. To DIN 1249-11:			
	KG	cut edge	(rezano)
	KGS	bordered edge	(grubo brušeni bridovi)
	KMG	ground edge	(grubo brušeni bridovi+rub)
	KGN	smooth ground edge	(fino brušeni rubovi)
	KPO	polished edge	(polirani rubovi)

Stamp position				**Stamp type**
glass 1 at #1	top / right	b	45 mm	VSG/TVG
		h	30 mm	
glass 3 at #5	top / right	b	45 mm	ESG-H
		h	30 mm	

Glass type	**Description**	**Standard**	**Tolerance**	**Edge processing**
Float	Annealed glass	DIN EN 572	DIN EN 572-8	
TVG	Heat strengthened glass	BS EN 1863-1	DIN EN ISO 12543	
ESG-H	Toughned glass, heat-soak tested	BS EN 14179-1	EN 14179-8	
VSG	Laminated glass made of annealed glass	BS EN 14449	EN 14449-8	
VSG-TVG	Laminated glass made of heat strengthened glass	BS EN 14449 / EN 1863-1	EN 14449-8	
VSG-ESG-H	Laminated glass made of heat-soak tested toughned glass	BS EN 14449 / EN 14179-1	EN 14449-8	

Visible from:	INSIDE
Readable from:	INSIDE

GLASS STAMP TYPES

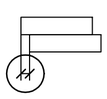
GLASS EXTERIOR	GLASS INTERIOR
BS EN 14449/EN 1863-1 VSG TVG KFK	BS EN 14179-1 ESG-H KFK 2 o

Dimensional Tolerances	**edge length**	**for d 3 to 6 mm**	**for d 8 to 12 mm**	**for d 15 mm**	**for d 19 + 25 mm**
before any thermal thoughening or heat strengthening	<= 1500 mm	± 1,0	± 1,5	± 2,0	± 2,5
	> 1500 mm	± 1,5	± 2,0	± 2,5	± 3,0

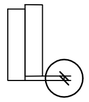
Pane squareness: Not more than 4mm difference in diagonal measurements

Fabrication tolerances:

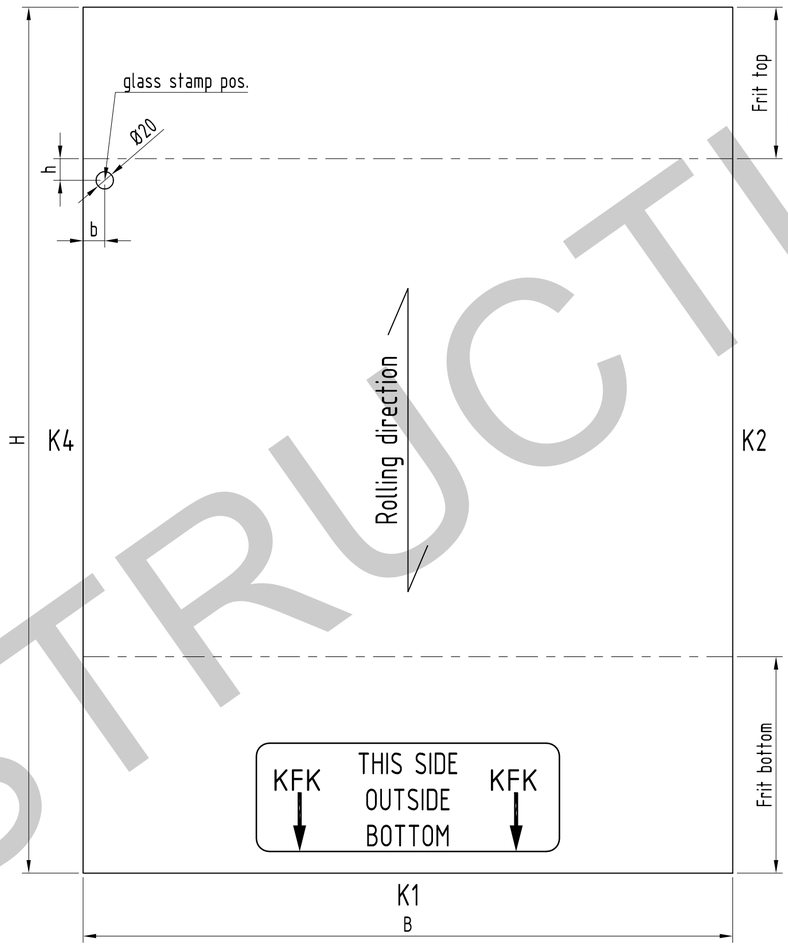
glass shift
Laminated glass: ±1mm
Insulated glass ±1mm

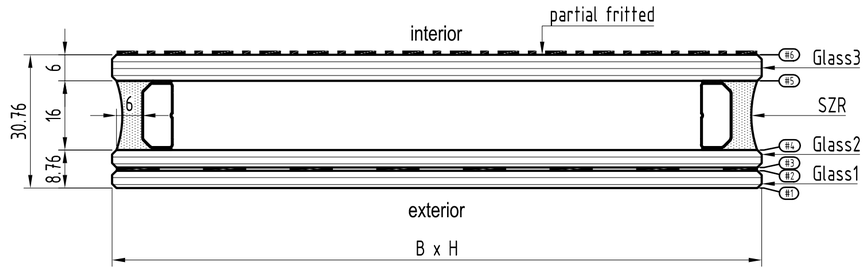


bottom edge
Laminated glass: ±0,5mm
Insulated glass ±0,5mm



Elevation from outside





STATUS NACRTA | *DRAWING STATUS*

A ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
B ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
C ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

POTPIS *SIGNATURE* NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
02	ClimaGuard updated	26.11.2018
01	VSG-Float changed to VSG-TVG	31.10.2018

KFK

NARU ITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*

NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*
New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER* **18-0773**

INVESTITOR | *CONTRACTOR*
Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*
Glass type overview
GL03
Vision Glass

VRSTA PROJEKTA *PROJECT TYPE* EWS 01

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER* NWS-KFK- EWS01-XX-DR-GL-0003
INDEX | *REVISION* **02**

CRTAO *DRAWN BY*	EAF/MM		08.08.2018
KONTROLIRAO *CHECKED BY*	-		-
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:1	LIST *SHEET* -

FOR CONSTRUCTION

P:\Projects_2018\PF18001-NWS-Manchester\03_DETAIL\GLASSTYPES\Glass-types_02.dwg

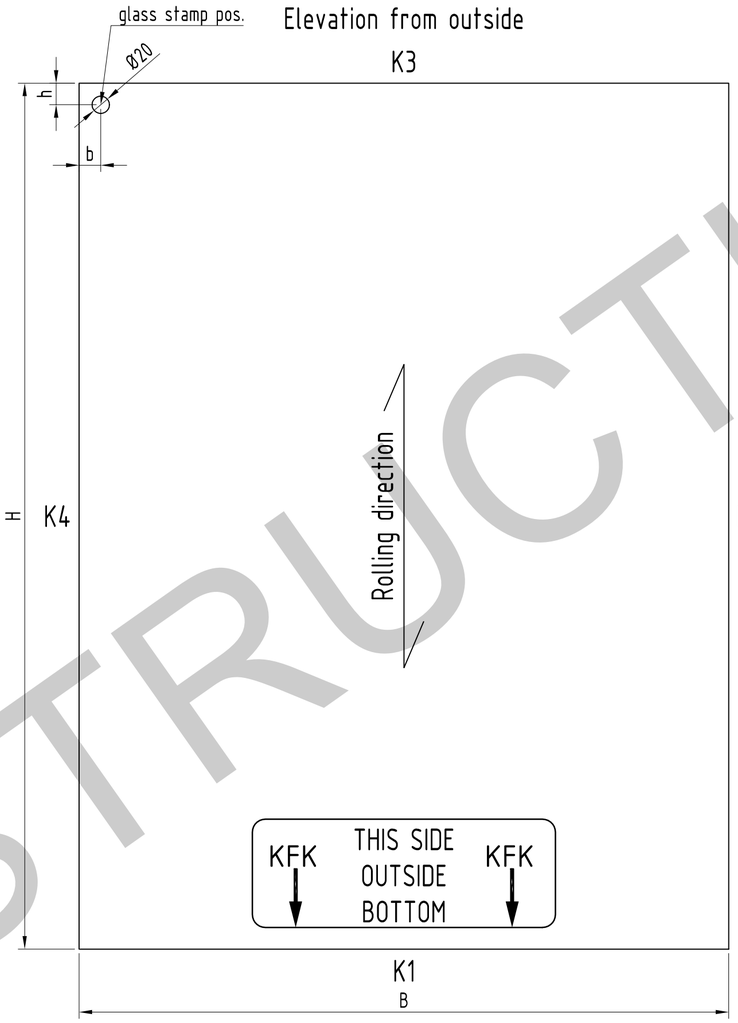
Glass Type	GL04		30,76 mm	(31 mm)						
Rw	EN 140-3/717-1	>=42 db		Instalation pos.:	Vertical					
Ug	EN 673	1,0 W/m²K			Vision Glazing					
g	EN 410	<=46 ca. %			Vent					
Lt	EN 410	75 ca. %								
Lr	EN 410	18 ca. %					Edges acc. To DIN 1249-11			
				Description	*Colour*	*K1*	*K2*	*K3*	*K4*
Glass exterior	**Layer**	**Float**	**6,00 mm**						
	#1								
Glass 1		Float	6,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#2			ClimaGuard 1.0+					
Spacer 1	**Layer**	**Chromatech Ultra F**	**16,00 mm**						
		Spacer	16,00 mm	Chromatech Ultra F	black				
		Primary sealing		Butyl	black				
		Secondary sealing	d=6,00 mm	Polysulfid	black				
		Gas		90% argon					
Glass interior	**Layer**	**VSG**	**8,76 mm**						
	#3								
Glass 2		Float	4,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#4								
Interlayer		PVB-Interlayer	0,76 mm	Sound reduction	clear				
	#5								
Glass 3		Float	4,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#6								

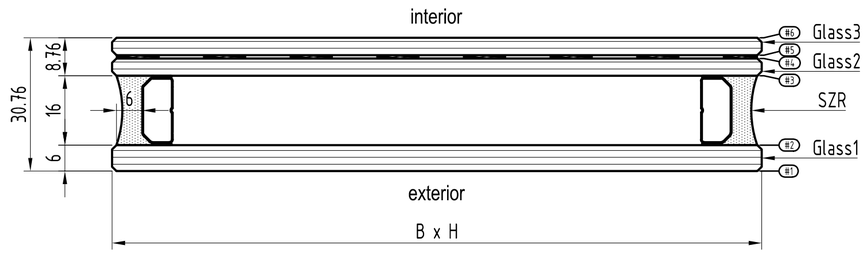
Edge processing acc. To DIN 1249-11:			
	KG	cut edge	(rezano)
	KGS	bordered edge	(grubo brušeni bridovi)
	KMG	ground edge	(grubo brušeni bridovi+rub)
	KGN	smooth ground edge	(fino brušeni rubovi)
	KPO	polished edge	(polirani rubovi)

Stamp position				**Stamp type**
glass 2 at #3	top / right	b	45 mm	VSG
		h	45 mm	

Glass type	**Description**	**Standard**	**Tolerance**	**Edge processing**
Float	Annealed glass	DIN EN 572	DIN EN 572-8	
TVG	Heat strengthened glass	BS EN 1863-1	DIN EN ISO 12543	
ESG-H	Toughned glass, heat-soak tested	BS EN 14179-1	EN 14179-8	
VSG	Laminated glass made of annealed glass	BS EN 14449	EN 14449-8	
VSG-TVG	Laminated glass made of heat strengthened glass	BS EN 14449 / EN 1863-1	EN 14449-8	
VSG-ESG-H	Laminated glass made of heat-soak tested toughned glass	BS EN 14449 / EN 14179-1	EN 14449-8	

Visible from:	INSIDE
Readable from:	INSIDE





GLASS STAMP TYPES

	BS EN 14449 VSG KFK
GLASS EXTERIOR	GLASS INTERIOR

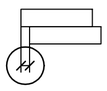
Dimensional Tolerances

	edge length	for d 3 to 6 mm	for d 8 to 12 mm	for d 15 mm	for d 19 + 25 mm
before any thermal thoughening or heat strengthening	<= 1500 mm	± 1,0	± 1,5	± 2,0	± 2,5
	> 1500 mm	± 1,5	± 2,0	± 2,5	± 3,0

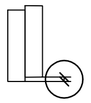
Pane squareness: Not more than 4mm difference in diagonal measurements

Fabrication tolerances:

glass shift
Laminated glass: ±1mm
Insulated glass ±1mm



bottom edge
Laminated glass: ±0,5mm
Insulated glass ±0,5mm



FOR CONSTRUCTION

STATUS NACRTA | *DRAWING STATUS*

A ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
B ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
C ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

POTPIS *SIGNATURE* | NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
01	Glass stamp layer changed	29.01.2019

KFK

NARU ITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*

NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*
New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER*: **18-0773**

INVESTITOR | *CONTRACTOR*: Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*
Glass type overview
GL04
Vision Glass Vent

VRSTA PROJEKTA *PROJECT TYPE*: EWS 01

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER*: NWS-KFK- EWS01-XX-DR-GL-0004
INDEX | *REVISION*: **01**

CRTAO *DRAWN BY*	EAF/MM		08.08.2018
KONTROLIRAO *CHECKED BY*	-		-
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:1	LIST *SHEET* -

P:\Projects_2018\PF18001-NWS-Manchester\03_DETAIL\GLASSTYPES\Glass-types_02.dwg

Glass Type	GL07		32,76 mm	(33 mm)						
Rw	EN 140-3/717-1	>=42 db		Instalation pos.:	Vertical					
Ug	EN 673	1,0 W/m²K			Vision Glazing					
g	EN 410	<=46 ca. %								
Lt	EN 410	75 ca. %								
Lr	EN 410	18 ca. %								
							Edges acc. To DIN 1249-11			
				Description	*Colour*	*K1*	*K2*	*K3*	*K4*
Glass exterior	**Layer**	**VSG/TVG**	**10,76 mm**						
	#1								
Glass 1		TVG	5,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#2								
Interlayer		PVB-Interlayer	0,76 mm	Sound reduction	clear				
	#3								
Glass 2		TVG	5,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#4			ClimaGuard 1.0+T					
Spacer 1	**Layer**	**Chromatech Ultra F**	**16,00 mm**						
		Spacer	16,00 mm	Chromatech Ultra F	black				
		Primary sealing		Butyl	black				
		Secondary sealing	d=6,00 mm	Polysulfid	black				
		Gas		90% argon					
Glass interior	**Layer**	**ESG-H**	**6,00 mm**						
	#5								
Glass 3		ESG-H	6,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#6			Local Ceramic Frit RAL 7021					

Edge processing acc. To DIN 1249-11:			
	KG	cut edge	(rezano)
	KGS	bordered edge	(grubo brušeni bridovi)
	KMG	ground edge	(grubo brušeni bridovi+rub)
	KGN	smooth ground edge	(fino brušeni rubovi)
	KPO	polished edge	(polirani rubovi)

Glass type	**Description**	**Standard**	**Tolerance**	**Edge processing**
Float	Annealed glass	DIN EN 572	DIN EN 572-8	
TVG	Heat strengthened glass	BS EN 1863-1	DIN EN ISO 12543	
ESG-H	Toughned glass, heat-soak tested	BS EN 14179-1	EN 14179-8	
VSG	Laminated glass made of annealed glass	BS EN 14449	EN 14449-8	
VSG-TVG	Laminated glass made of heat strengthened glass	BS EN 14449 / EN 1863-1	EN 14449-8	
VSG-ESG-H	Laminated glass made of heat-soak tested toughned glass	BS EN 14449 / EN 14179-1	EN 14449-8	

Stamp position				**Stamp type**
glass 1 at #1	top / right	b	45 mm	VSG/TVG
		h	30 mm	
glass 3 at #5	top / right	b	45 mm	ESG-H
		h	30 mm	

Visible from:	INSIDE
Readable from:	INSIDE

GLASS STAMP TYPES

GLASS EXTERIOR	GLASS INTERIOR
BS EN 14449/EN 1863-1 VSG TVG KFK	BS EN 14179-1 ESG-H KFK 2 o

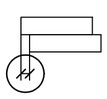
Dimensional Tolerances

	edge length	for d 3 to 6 mm	for d 8 to 12 mm	for d 15 mm	for d 19 + 25 mm
before any thermal thoughening or heat strengthening	<= 1500 mm	± 1,0	± 1,5	± 2,0	± 2,5
	> 1500 mm	± 1,5	± 2,0	± 2,5	± 3,0

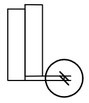
Pane squareness: Not more than 4mm difference in diagonal measurements

Fabrication tolerances:

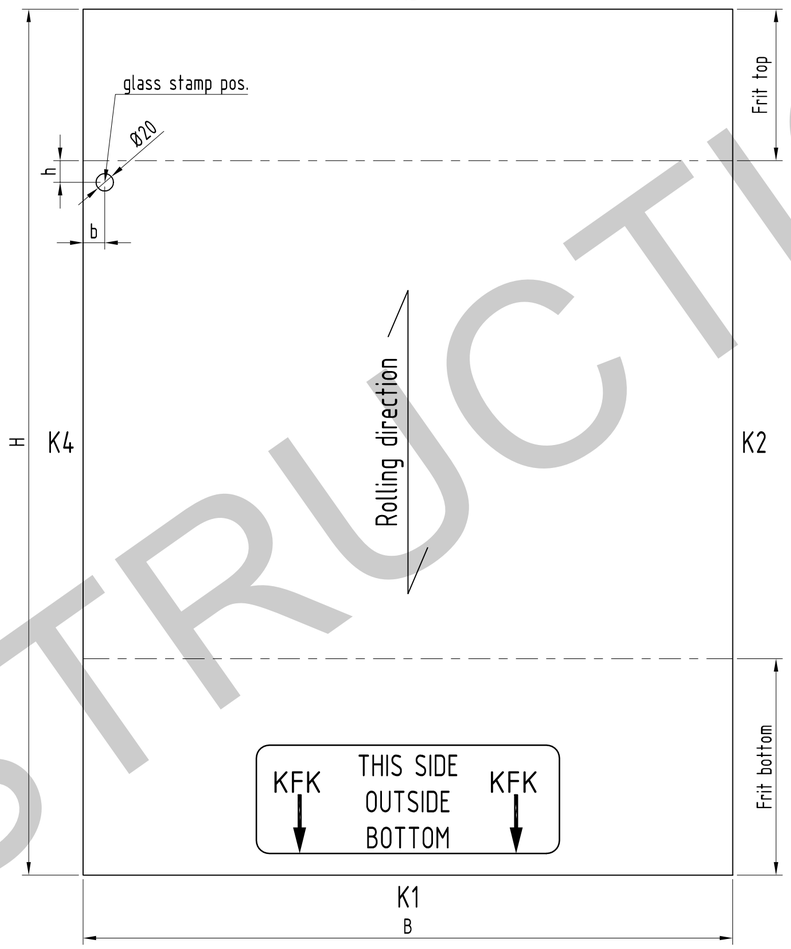
glass shift
Laminated glass: ±1mm
Insulated glass ±1mm

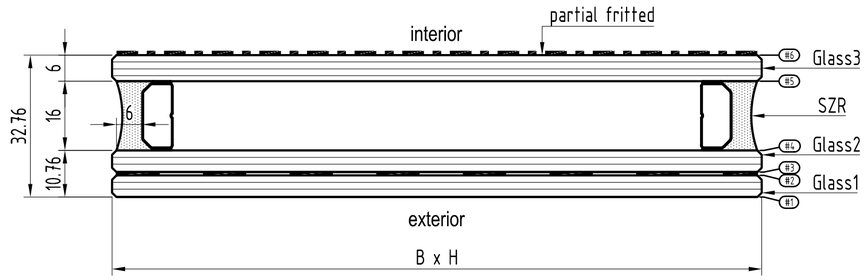


bottom edge
Laminated glass: ±0,5mm
Insulated glass ±0,5mm



Elevation from outside





STATUS NACRTA | *DRAWING STATUS*

A ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
B ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
C ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

POTPIS *SIGNATURE* NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
02	ClimaGuard updated	26.11.2018
01	VSG-Float changed to VSG-TVG	31.10.2018

KFK

NARU ITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*

NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*
New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER* **18-0773**

INVESTITOR | *CONTRACTOR*
Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*
Glass type overview
GL07
Vision Glass

VRSTA PROJEKTA *PROJECT TYPE* EWS 01

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER* NWS-KFK- EWS01-XX-DR-GL-0007
INDEX | *REVISION* **02**

CRTAO *DRAWN BY*	EAF/MM		08.08.2018
KONTROLIRAO *CHECKED BY*	-		-
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:1	LIST *SHEET* -

FOR CONSTRUCTION

P:\Projects_2018\PF18001-NWS-Manchester\03_DETAIL\GLASSTYPES\Glass-types_02.dwg

Glass Type	GL08		32,76 mm	(33 mm)						
Rw	EN 140-3/717-1	>=42 db		Instalation pos.:	Vertical					
Ug	EN 673	1,0 W/m²K			Vision Glazing					
g	EN 410	<=46 ca. %			Vent					
Lt	EN 410	75 ca. %								
Lr	EN 410	18 ca. %					Edges acc. To DIN 1249-11			
				Description	*Colour*	*K1*	*K2*	*K3*	*K4*
Glass exterior	**Layer**	**Float**	**6,00 mm**						
	#1								
Glass 1		Float	6,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#2			ClimaGuard 1.0+					
Spacer 1	**Layer**	**Chromatech Ultra F**	**16,00 mm**						
		Spacer	16,00 mm	Chromatech Ultra F	black				
		Primary sealing		Butyl	black				
		Secondary sealing	d=6,00 mm	Polysulfid	black				
		Gas		90% argon					
Glass interior	**Layer**	**VSG**	**10,76 mm**						
	#3								
Glass 2		Float	5,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#4								
Interlayer		PVB-Interlayer	0,76 mm	Sound reduction	clear				
	#5								
Glass 3		Float	5,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#6								

Edge processing acc. To DIN 1249-11:			
	KG	cut edge	(rezano)
	KGS	bordered edge	(grubo brušeni bridovi)
	KMG	ground edge	(grubo brušeni bridovi+rub)
	KGN	smooth ground edge	(fino brušeni rubovi)
	KPO	polished edge	(polirani rubovi)

Stamp position				**Stamp type**
glass 2 at #3	top / right	b	45 mm	VSG
		h	45 mm	

Glass type	**Description**	**Standard**	**Tolerance**	**Edge processing**
Float	Annealed glass	DIN EN 572	DIN EN 572-8	
TVG	Heat strengthened glass	BS EN 1863-1	DIN EN ISO 12543	
ESG-H	Toughned glass, heat-soak tested	BS EN 14179-1	EN 14179-8	
VSG	Laminated glass made of annealed glass	BS EN 14449	EN 14449-8	
VSG-TVG	Laminated glass made of heat strengthened glass	BS EN 14449 / EN 1863-1	EN 14449-8	
VSG-ESG-H	Laminated glass made of heat-soak tested toughned glass	BS EN 14449 / EN 14179-1	EN 14449-8	

Visible from:	INSIDE
Readable from:	INSIDE

GLASS STAMP TYPES

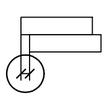
	BS EN 14449 VSG KFK
GLASS EXTERIOR	GLASS INTERIOR

Dimensional Tolerances	**edge length**	**for d 3 to 6 mm**	**for d 8 to 12 mm**	**for d 15 mm**	**for d 19 + 25 mm**
before any thermal thoughening or heat strengthening	<= 1500 mm	± 1,0	± 1,5	± 2,0	± 2,5
	> 1500 mm	± 1,5	± 2,0	± 2,5	± 3,0

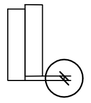
Pane squareness: Not more than 4mm difference in diagonal measurements

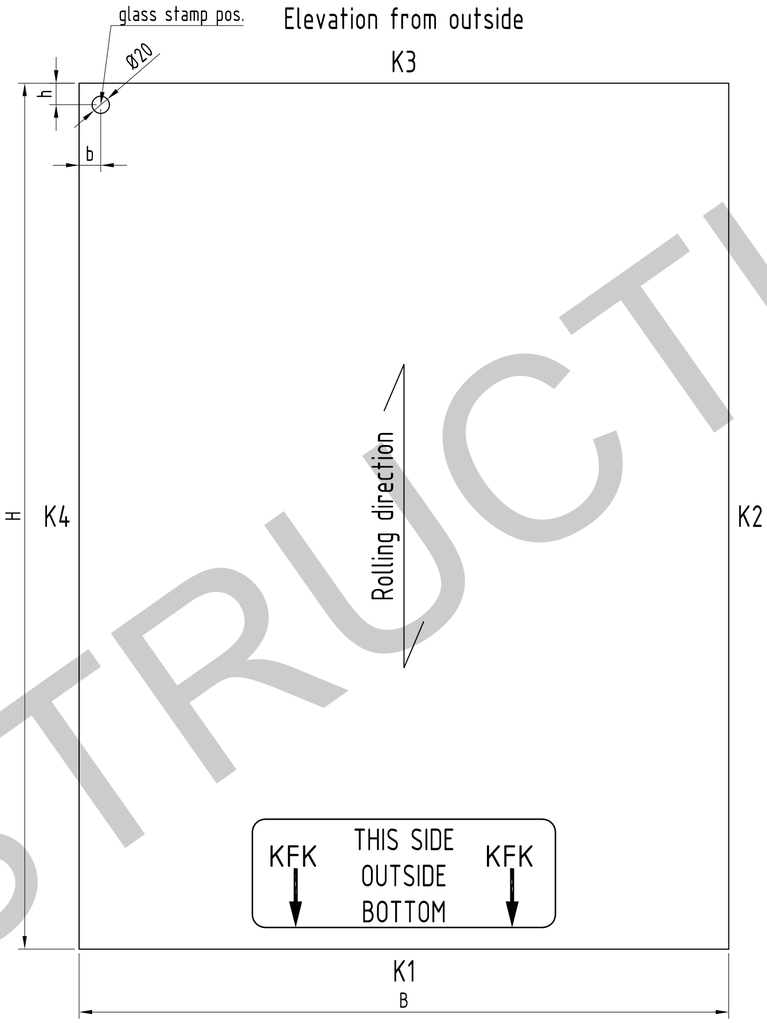
Fabrication tolerances:

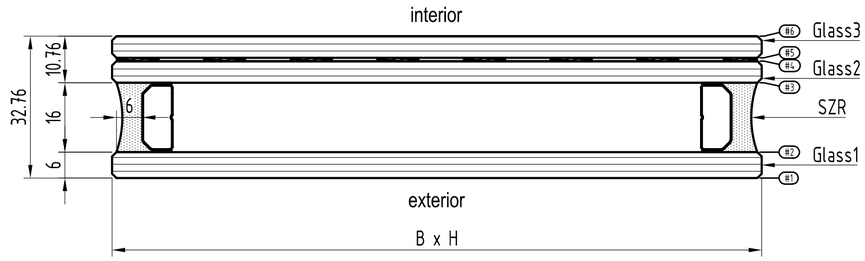
glass shift
Laminated glass: ±1mm
Insulated glass ±1mm



bottom edge
Laminated glass: ±0,5mm
Insulated glass ±0,5mm







STATUS NACRTA | *DRAWING STATUS*

A ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*

B ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*

C ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

POTPIS *SIGNATURE* | NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
01	Glass stamp layer changed	29.01.2018

KFK

NARU ITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*

NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*

New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER*: **18-0773**

INVESTITOR | *CONTRACTOR*: Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*

Glass type overview
GL08
Vision Glass Vent

VRSTA PROJEKTA *PROJECT TYPE*: EWS 01

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER*: NWS-KFK- EWS01-XX-DR-GL-0008

INDEX | *REVISION*: **01**

CRTAO *DRAWN BY*	EAF/MM		08.08.2018
KONTROLIRAO *CHECKED BY*	-		-
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:1	LIST *SHEET* -

FOR CONSTRUCTION

P:\Projects_2018\PF18001-NWS-Manchester\03_DETAIL\GLASSTYPES\Glass-types_02.dwg

Glass Type	GL09		38,76 mm	(39 mm)						
Rw	EN 140-3/717-1	- db		Instalation pos.:	Vertical					
Ug	EN 673	1,0 W/m²K			Vision Glazing					
g	EN 410	<=44 ca. %								
Lt	EN 410	73 ca. %								
Lr	EN 410	18 ca. %								
							Edges acc. To DIN 1249-11			
				Description	*Colour*	*K1*	*K2*	*K3*	*K4*
Glass exterior	**Layer**	**VSG/TVG**	**12,76 mm**						
	#1								
Glass 1		TVG	6,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#2								
Interlayer		PVB-Interlayer	0,76 mm	Sound reduction	clear				
	#3								
Glass 2		TVG	6,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#4			ClimaGuard 1.0+T					
Spacer 1	**Layer**	**Chromatech Ultra F**	**16,00 mm**						
		Spacer	16,00 mm	Chromatech Ultra F	black				
		Primary sealing		Butyl	black				
		Secondary sealing	d=6,00 mm	Polysulfid	black				
		Gas		90% argon					
Glass interior	**Layer**	**ESG-H**	**10,00 mm**						
	#5								
Glass 3		ESG-H	10,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#6			Local Ceramic Frit RAL 7021					

Edge processing acc. To DIN 1249-11:			
	KG	cut edge	(rezano)
	KGS	bordered edge	(grubo brušeni bridovi)
	KMG	ground edge	(grubo brušeni bridovi+rub)
	KGN	smooth ground edge	(fino brušeni rubovi)
	KPO	polished edge	(polirani rubovi)

Stamp position				**Stamp type**
glass 1 at #1	top / right	b	45 mm	VSG/TVG
		h	30 mm	
glass 3 at #5	top / right	b	45 mm	ESG-H
		h	30 mm	

Glass type	**Description**	**Standard**	**Tolerance**	**Edge processing**
Float	Annealed glass	DIN EN 572	DIN EN 572-8	
TVG	Heat strengthened glass	BS EN 1863-1	DIN EN ISO 12543	
ESG-H	Toughned glass, heat-soak tested	BS EN 14179-1	EN 14179-8	
VSG	Laminated glass made of annealed glass	BS EN 14449	EN 14449-8	
VSG-TVG	Laminated glass made of heat strengthened glass	BS EN 14449 / EN 1863-1	EN 14449-8	
VSG-ESG-H	Laminated glass made of heat-soak tested toughned glass	BS EN 14449 / EN 14179-1	EN 14449-8	

Visible from:	INSIDE
Readable from:	INSIDE

GLASS STAMP TYPES

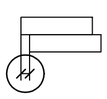
GLASS EXTERIOR	GLASS INTERIOR
BS EN 14449/EN 1863-1 VSG TVG KFK	BS EN 14179-1 ESG-H KFK 2 o

Dimensional Tolerances	**edge length**	**for d 3 to 6 mm**	**for d 8 to 12 mm**	**for d 15 mm**	**for d 19 + 25 mm**
before any thermal thoughening or heat strengthening	<= 1500 mm	± 1,0	± 1,5	± 2,0	± 2,5
	> 1500 mm	± 1,5	± 2,0	± 2,5	± 3,0

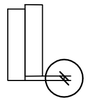
Pane squareness: Not more than 4mm difference in diagonal measurements

Fabrication tolerances:

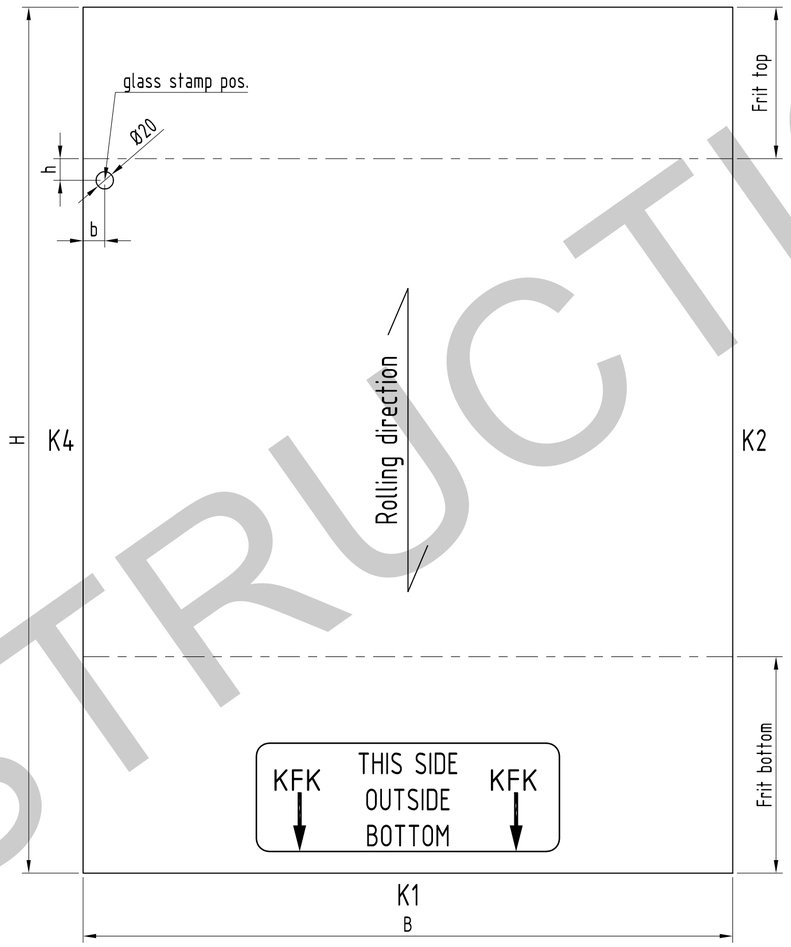
glass shift
Laminated glass: ±1mm
Insulated glass ±1mm

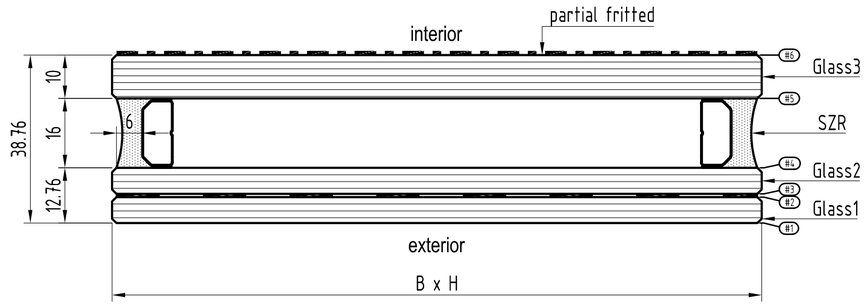


bottom edge
Laminated glass: ±0,5mm
Insulated glass ±0,5mm



Elevation from outside





STATUS NACRTA | *DRAWING STATUS*

- A ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
- B ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
- C ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

POTPIS *SIGNATURE* | NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
02	ClimaGuard updated	26.11.2018
01	VSG-Float changed to VSG-TVG	31.10.2018

NARU ITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*

NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*

New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER*: **18-0773**

INVESTITOR | *CONTRACTOR*: Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*

Glass type overview
GL09
Vision Glass

VRSTA PROJEKTA *PROJECT TYPE*: EWS 01

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER*: NWS-KFK- EWS01-XX-DR-GL-0009

INDEX | *REVISION*: **02**

CRTAO *DRAWN BY*	EAF/MM		08.08.2018
KONTROLIRAO *CHECKED BY*	-		-
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:1	LIST *SHEET* -

FOR CONSTRUCTION

P:\Projects_2018\PF18001-NWS-Manchester\03_DETAIL\GLASSTYPES\Glass-types_02.dwg

Glass Type	GL10		39,52 mm	(40 mm)						
Rw	EN 140-3/717-1	- db		Instalation pos.:	Vertical					
Ug	EN 673	1,0 W/m²K			Vision Glazing					
g	EN 410	<=46 ca. %			Vent					
Lt	EN 410	75 ca. %								
Lr	EN 410	18 ca. %								
							Edges acc. To DIN 1249-11			
				Description	*Colour*	*K1*	*K2*	*K3*	*K4*
Glass exterior	**Layer**	**Float**	**10,00 mm**						
	#1								
Glass 1		Float	10,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#2			ClimaGuard 1.0+					
Spacer 1	**Layer**	**Chromatech Ultra F**	**16,00 mm**						
		Spacer	16,00 mm	Chromatech Ultra F	black				
		Primary sealing		Butyl	black				
		Secondary sealing	d=6,00 mm	Polysulfid	black				
		Gas		90% argon					
Glass interior	**Layer**	**VSG**	**13,52 mm**						
	#3								
Glass 2		Float	6,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#4								
Interlayer		PVB-Interlayer	1,52 mm	Sound reduction	clear				
	#5								
Glass 3		Float	6,00 mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#6								

Edge processing acc. To DIN 1249-11:			
	KG	cut edge	(rezano)
	KGS	bordered edge	(grubo brušeni bridovi)
	KMG	ground edge	(grubo brušeni bridovi+rub)
	KGN	smooth ground edge	(fino brušeni rubovi)
	KPO	polished edge	(polirani rubovi)

Stamp position				**Stamp type**
glass 2 at #3	top / right	b	45 mm	VSG
		h	45 mm	

Glass type	**Description**	**Standard**	**Tolerance**	**Edge processing**
Float	Annealed glass	DIN EN 572	DIN EN 572-8	
TVG	Heat strengthened glass	BS EN 1863-1	DIN EN ISO 12543	
ESG-H	Toughned glass, heat-soak tested	BS EN 14179-1	EN 14179-8	
VSG	Laminated glass made of annealed glass	BS EN 14449	EN 14449-8	
VSG-TVG	Laminated glass made of heat strengthened glass	BS EN 14449 / EN 1863-1	EN 14449-8	
VSG-ESG-H	Laminated glass made of heat-soak tested toughned glass	BS EN 14449 / EN 14179-1	EN 14449-8	

Visible from:	INSIDE
Readable from:	INSIDE

GLASS STAMP TYPES

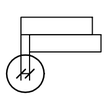
	BS EN 14449 VSG KFK
GLASS EXTERIOR	GLASS INTERIOR

Dimensional Tolerances	**edge length**	**for d 3 to 6 mm**	**for d 8 to 12 mm**	**for d 15 mm**	**for d 19 + 25 mm**
before any thermal thoughening or heat strengthening	<= 1500 mm	± 1,0	± 1,5	± 2,0	± 2,5
	> 1500 mm	± 1,5	± 2,0	± 2,5	± 3,0

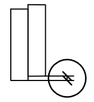
Pane squareness: Not more than 4mm difference in diagonal measurements

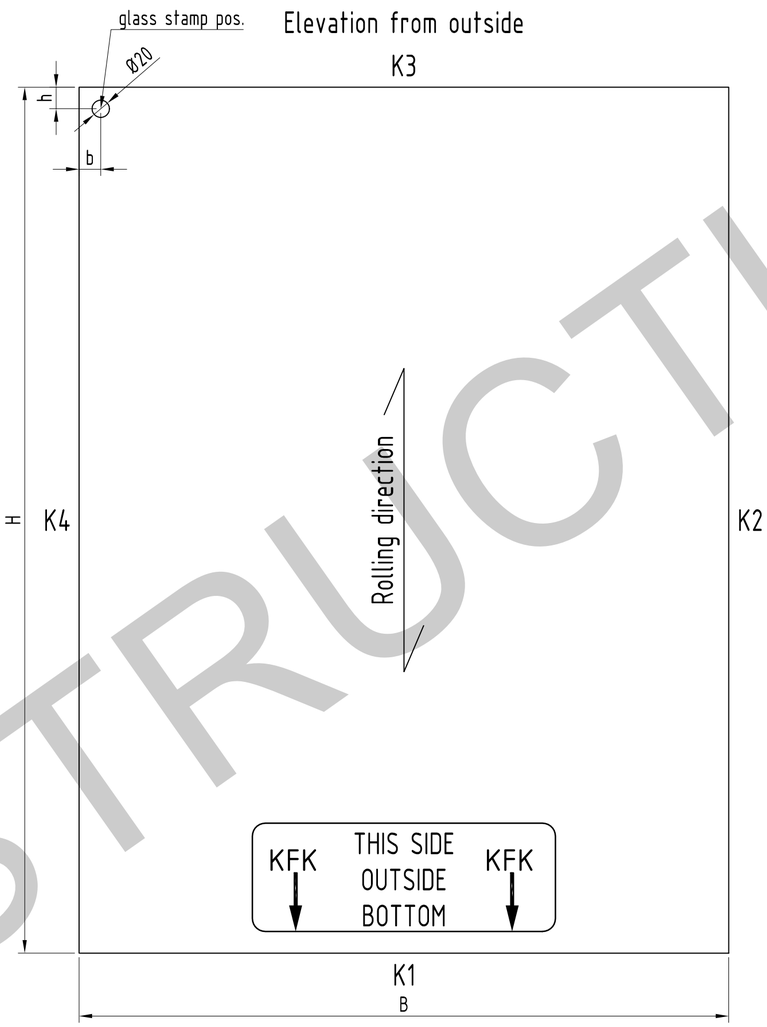
Fabrication tolerances:

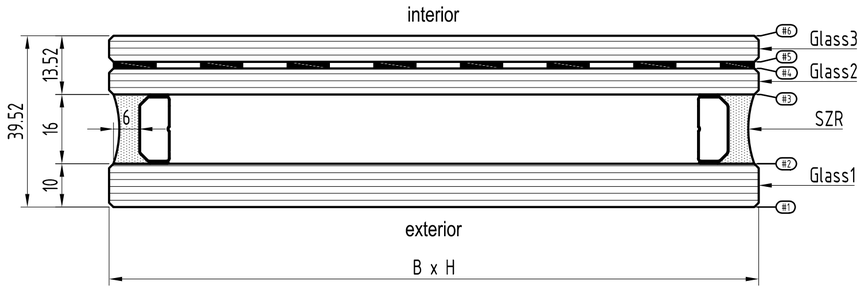
glass shift
Laminated glass: ±1mm
Insulated glass ±1mm



bottom edge
Laminated glass: ±0,5mm
Insulated glass ±0,5mm







FOR CONSTRUCTION

STATUS NACRTA | *DRAWING STATUS*

A ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
B ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
C ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

POTPIS *SIGNATURE* | NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE *REVISION DESCRIPTION*	DATUM *DATE*
01	Glass stamp layer changed	29.01.2019

KFK

NARU ITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*

NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*
New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER*: **18-0773**

INVESTITOR | *CONTRACTOR*: Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*
Glass type overview
GL10
Vision Glass Vent

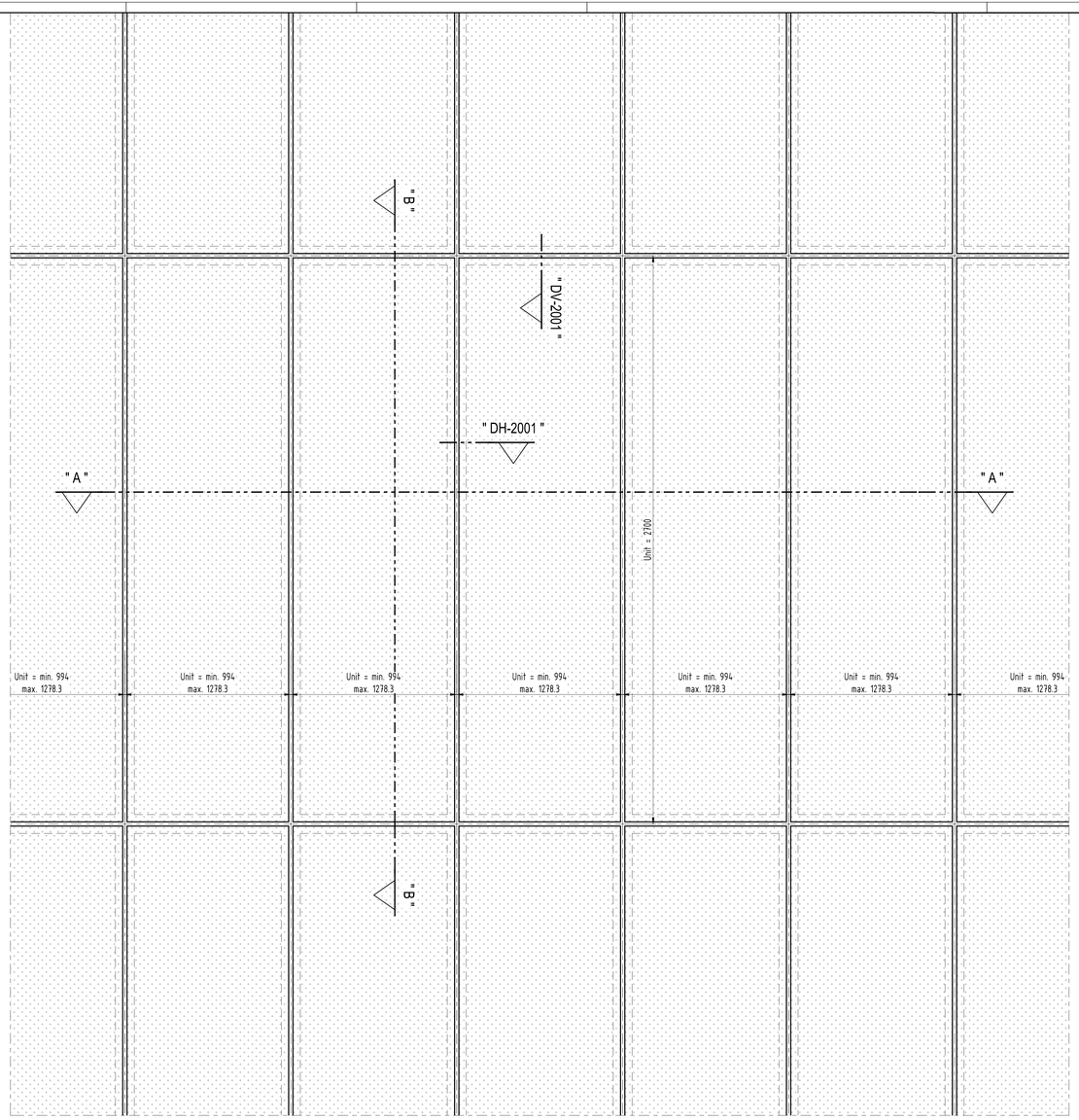
VRSTA PROJEKTA *PROJECT TYPE*: EWS 01

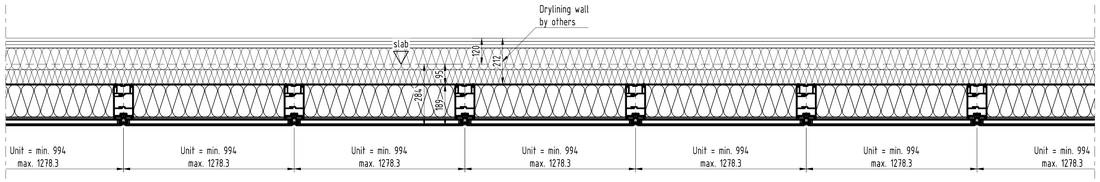
PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER*: NWS-KFK- EWS01-XX-DR-GL-0010
INDEX | *REVISION*: **01**

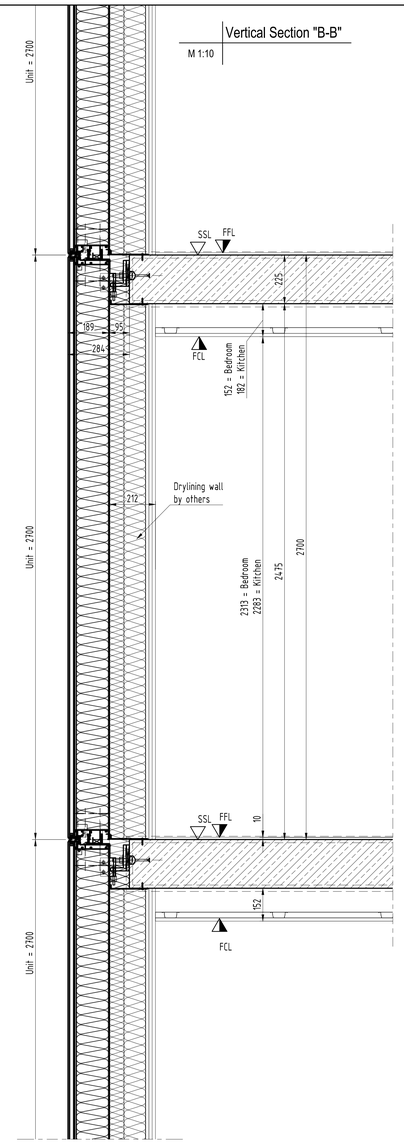
CRTAO *DRAWN BY*	EAF/MM		08.08.2018
KONTROLIRAO *CHECKED BY*	-		-
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:1	LIST *SHEET* -

P:\Projects_2018\PF18001-NWS-Manchester\03_DETAIL\GLASSTYPES\Glass-types_02.dwg





Horizonzal Section "A-A"
M 1:10



Vertical Section "B-B"
M 1:10

vision glass with frit

STATUS NACRTA | *DRAWING STATUS*

- **A** ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
- **B** ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
- **C** ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

POTPIS *SIGNATURE* | NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
02	System width updated	13.03.2019
01	issued for status update	30.11.2018

KFK

NARUČITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*

EWS 02
UNIT SYSTEM WIDTHS

NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*

New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER*: **18-0773**

INVESTITOR | *CONTRACTOR*: Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*

Part Elevation
Standard Unit
-

VRSTA PROJEKTA *PROJECT TYPE*: EWS 02

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER*: NWS-KFK- EWS02-XX-DR-EP-2001

INDEX | *REVISION*: **02**

CRTAO *DRAWN BY*	EAF/MM		08.08.2018
KONTROLIRAO *CHECKED BY*	-		-
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:10	LIST *SHEET* -

P:\Projects_2018\P18001-NWS-Manchester\03_DETAIL\NWS-Details_20190514.dwg

Glass Type	**GL12**		**32,00 mm**		**(32 mm)**					
Rw	EN 140-3/717-1		- db		Instalation pos.:	Vertical				
Ug	EN 673		2,7 W/m²K			Vision Glazing				
g	EN 410		<=76 ca. %							
Lt	EN 410		81 ca. %							
Lr	EN 410		15 ca. %				Edges acc. To DIN 1249-11			
					Description	*Colour*	*K1*	*K2*	*K3*	*K4*
Glass exterior	**Layer**	**TVG**	**8,00 mm**							
	#1									
Glass 1		TVG	8,00	mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#2									
Spacer 1	**Layer**	**Chromatech Ultra F**	**18,00 mm**							
		Spacer	18,00	mm	Chromatech Ultra F	black				
		Primary sealing			Butyl	black				
		Secondary sealing	d=10,00	mm	Silicon DC 3363	black				
		Gas			90% argon					
Glass interior	**Layer**	**ESG-H**	**6,00 mm**							
	#3									
Glass 2		ESG-H	6,00	mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#4				Ceramic Frit RAL 9006 metalizado					

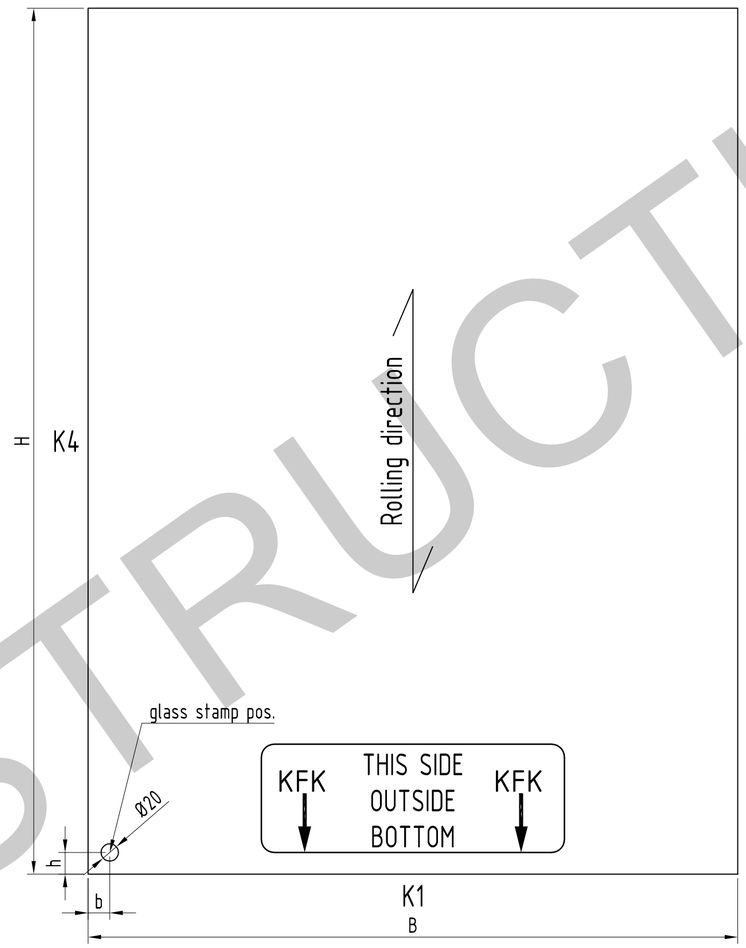
Edge processing acc. To DIN 1249-11:	KG	cut edge	(rezano)
	KGS	bordered edge	(grubo brušeni bridovi)
	KMG	ground edge	(grubo brušeni bridovi+rub)
	KGN	smooth ground edge	(fino brušeni rubovi)
	KPO	polished edge	(polirani rubovi)

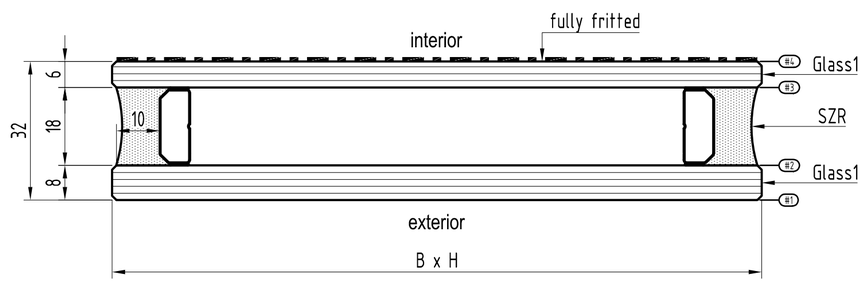
Stamp position				**Stamp type**
glass 1 at #1	bottom / left	b	45 mm	TVG
		h	45 mm	
glass 2 at #3	bottom / left	b	45 mm	ESG-H
		h	45 mm	

Glass type	**Description**	**Standard**	**Tolerance**	**Edge processing**
Float	Annealed glass	DIN EN 572	DIN EN 572-8	
TVG	Heat strengthened glass	BS EN 1863-1	DIN EN ISO 12543	
ESG-H	Toughned glass, heat-soak tested	BS EN 14179-1	EN 14179-8	
VSG	Laminated glass made of annealed glass	BS EN 14449	EN 14449-8	
VSG-TVG	Laminated glass made of heat strengthened glass	BS EN 14449 / EN 1863-1	EN 14449-8	
VSG-ESG-H	Laminated glass made of heat-soak tested toughned glass	BS EN 14449 / EN 14179-1	EN 14449-8	

Visible from:	OUTSIDE
Readable from:	OUTSIDE

Elevation from outside





GLASS STAMP TYPES

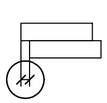
GLASS EXTERIOR	GLASS INTERIOR
BS EN 1863-1 TVG KFK	BS EN 14179-1 ESG-H KFK

Dimensional Tolerances	**edge length**	**for d 3 to 6 mm**	**for d 8 to 12 mm**	**for d 15 mm**	**for d 19 + 25 mm**
before any thermal thoughening or heat strengthening	<= 1500 mm	± 1,0	± 1,5	± 2,0	± 2,5
	> 1500 mm	± 1,5	± 2,0	± 2,5	± 3,0

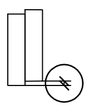
Pane squareness: Not more than 4mm difference in diagonal measurements

Fabrication tolerances:

glass shift
Laminated glass: ±1mm
Insulated glass ±1mm



bottom edge
Laminated glass: ±0,5mm
Insulated glass ±0,5mm



STATUS NACRTA | *DRAWING STATUS*

A ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
B ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
C ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

POTPIS *SIGNATURE* | NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*

KFK

NARU ITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*

NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*
New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER*: **18-0773**

INVESTITOR | *CONTRACTOR*: Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*
Glass type overview
GL12
Opaque coloured SG

VRSTA PROJEKTA *PROJECT TYPE*: EWS 02

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER*: NWS-KFK- EWS02-XX-DR-GL-0012

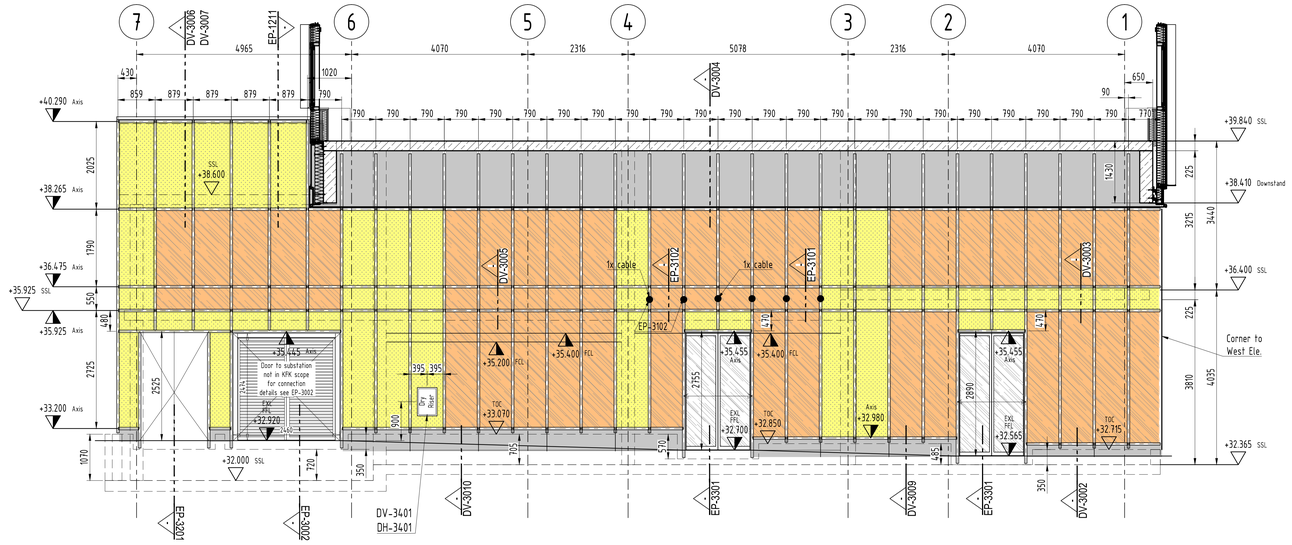
INDEX | *REVISION*: **00**

CRTAO *DRAWN BY*	EAF/MM		31.10.2018
KONTROLIRAO *CHECKED BY*	-		-
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:1	LIST *SHEET* -

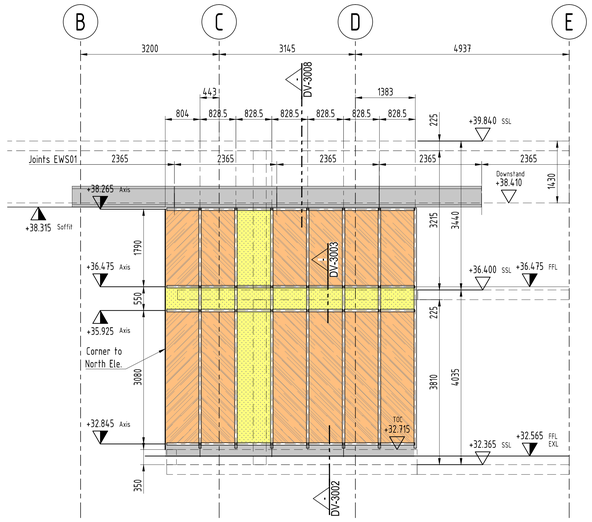
FOR CONSTRUCTION

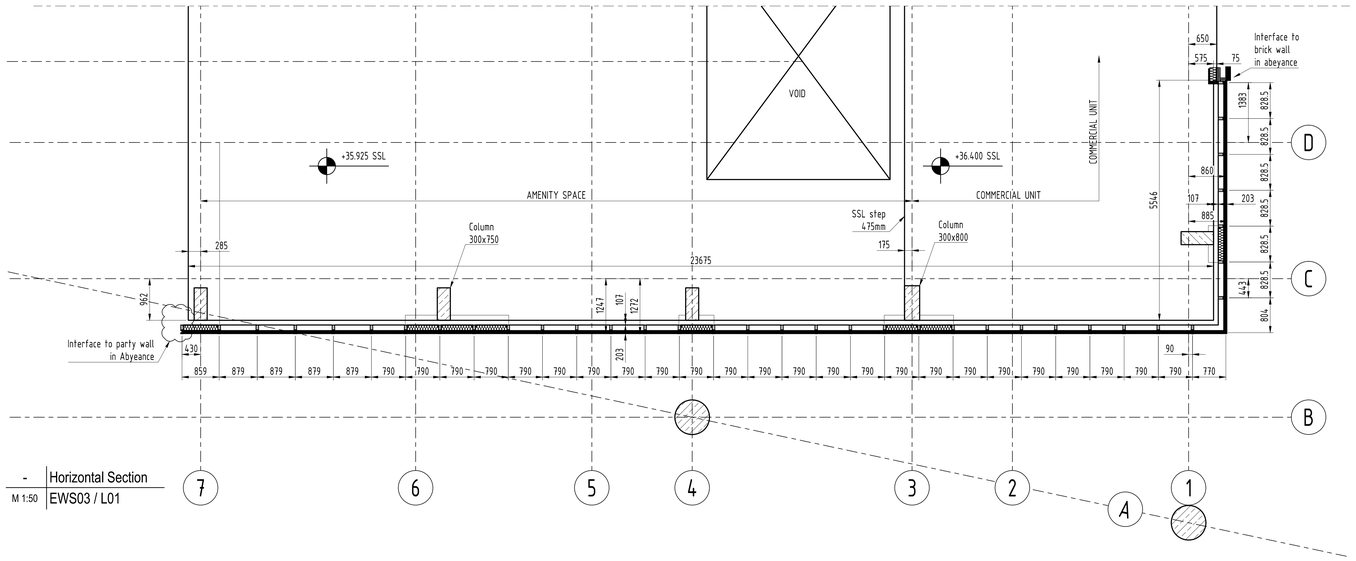
P:\Projects_2018\PF18001-NWS-Manchester\03_DETAIL\GLASSTYPES\Glass-types_01.dwg

- | Elevation "NORTH"
M 1:50 | EWS03 / L00 - L01

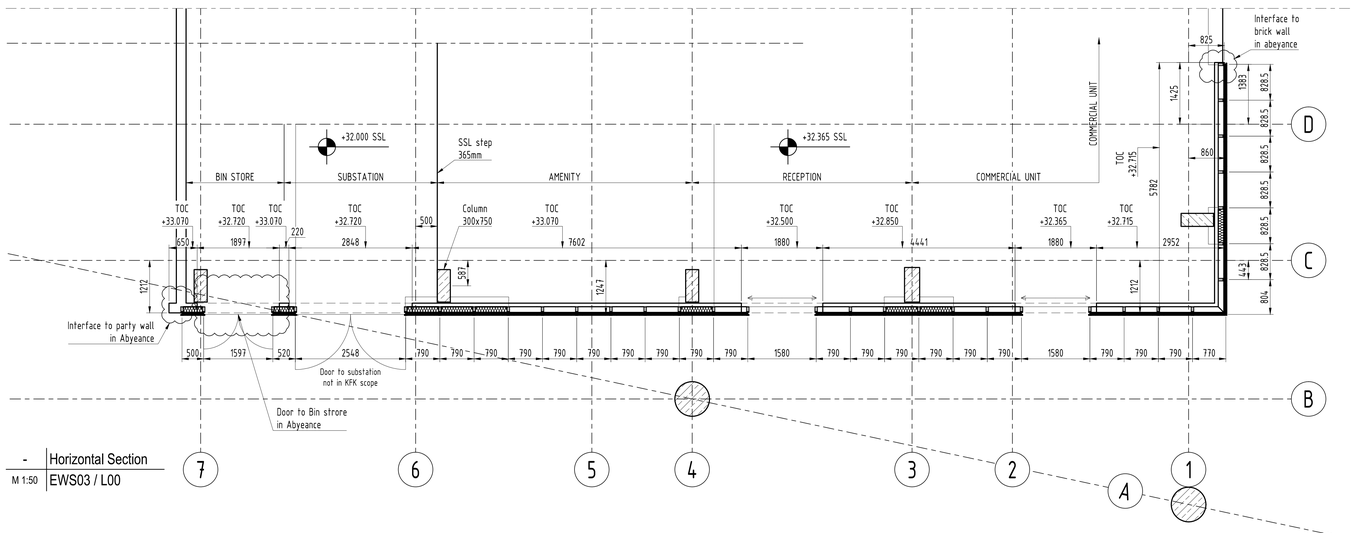


- | Elevation "WEST"
M 1:50 | EWS03 / L00 - L01





- | Horizontal Section
M 1:50 | EWS03 / L01



- | Horizontal Section
M 1:50 | EWS03 / L00

STATUS NACRTA | *DRAWING STATUS*

A ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*

B ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*

C ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

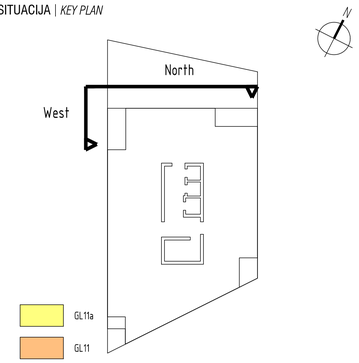
POTPIS *SIGNATURE* | NADNEVAK *DATE*

01	updated acc. to comments	20.05.2019
INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*

KFK

NARUČITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*



NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*

New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER* **18-0773**

INVESTITOR | *CONTRACTOR*
Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*

Elevation & Plans
SCW - Facade
-

VRSTA PROJEKTA *PROJECT TYPE* EWS 03

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER*
NWS-KFK- EWS03-XX-DR-EP-3001

INDEX | *REVISION* **01**

CRTAO *DRAWN BY*	EAF/MM		29.11.2018
KONTROLIRAO *CHECKED BY*	-		-
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:50	LIST *SHEET* -

P:\Projects_2018\P18001-NWS-Manchester\03_DETAILS\EWS03-SCW\NWS-SCW-Details_2018Oct15.dwg

Glass Type	GL11		42,28 mm	(43 mm)						
Rw	EN 140-3/717-1	- db			Instalation pos.:	Vertical				
Ug	EN 673	1,0 W/m²K				Vision Glazing				
g	EN 410	<=45 ca. %				Ground Floor				
Lt	EN 410	72 ca. %								
Lr	EN 410	18 ca. %					Edges acc. To DIN 1249-11			
					Description	*Colour*	*K1*	*K2*	*K3*	*K4*
Glass exterior	**Layer**	**VSG/TVG**	**13,52 mm**							
	#1									
Glass 1		TVG	6,00	mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#2									
Interlayer		PVB-Interlayer	1,52	mm	Sound reduction	clear				
	#3									
Glass 2		TVG	6,00	mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#4				ClimaGuard 1.0+ T					
Spacer 1	**Layer**	**Chromatech Ultra F**	**16,00 mm**							
		Spacer	16,00	mm	Chromatech Ultra F	black				
		Primary sealing			Butyl	black				
		Secondary sealing	d=6,00	mm	Polysulfid	black				
		Gas			90% argon					
Glass interior	**Layer**	**VSG/TVG**	**12,76 mm**							
	#5									
Glass 3		TVG	6,00	mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#6									
Interlayer		PVB-Interlayer	0,76	mm	Sound reduction	clear				
	#7									
Glass 4		TVG	6,00	mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#8									

Edge processing acc. To DIN 1249-11:			
	KG	cut edge	(rezano)
	KGS	bordered edge	(grubo brušeni bridovi)
	KMG	ground edge	(grubo brušeni bridovi+rub)
	KGN	smooth ground edge	(fino brušeni rubovi)
	KPO	polished edge	(polirani rubovi)

Stamp position				Stamp type
glass 1 at #1	bottom / right	b h	45 mm 45 mm	VSG/TVG
glass 4 at #8	bottom / right	b h	45 mm 45 mm	VSG/TVG

Glass type	Description	Standard	Tolerance	Edge processing
Float	Annealed glass	DIN EN 572	DIN EN 572-8	
TVG	Heat strengthened glass	BS EN 1863-1	DIN EN ISO 12543	
ESG-H	Toughned glass, heat-soak tested	BS EN 14179-1	EN 14179-8	
VSG	Laminated glass made of annealed glass	BS EN 14449	EN 14449-8	
VSG-TVG	Laminated glass made of heat strengthened glass	BS EN 14449 / EN 1863-1	EN 14449-8	
VSG-ESG-H	Laminated glass made of heat-soak tested toughned glass	BS EN 14449 / EN 14179-1	EN 14449-8	

Visible from:	INSIDE
Readable from:	INSIDE

GLASS STAMP TYPES

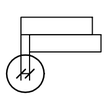
GLASS EXTERIOR	GLASS INTERIOR
BS EN 14449/EN 1863-1 VSG TVG KFK 1₀	BS EN 14449/EN 1863-1 VSG TVG KFK 1₀

Dimensional Tolerances	edge length	for d 3 to 6 mm	for d 8 to 12 mm	for d 15 mm	for d 19 + 25 mm
before any thermal thoughening or heat strengthening	<= 1500 mm	± 1,0	± 1,5	± 2,0	± 2,5
	> 1500 mm	± 1,5	± 2,0	± 2,5	± 3,0

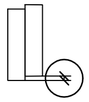
Pane squareness: Not more than 4mm difference in diagonal measurements

Fabrication tolerances:

glass shift
Laminated glass: ±1mm
Insulated glass ±1mm

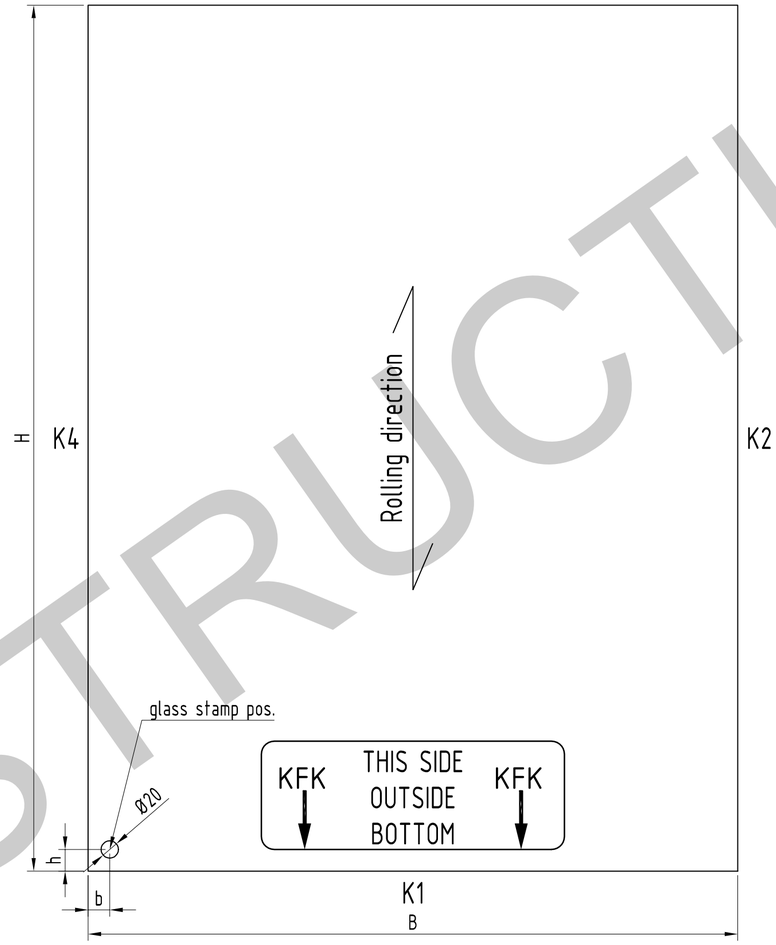


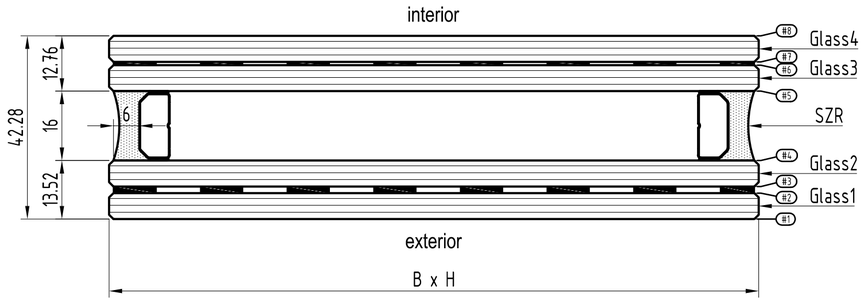
bottom edge
Laminated glass: ±0,5mm
Insulated glass ±0,5mm



Elevation from outside

K3





STATUS NACRTA | *DRAWING STATUS*

A ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
B ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
C ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

POTPIS *SIGNATURE* NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
01	exterior glass updated to meet design criteria	20.05.2019

KFK

NARU ITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*

NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*
New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER* **18-0773**

INVESTITOR | *CONTRACTOR*
Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*
Glass type overview
GL11
Vision Glass SCW

VRSTA PROJEKTA *PROJECT TYPE* EWS 03

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER* NWS-KFK- EWS03-XX-DR-GL-0011
INDEX | *REVISION* **01**

CRTAO *DRAWN BY*	EAF/MM		08.08.2018
KONTROLIRAO *CHECKED BY*	-		-
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:1	LIST *SHEET* -

FOR CONSTRUCTION

P:\Projects_2018\PF18001-NWS-Manchester\03_DETAIL\GLASSTYPES\Glass-types_02.dwg

Glass Type	**GL11a**		**41,52 mm**	**(42 mm)**						
Rw	EN 140-3/717-1	- db			Instalation pos.:	Vertical				
Ug	EN 673	1,0 W/m²K				Vision Glazing				
g	EN 410	<=45 ca. %				Ground Floor				
Lt	EN 410	72 ca. %								
Lr	EN 410	18 ca. %					Edges acc. To DIN 1249-11			
					Description	*Colour*	*K1*	*K2*	*K3*	*K4*
Glass exterior	**Layer**	**VSG/TVG**	**13,52 mm**							
	#1									
Glass 1		TVG	6,00	mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#2									
Interlayer		PVB-Interlayer	1,52	mm	Sound reduction	clear				
	#3									
Glass 2		TVG	6,00	mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#4				ClimaGuard 1.0+ T					
Spacer 1	**Layer**	**Chromatech Ultra F**	**22,00 mm**							
		Spacer	22,00	mm	Chromatech Ultra F	black				
		Primary sealing			Butyl	black				
		Secondary sealing	d=6,00	mm	Polysulfid	black				
		Gas			90% argon					
Glass interior	**Layer**	**ESG-H**	**6,00 mm**							
	#5									
Glass 3		ESG-H	6,00	mm	Float ExtraClear		KMG	KMG	KMG	KMG
	#6				Ceramic Frit RAL 7021					

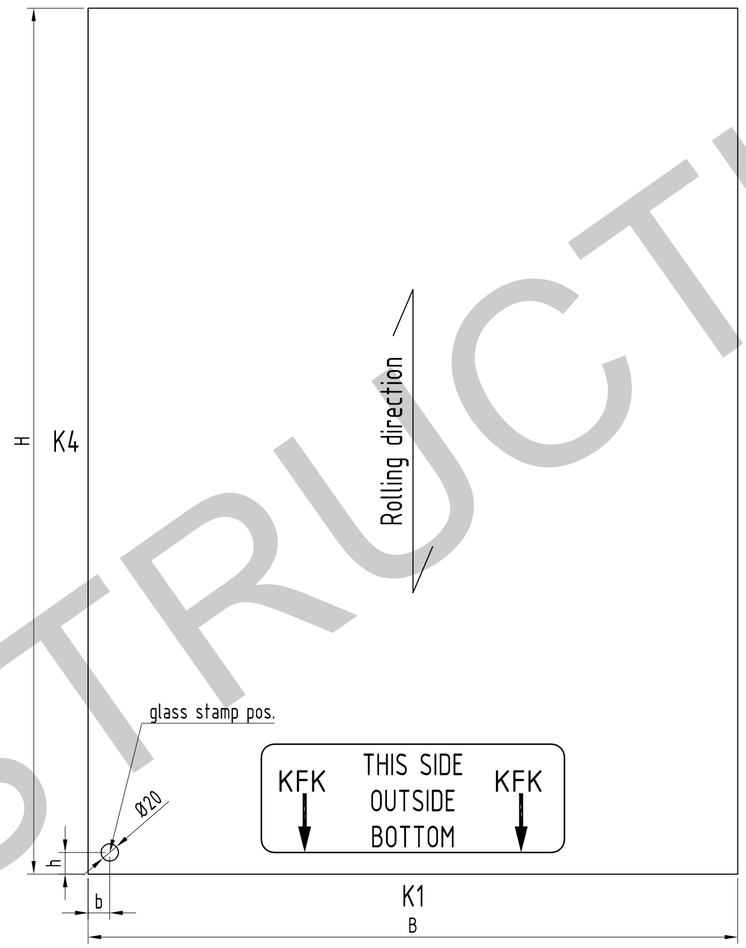
Edge processing acc. To DIN 1249-11:			
	KG	cut edge	(rezano)
	KGS	bordered edge	(grubo brušeni bridovi)
	KMG	ground edge	(grubo brušeni bridovi+rub)
	KGN	smooth ground edge	(fino brušeni rubovi)
	KPO	polished edge	(polirani rubovi)

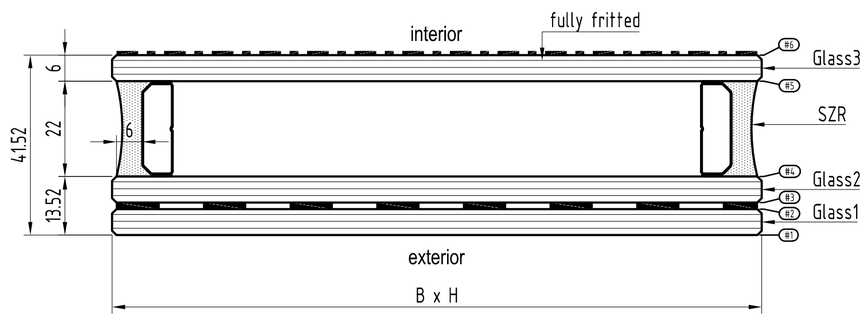
Stamp position				**Stamp type**
glass 1 at #1	bottom / left	b	45 mm	VSG/TVG
		h	45 mm	
glass 3 at #5	bottom / left	b	45 mm	ESG-H
		h	45 mm	

Glass type	**Description**	**Standard**	**Tolerance**	**Edge processing**
Float	Annealed glass	DIN EN 572	DIN EN 572-8	
TVG	Heat strengthened glass	BS EN 1863-1	DIN EN ISO 12543	
ESG-H	Toughned glass, heat-soak tested	BS EN 14179-1	EN 14179-8	
VSG	Laminated glass made of annealed glass	BS EN 14449	EN 14449-8	
VSG-TVG	Laminated glass made of heat strengthened glass	BS EN 14449 / EN 1863-1	EN 14449-8	
VSG-ESG-H	Laminated glass made of heat-soak tested toughned glass	BS EN 14449 / EN 14179-1	EN 14449-8	

Visible from:	OUTSIDE
Readable from:	OUTSIDE

Elevation from outside





GLASS STAMP TYPES

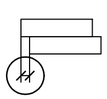
GLASS EXTERIOR	GLASS INTERIOR
BS EN 14449/EN 1863-1 VSG TVG KFK 1 o	BS EN 14179-1 ESG-H KFK

Dimensional Tolerances	**edge length**	**for d 3 to 6 mm**	**for d 8 to 12 mm**	**for d 15 mm**	**for d 19 + 25 mm**
before any thermal thoughening or heat strengthening	<= 1500 mm	± 1,0	± 1,5	± 2,0	± 2,5
	> 1500 mm	± 1,5	± 2,0	± 2,5	± 3,0

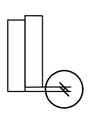
Pane squareness: Not more than 4mm difference in diagonal measurements

Fabrication tolerances:

glass shift
Laminated glass: ±1mm
Insulated glass ±1mm



bottom edge
Laminated glass: ±0,5mm
Insulated glass ±0,5mm



STATUS NACRTA | *DRAWING STATUS*

A ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
B ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
C ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

POTPIS *SIGNATURE* NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
02	exterior glass updated to meet design criteria	20.05.2019
01	Glass build up cahnged	31.10.2018

KFK

NARU ITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*

NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*
New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER* **18-0773**

INVESTITOR | *CONTRACTOR*
Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*
Glass type overview
GL11a
Vision Glass SCW fritted

VRSTA PROJEKTA *PROJECT TYPE* EWS 03

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER* NWS-KFK- EWS03-XX-DR-GL-0011a
INDEX | *REVISION* **02**

CRTAO *DRAWN BY*	EAF/MM		08.08.2018
KONTROLIRAO *CHECKED BY*	-		-
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:1	LIST *SHEET* -

FOR CONSTRUCTION

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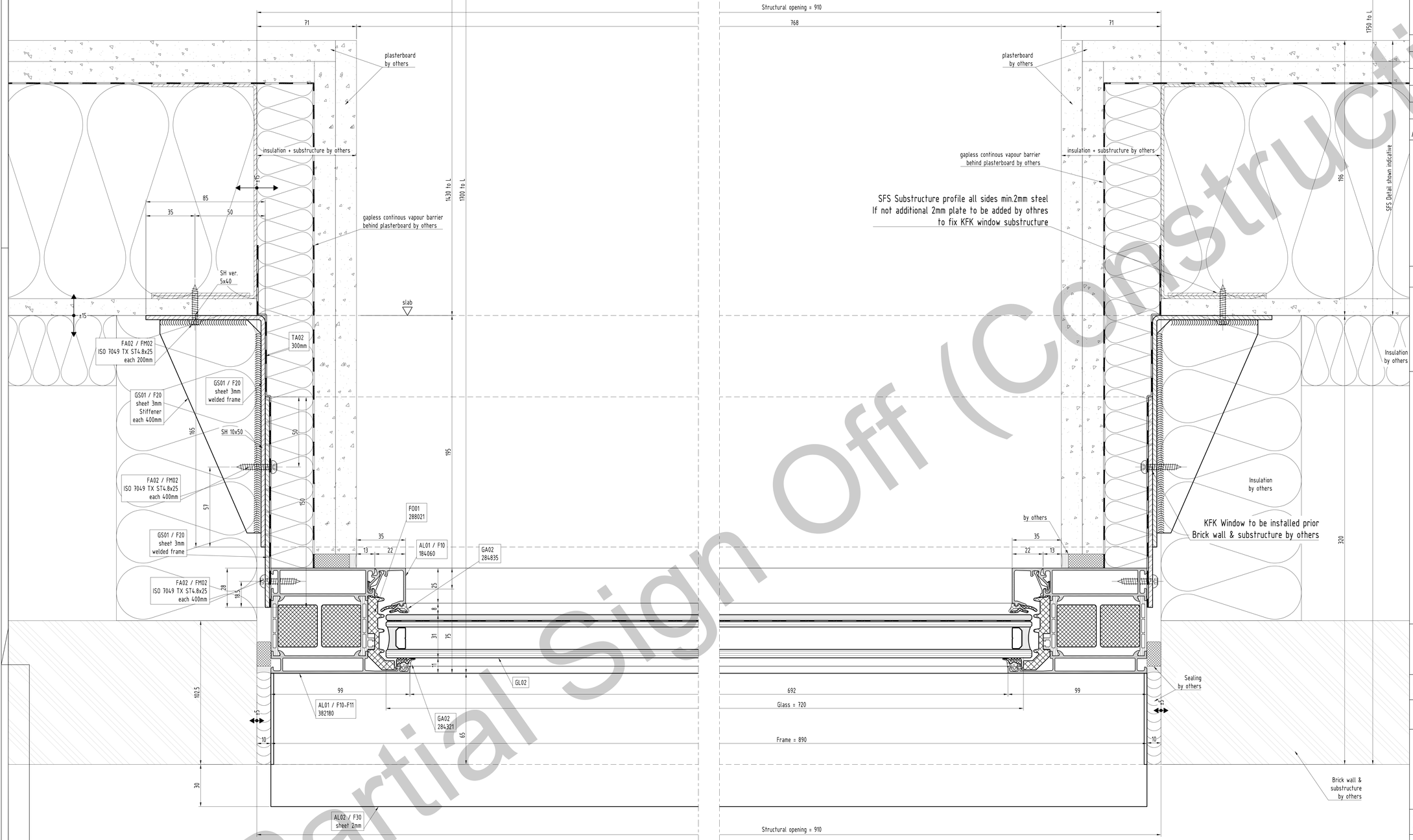


B - Partial Sign Off (Construction)

STATUS NACRTA | *DRAWING STATUS*

- **A** ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
- **B** ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
- **C** ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

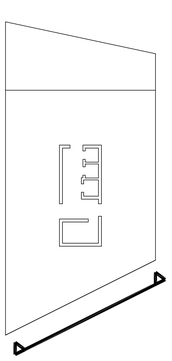
POTPIS *SIGNATURE* | NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
01	updated acc. to comments	11.09.2019

KFK

NARU ITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*



NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*

New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER*: **18-0773**

INVESTITOR | *CONTRACTOR*: Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*

Horizontal Section
South Level 01
Window @ brickwall

VRSTA PROJEKTA *PROJECT TYPE*: EWS 05

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER*: NWS-KFK- EWS05-XX-DR-DH-5001

INDEX | *REVISION*: **01**

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KONTROLIRAO *CHECKED BY*	-		-
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:1	LIST *SHEET* -

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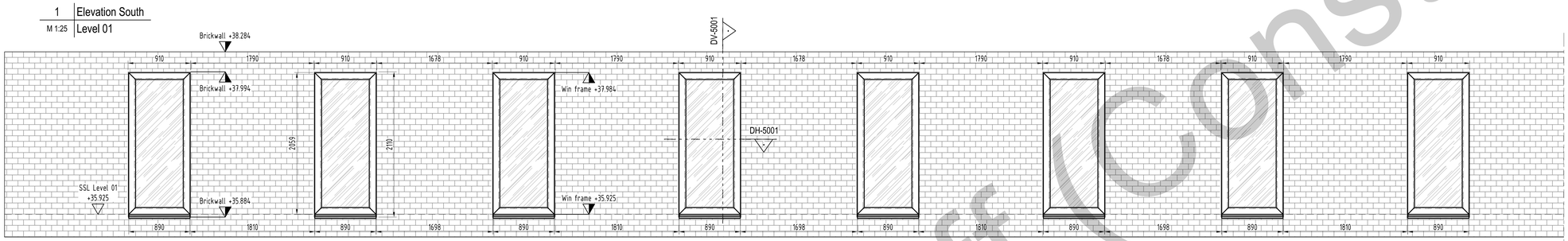
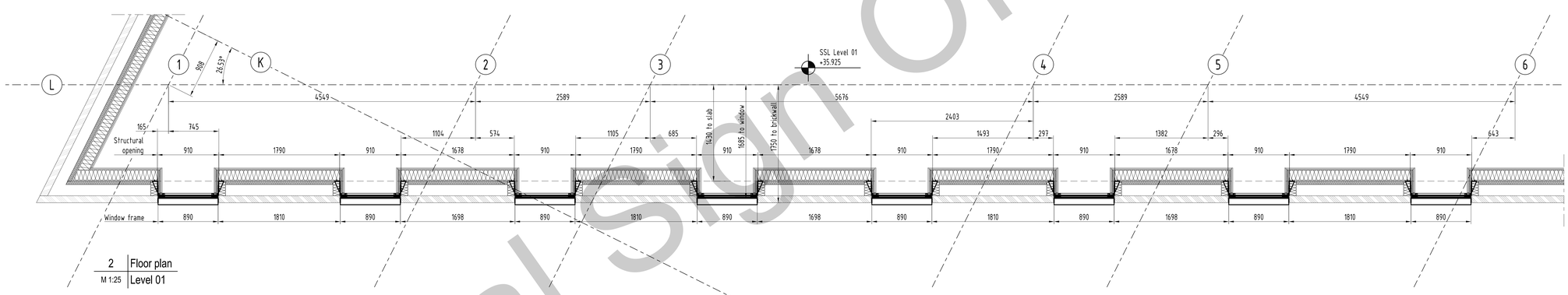


1 | Elevation South
M 1:25 | Level 01



2 | Floor plan
M 1:25 | Level 01

B - Partial Sign Off (Construction)

STATUS NACRTA | *DRAWING STATUS*

- **A** ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
- **B** ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
- **C** ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

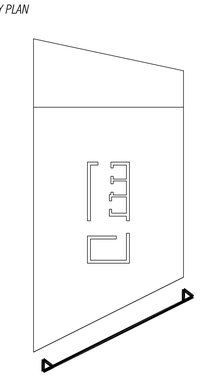
POTPIS *SIGNATURE* | NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
01	updated acc. to comments	11.09.2019

KFK

NARUČITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*



NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*

New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER*: **18-0773**

INVESTITOR | *CONTRACTOR*: Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*

Elevation & Plans
South Level 01
Window @ brickwall

VRSTA PROJEKTA *PROJECT TYPE*: EWS 05

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER*			INDEX | *REVISION*
NWS-KFK- EWS05-XX-DR-EP-5001			**01**
CRTAO *DRAWN BY*	EAF/MM		05.04.2019
KONTROLIRAO *CHECKED BY*	-		-
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:25	LIST *SHEET* -

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STATUS NACRTA | *DRAWING STATUS*

A ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*

B ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*

C ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

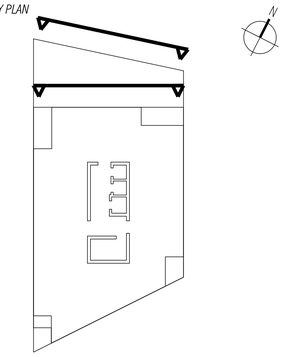
POTPIS *SIGNATURE* | NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
05	Restrictor added Level 02- 04	29.04.2019
04	Duct positions updated	15.02.2019
03	BMU added & EWS02 updated	05.02.2019
02	Vent restrictor pos. updated	19.12.2018
01	updated acc. to comments	29.11.2018

KFK

NARUČITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*



NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*

New Wakefield Street

Manchester

BROJ PROJEKTA *JOB NUMBER*: **18-0773**

INVESTITOR | *CONTRACTOR*: Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*

Elevation North Level 02-16

VRSTA PROJEKTA *PROJECT TYPE*: EWS 01 / EWS 02

PROJEKTANT | *CHIEF DESIGNER*

LEGEND

- vision glass
- vision glass with frit
- alu panel solid
- alu panel perforated
- alu fin
- recessed channel
- recessed channel soffit
- recessed channel parapet
- vent with restrictor 70°
- vent with restrictor 30°
- lockable handle @ vent
- BMU recessed channel
- GL01 / GL01a
- GL02
- GL03 / GL03a
- GL04
- GL07 / GL07a
- GL08
- GL09
- GL10
- GL12

Elevation "NORTH" - M 1:50 | EWS01 & EWS02 / L05 - L16

Elevation "NORTH" - M 1:50 | EWS01 / L02 - L04

BROJ NACRTA | *DRAWING NUMBER*: NWS-KFK- EWSXX-XX-DR-EL-1001

INDEX | *REVISION*: 05

CRTAO *DRAWN BY*	EAF/CB	14.08.2018
KONTROLIRAO *CHECKED BY*	EAF/MM	14.08.2018
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:50
LIST *SHEET*	-	

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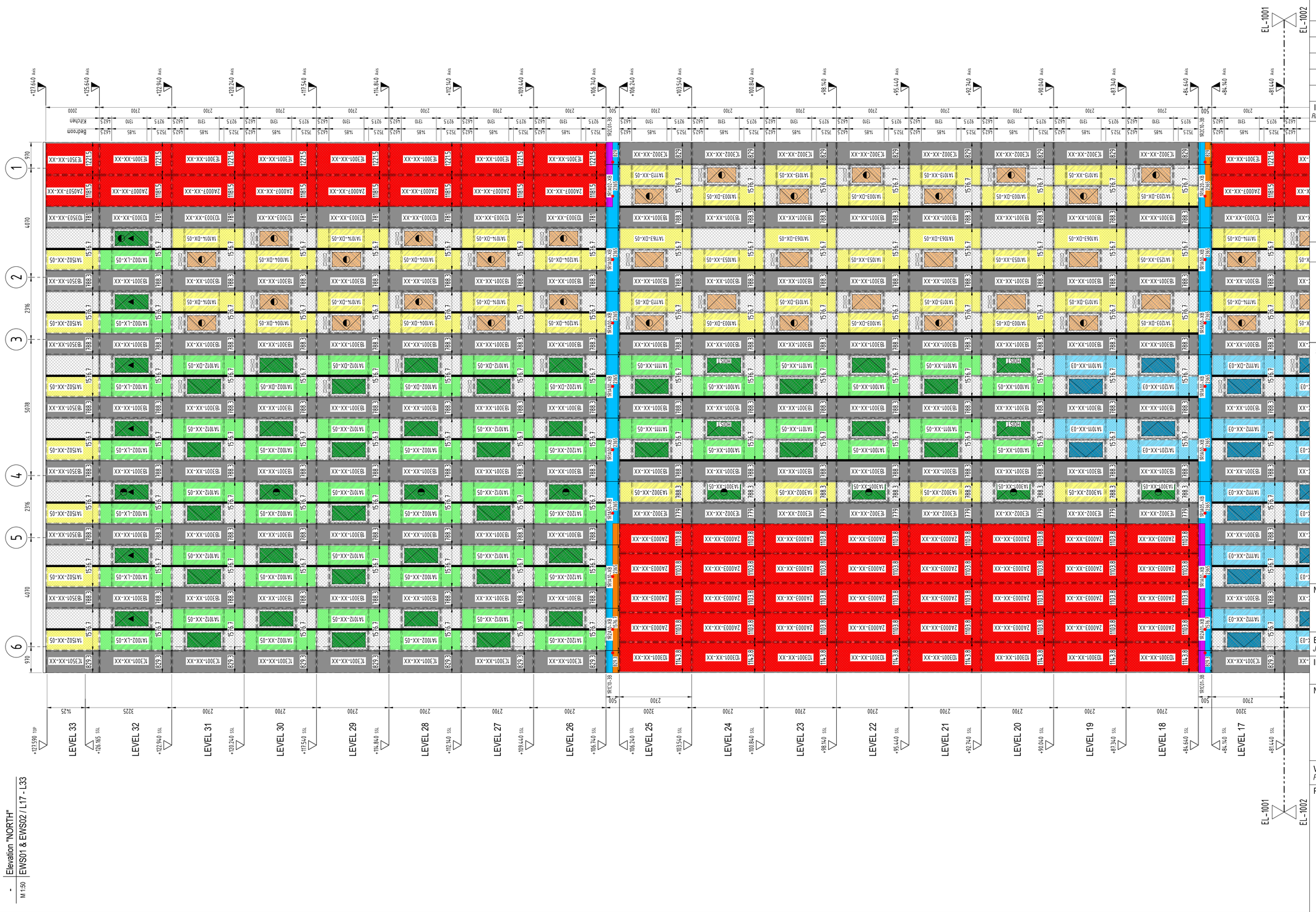


- | Elevation "NORTH"
M 1:50 | EWS01 & EWS02 / L17 - L33

LEGEND

- vision glass
- vision glass with frit
- alu panel solid
- alu panel perforated
- alu fin
- recessed channel
- recessed channel soffit
- recessed channel parapet
- vent with restrictor 70°
- vent with restrictor 30°
- lockable handle @ vent
- BMU recessed channel
- GL01 / GL01a
- GL02
- GL03 / GL03a
- GL04
- GL07 / GL07a
- GL08
- GL09
- GL10
- GL12

STATUS NACRTA | *DRAWING STATUS*

- A ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
- B ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
- C ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

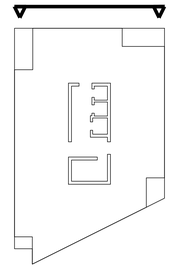
POTPIS *SIGNATURE* | NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
05	hoist pos. added	29.04.2019
04	Duct positions updated	15.02.2019
03	BMU added & EWS02 updated	05.02.2019
02	Vent restrictor pos. updated	19.12.2018
01	updated acc. to comments	29.11.2018

KFK

NARUČITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*



NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*

New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER* **18-0773**

INVESTITOR | *CONTRACTOR*
Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*

Elevation
North
Level 17-33

VRSTA PROJEKTA *PROJECT TYPE* EWS 01 / EWS 02

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER*
NWS-KFK- EWSXX-XX-DR-EL-1002

INDEX | *REVISION* **05**

CRTAO *DRAWN BY*	EAF/CB	14.08.2018
KONTROLIRAO *CHECKED BY*	EAF/MM	14.08.2018
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:50
LIST *SHEET*	-	

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STATUS NACRTA | *DRAWING STATUS*

- **A** ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
- **B** ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
- **C** ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

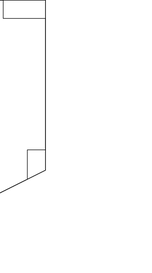
POTPIS *SIGNATURE* | NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE *REVISION DESCRIPTION*	DATUM *DATE*
04	Restrictor added Level 02-04	29.04.2019
03	BMU added & EWS02 updated	05.02.2019
02	Vent restrictor pos. updated	19.12.2018
01	updated acc. to comments	29.11.2018

KFK

NARUČITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*



NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*

New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER* **18-0773**

INVESTITOR | *CONTRACTOR*
Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*

Elevation West Level 02-16

VRSTA PROJEKTA *PROJECT TYPE* EWS 01 / EWS 02

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER* NWS-KFK- EWSXX-XX-DR-EL-1003

INDEX | *REVISION* **04**

CRTAO *DRAWN BY*	EAF/CB	14.08.2018
KONTROLIRAO *CHECKED BY*	EAF/MM	14.08.2018
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:50
LIST *SHEET*	-	

LEGEND

- vision glass
- vision glass with frit
- alu panel solid
- alu panel perforated
- alu fin
- recessed channel
- recessed channel soffit
- recessed channel parapet
- vent with restrictor 70°
- vent with restrictor 30°
- lockable handle @ vent
- BMU recessed channel
- GL01 / GL01a
- GL02
- GL03 / GL03a
- GL04
- GL07 / GL07a
- GL08
- GL09
- GL10
- GL12

Elevation "WEST" - EWS01 & EWS02 / L02 - L16 — M 1:50

LEVEL 17 · LEVEL 16 · LEVEL 15 · LEVEL 14 · LEVEL 13 · LEVEL 12 · LEVEL 11 · LEVEL 10 · LEVEL 09 · LEVEL 08 · LEVEL 07 · LEVEL 06 · LEVEL 05

EL-1003 · EL-1004

Brick wall & substructure by others

Corner EWS03

Soffit to EWS03

EWS03

P:\Projects_2018\P18001\NWS-Manchester\03_DETAIL\ELEVATIONS\NWS-EL-1003-1004-West_24.dwg

STATUS NACRTA | *DRAWING STATUS*

A ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*

B ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*

C ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

POTPIS *SIGNATURE* | NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
04	Louver added Level 32	29.04.2019
03	BMU added & EWS02 updated	05.02.2019
02	Vent restrictor pos. updated	19.12.2018
01	updated acc. to comments	29.11.2018

KFK

NARUČITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*

NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*

New Wakefield Street

Manchester

BROJ PROJEKTA *JOB NUMBER* **18-0773**

INVESTITOR | *CONTRACTOR*

Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*

Elevation West Level 17-33

VRSTA PROJEKTA *PROJECT TYPE* EWS 01 / EWS 02

PROJEKTANT | *CHIEF DESIGNER*

Elevation "WEST" - EWS01 & EWS02 / L17 - L33

M 1:50

LEGEND

- vision glass
- vision glass with frit
- alu panel solid
- alu panel perforated
- alu fin
- recessed channel
- recessed channel soffit
- recessed channel parapet
- vent with restrictor 70°
- vent with restrictor 30°
- lockable handle @ vent
- BMU recessed channel
- GL01 / GL01a
- GL02
- GL03 / GL03a
- GL04
- GL07 / GL07a
- GL08
- GL09
- GL10
- GL12

BROJ NACRTA | *DRAWING NUMBER* NWS-KFK- EWSXX-XX-DR-EL-1004

INDEX | *REVISION* 04

CRTAO *DRAWN BY*	EAF/CB	14.08.2018
KONTROLIRAO *CHECKED BY*	EAF/MM	14.08.2018
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:50
LIST *SHEET*	-	

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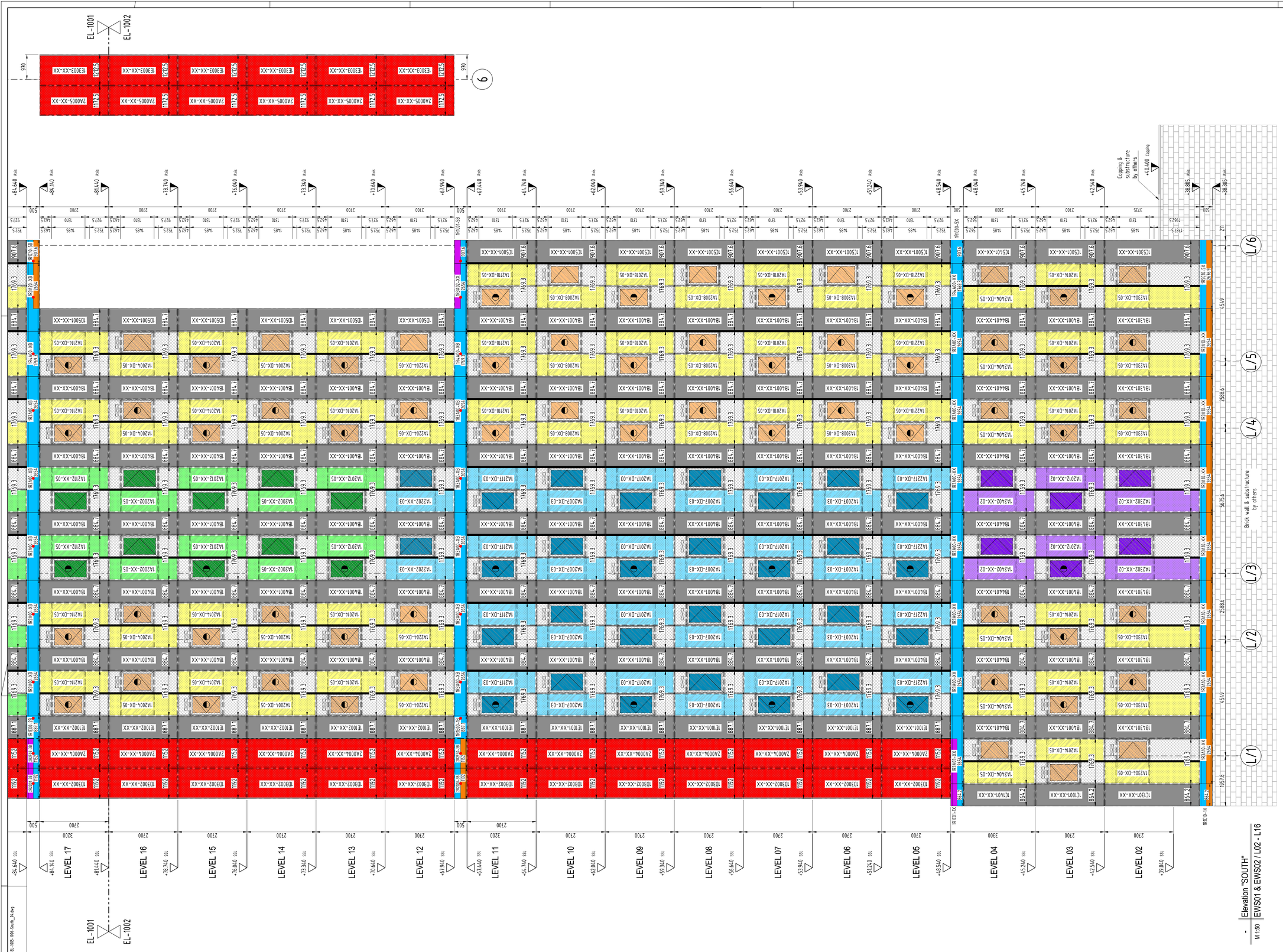

LEGEND

- vision glass
- vision glass with frit
- alu panel solid
- alu panel perforated
- alu fin
- recessed channel
- recessed channel soffit
- recessed channel parapet
- vent with restrictor 70°
- vent with restrictor 30°
- lockable handle @ vent
- BMU recessed channel
- GL01 / GL01a
- GL02
- GL03 / GL03a
- GL04
- GL07 / GL07a
- GL08
- GL09
- GL10
- GL12

STATUS NACRTA | *DRAWING STATUS*

- **A** ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
- **B** ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
- **C** ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

POTPIS *SIGNATURE* | NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE *REVISION DESCRIPTION*	DATUM *DATE*
04	udpated	29.04.2019
03	BMU added & EWS02 updated	05.02.2019
02	Vent restrictor pos. updated	19.12.2018
01	updated acc. to comments	29.11.2018

KFK

NARUČITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*

NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*

New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER*: **18-0773**

INVESTITOR | *CONTRACTOR*: Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*

Elevation South Level 02-16

VRSTA PROJEKTA *PROJECT TYPE*: EWS 01 / EWS 02

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER*: NWS-KFK- EWSXX-XX-DR-EL-1005

INDEX | *REVISION*: **04**

CRTAO *DRAWN BY*	EAF/CB	14.08.2018
KONTROLIRAO *CHECKED BY*	EAF/MM	14.08.2018

FORMAT *PAPER SIZE*: A0 | MJERILO *SCALE*: 1:50 | LIST *SHEET*: -

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STATUS NACRTA | *DRAWING STATUS*

- **A** ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
- **B** ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
- **C** ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

POTPIS *SIGNATURE* | NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
04	Signage Units updated	29.04.2019
03	BMU added & EWS02 updated	05.02.2019
02	Vent restrictor pos. updated	19.12.2018
01	updated acc. to comments	29.11.2018

KFK

NARUČITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*

NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*

New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER*: **18-0773**

INVESTITOR | *CONTRACTOR*: Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*

Elevation South Level 17-33

VRSTA PROJEKTA *PROJECT TYPE*: EWS 01 / EWS 02

PROJEKTANT | *CHIEF DESIGNER*

LEGEND

- vision glass
- vision glass with frit
- alu panel solid
- alu panel perforated
- alu fin
- recessed channel
- recessed channel soffit
- recessed channel parapet
- vent with restrictor 70°
- vent with restrictor 30°
- lockable handle @ vent
- BMU recessed channel
- GL01 / GL01a
- GL02
- GL03 / GL03a
- GL04
- GL07 / GL07a
- GL08
- GL09
- GL10
- GL12

BROJ NACRTA | *DRAWING NUMBER*			INDEX | *REVISION*
NWS-KFK- EWSXX-XX-DR-EL-1006			**04**
CRTAO *DRAWN BY*	EAF/CB		14.08.2018
KONTROLIRAO *CHECKED BY*	EAF/MM		14.08.2018
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:50	LIST *SHEET* -

- Elevation "SOUTH"
- EWS01 & EWS02 / L17 - L33
- M 1:50

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STATUS NACRTA | *DRAWING STATUS*

- **A** ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
- **B** ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
- **C** ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

POTPIS *SIGNATURE* | NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
03	Restrictor added Level 02-04	29.04.2019
02	BMU added & EWS02 updated	05.02.2019
01	updated acc. to comments	29.11.2018

KFK

NARUČITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*

NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*

New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER*: **18-0773**

INVESTITOR | *CONTRACTOR*: Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*

Elevation
East
Level 02-16

VRSTA PROJEKTA *PROJECT TYPE*: EWS 01 / EWS 02

PROJEKTANT | *CHIEF DESIGNER*

LEGEND

- vision glass
- vision glass with frit
- alu panel solid
- alu panel perforated
- alu fin
- recessed channel
- recessed channel soffit
- recessed channel parapet
- vent with restrictor 70°
- vent with restrictor 50°
- lockable handle @ vent
- BMU recessed channel
- GL01 / GL01a
- GL02
- GL03 / GL03a
- GL04
- GL07 / GL07a
- GL08
- GL09
- GL10
- GL12

Elevation "EAST" | EWS01 & EWS02 / L02 - L16
- | M 1:50

BROJ NACRTA | *DRAWING NUMBER*: NWS-KFK- EWSXX-XX-DR-EL-1007

INDEX | *REVISION*: **03**

CRTAO *DRAWN BY*	EAF/CB	14.08.2018
KONTROLIRAO *CHECKED BY*	EAF/MM	14.08.2018

FORMAT *PAPER SIZE*: A0 | MJERILO *SCALE*: 1:50 | LIST *SHEET*: -

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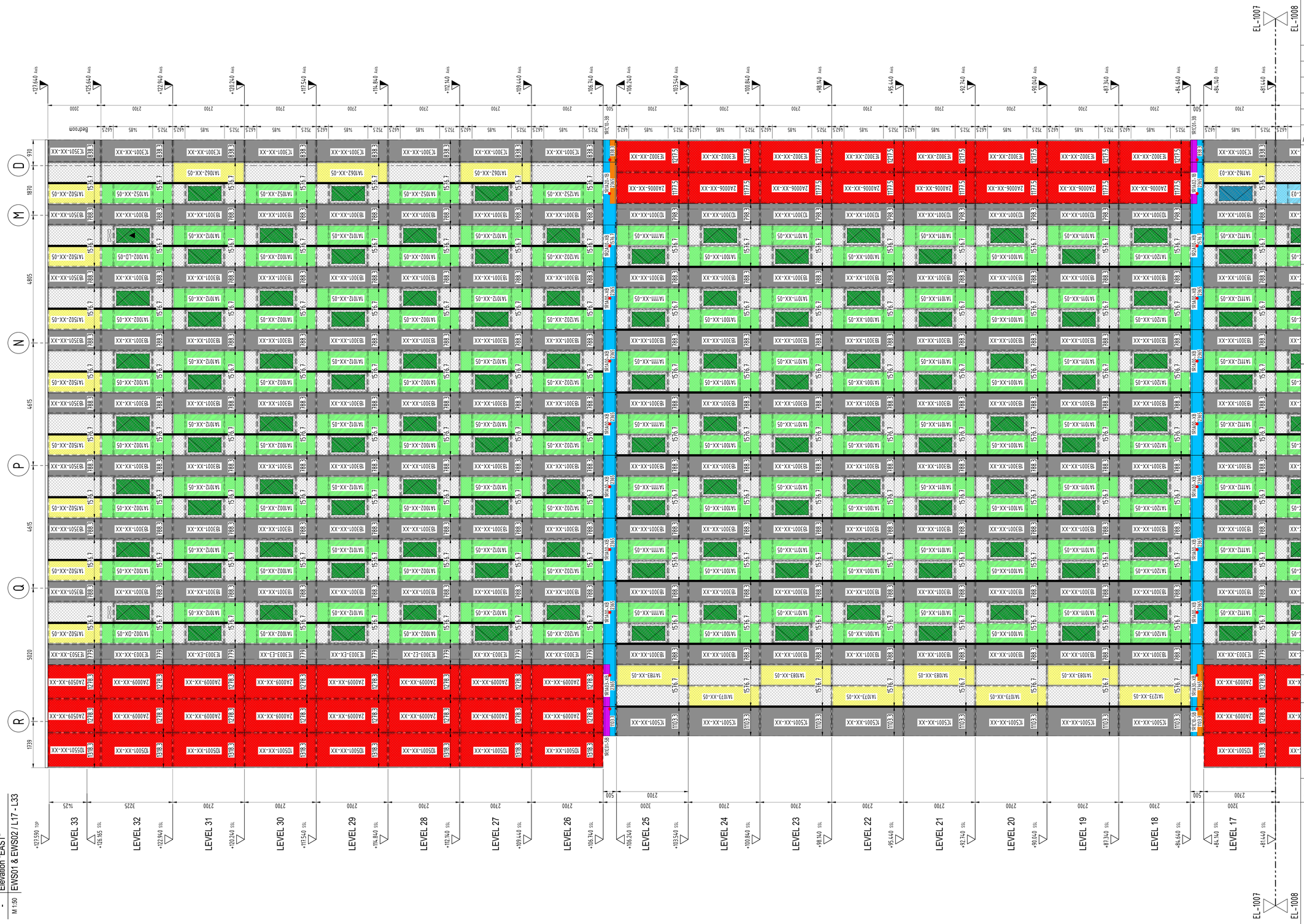


	Elevation "EAST"
-	EWS01 & EWS02 / L17 - L33
M 1:50	

LEGEND

- vision glass
- vision glass with frit
- alu panel solid
- alu panel perforated
- alu fin
- recessed channel
- recessed channel soffit
- recessed channel parapet
- vent with restrictor 70°
- vent with restrictor 50°
- lockable handle @ vent
- BMU recessed channel
- GL01 / GL01a
- GL02
- GL03 / GL03a
- GL04
- GL07 / GL07a
- GL08
- GL09
- GL10
- GL12

STATUS NACRTA | *DRAWING STATUS*

- **A** ☐ ODOBRENO ZA IZVEDBU | *APPROVED FOR CONSTRUCTION*
- **B** ☐ ODOBRENO S NAPOMENAMA | *APPROVED AS NOTED*
- **C** ☐ REVIDIRATI PREMA NAPOMENAMA | *RESUBMIT AS NOTED*

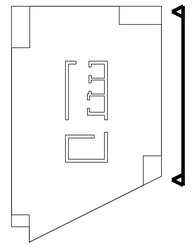
POTPIS *SIGNATURE* | NADNEVAK *DATE*

INDEX *REVISION*	OPIS PROMJENE | *REVISION DESCRIPTION*	DATUM | *DATE*
03	Ducts updated Level 32	29.04.219
02	BMU added & EWS02 updated	05.02.2019
01	updated acc. to comments	29.11.2018

KFK

NARUČITELJ I NOSITELJ PROJEKTA:

SITUACIJA | *KEY PLAN*



NAZIV I LOKACIJA OBJEKTA | *PROJECT NAME, LOCATION*

New Wakefield Street
Manchester

BROJ PROJEKTA *JOB NUMBER* **18-0773**

INVESTITOR | *CONTRACTOR*
Bowner & Kirkland

NAZIV NACRTA | *DRAWING TITLE*

Elevation
East
Level 17-33

VRSTA PROJEKTA *PROJECT TYPE* EWS 01 / EWS 02

PROJEKTANT | *CHIEF DESIGNER*

BROJ NACRTA | *DRAWING NUMBER*
NWS-KFK- EWSXX-XX-DR-EL-1008

INDEX | *REVISION* **03**

CRTAO *DRAWN BY*	EAF/CB		14.08.2018
KONTROLIRAO *CHECKED BY*	EAF/MM		14.08.2018
FORMAT *PAPER SIZE*	A0	MJERILO *SCALE* 1:50	LIST *SHEET* -

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Wakefield, Manchester

Unitised Facade

Glazing Schedule

KFK

29.03.2018

Rev. 05

Preliminary Glass Schedule							
Facade Type	**Glazing Code**		**Glass Build Up**		**Coating**	**Notes**	
Unitised Facade	GL-01	Vision	outer pane	4.4.2 annealed glass			
Acoustic Glazing Type G6			cavity	16mm Argon	Low-E coating on #4		
			inner pane	6mm toughened glass	Ceramic Frit on #6	Heat-Soak-Tested	
Unitised Facade	GL-02	Window	outer pane	6mm annealed glass			
Acoustic Glazing Type G6			cavity	16mm Argon	Low-E coating on #2		
			inner pane	4.4.2 annealed glass			
Unitised Facade	GL-03	Vision	outer pane	4.4.2 SR annealed glass		Acoustic interlayer	
Acoustic Glazing Type G5			cavity	16mm Argon	Low-E coating on #4		
			inner pane	6mm toughened glass	Ceramic Frit on #6	Heat-Soak-Tested	
Unitised Facade	GL-04	Window	outer pane	6mm annealed glass			
Acoustic Glazing Type G5			cavity	16mm Argon	Low-E coating on #2		
			inner pane	4.4.2 SR annealed glass		Acoustic interlayer	
Unitised Facade	GL-05	Vision	outer pane	4.4.2 SR annealed glass		Acoustic interlayer	
Acoustic Glazing Type G4			cavity	16mm Argon	Low-E coating on #4		
			inner pane	6mm toughened glass	Ceramic Frit on #6	Heat-Soak-Tested	
Unitised Facade	GL-06	Window	outer pane	6mm annealed glass			
Acoustic Glazing Type G4			cavity	16mm Argon	Low-E coating on #2		
			inner pane	4.4.2 SR annealed glass		Acoustic interlayer	
Unitised Facade	GL-07	Vision	outer pane	5.5.2 SR annealed glass		Acoustic interlayer	
Acoustic Glazing Type G3			cavity	16mm Argon	Low-E coating on #4		
			inner pane	6mm toughened glass	Ceramic Frit on #6	Heat-Soak-Tested	
Unitised Facade	GL-08	Window	outer pane	6mm annealed glass			
Acoustic Glazing Type G3			cavity	16mm Argon	Low-E coating on #2		
			inner pane	5.5.2 SR annealed glass		Acoustic interlayer	
Unitised Facade	GL-09	Vision	outer pane	6.6.2 SR annealed glass		Acoustic interlayer	
Acoustic Glazing Type G2			cavity	16mm Argon	Low-E coating on #4		
			inner pane	10mm toughened glass	Ceramic Frit on #6	Heat-Soak-Tested	
Unitised Facade	GL-10	Window	outer pane	10mm annealed glass			
Acoustic Glazing Type G2			cavity	16mm Argon	Low-E coating on #2		
			inner pane	6.6.2 SR annealed glass		Acoustic interlayer	
Ground Floor Facade	GL-11	Vision	outer pane	6.6.2 heat strengthened glass			
			cavity	16mm Argon	Low-E coating on #4		
			inner pane	6.6.2 heat strengthened glass			
Unitised Facade	GL-12	Opaque	outer pane	8mm toughened glass	Ceramic Frit on #2	Heat-Soak-Tested	
Recessed Areas	Alternative	Coloured					
Alternative	GL-12A	Opaque	outer pane	8mm heat strengthened glass			
Unitised Facade		Coloured	cavity	12mm Argon			
Recessed Areas			inner pane	6mm toughened glass	Ceramic Frit on #4	Heat-Soak-Tested	

Subject to modifications due to design optimations