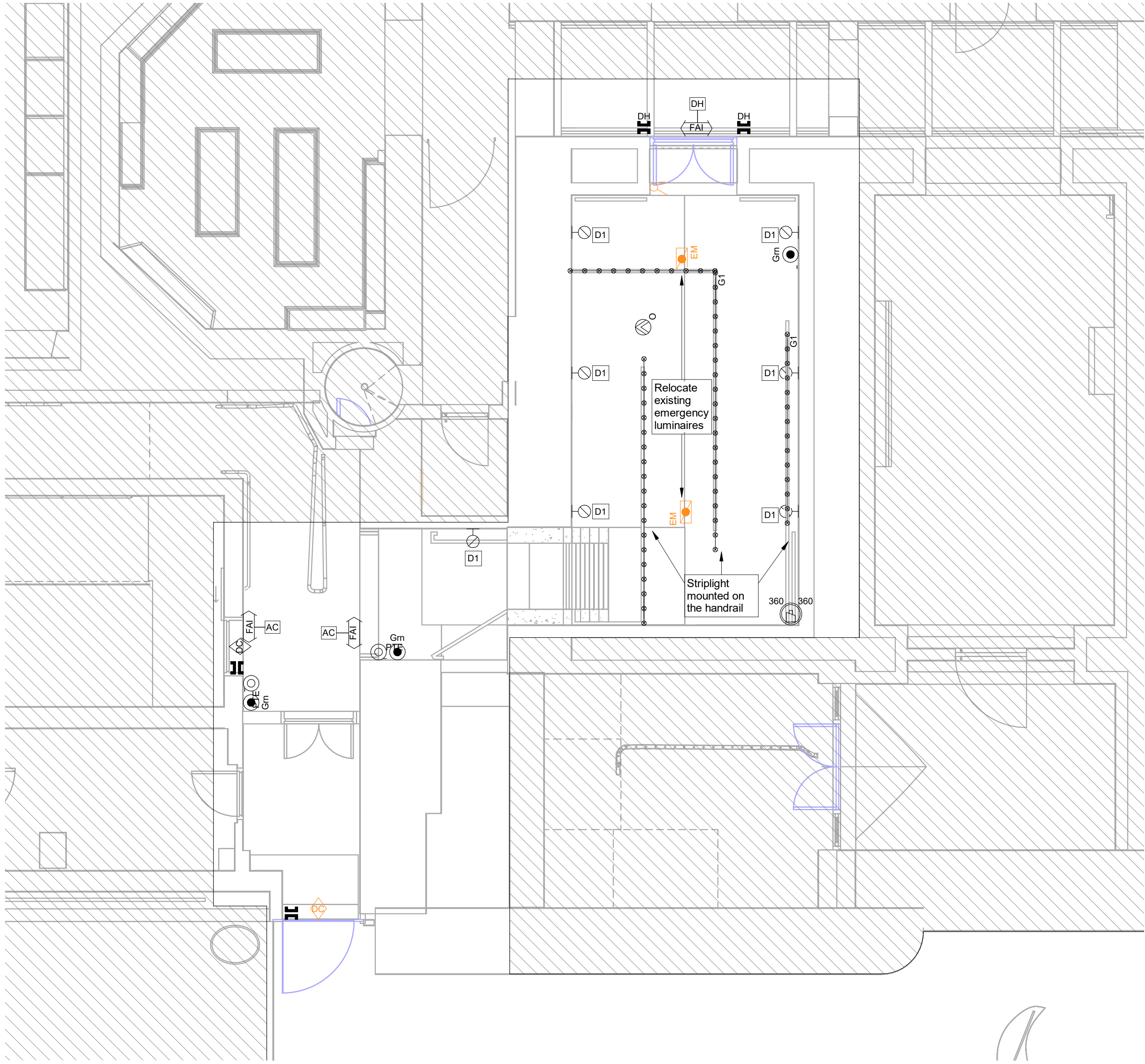
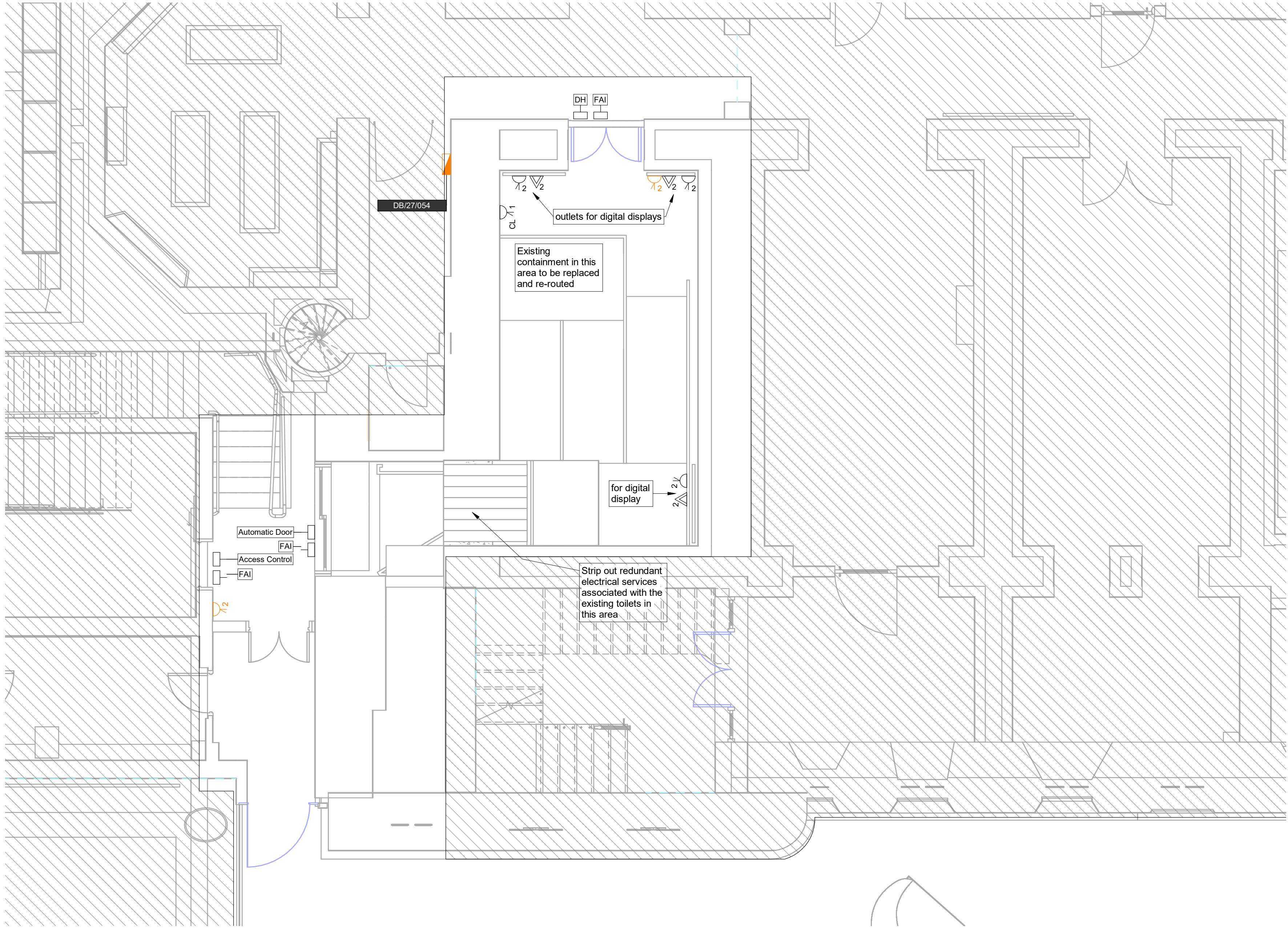


Outlets and Connection Devices		Lighting Systems		Fire, detection and Alarm Systems		Security, Detection and Alarm Systems	
Symbol	Description	Symbol	Description	Symbol	Description	Symbol	Description
	1 gang switched socket outlet 13A BS 1363 unless otherwise annotated		600x600 modular luminaire non-emergency (REF denotes reference corresponding to luminaire schedule. Layout symbol to representative of geometry)		Smoke detector (optical)		Card reader (swipe)
	2 gang switched socket outlet (13A BS 1363 unless otherwise annotated)		Linear surface/recessed/suspended non-emergency (REF denotes reference corresponding to luminaire schedule)		Beam detection transmitter		Magnetic detent (mag-lock / hold back)
	2 gang switched socket outlet with USB (USB quantity to be defined in legend)		Floor/ceiling luminaire non-emergency (REF denotes reference corresponding to luminaire schedule)		Beam detection receiver		Access control door contact, "door force" / "door held"
	Fused connection unit unswitched		Wall mounted luminaire non-emergency (REF denotes reference corresponding to luminaire schedule)		Bell sounder		Camera, 360°, type reference 'Nn', reference 'Xx', internal
	Floor box multi-compartment (n denotes number reference for further description of contents in legend)		Illuminated exit sign integral emergency (arrow(s) denotes exit sign direction)		Fire alarm interface		Motion sensor directional infrared
	Commando Socket		Lighting Control Panel		Emergency voice communication system outstation		Break-glass door release button
	Isolator						Push button to Exit

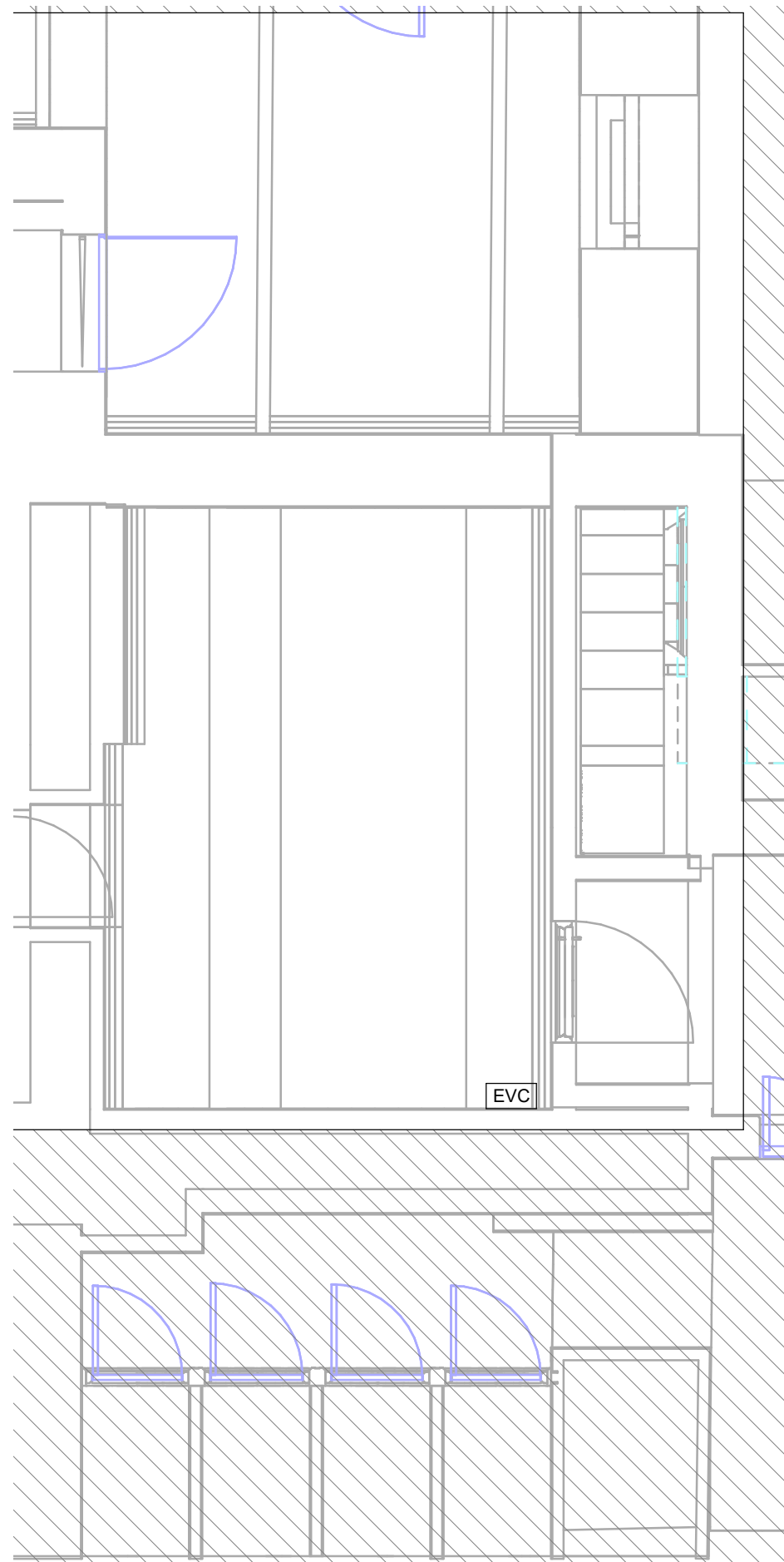
Existing Retained Services

Existing Strip-Out Services



1 XX - B1 - Cellar - Existing - Combined Electrical Systems
1 : 50

2 XX - B1 - Cellar - Combined Electrical Systems Ceiling Plan
1 : 50



4 XX - B1 - Area 6 Lobby - Combined Electrical Systems Ceiling Plan
1 : 50

P03	Stage 3 Issue	TA	LG	BK	19/05/23
P02	Stage 3 WIP Issue	TA	LG	BK	28/04/23
P01	Stage 3 WIP Issue	TA	LG	BK	18/04/23

Index	Description	Original	Revised	Authorised	Date
-------	-------------	----------	---------	------------	------

REVISIONS:

HOARE LEA	
ARCHITECT: Donald Insall Associates	
CLIENT: The University of Manchester	
PROJECT TITLE: John Rylands Research Institute & Library	
DRAWING TITLE: Combined Electrical Services Layout Original Library - Cellar Floor	

Stage 3		
PERSON RESPONSIBLE FOR:		
Design: TA	Review: LG	Authorising Issue: BK
Project No: 04/06115	Date: 04/13/23	Scale @ A0: 1 : 50
DRAWING NUMBER: JRL-HLEA-ZZ-01B-D60-E-3001		Status: Rev: S4 P03

This drawing shall not be scaled.
Work from the dimensions shown in the drawing or given in relevant specifications

INCLUDE ALLOWANCE FOR RE-ROUTING OF 2nd DOMESTIC WATER PIPEWORK IN THIS LOCATION. EXACT ROUTING TBC SUBJECT TO CONTRACTOR INTRUSIVE SURVEYS.

ACCESS TO EXISTING TRENCH TO BE RETAINED/PROVIDED TO FACILITATE FUTURE PIPEWORK MAINTENANCE/REPLACEMENT.

WHERE CELLAR IS TO BE DEVELOPED IN FUTURE, ALLOWANCE TO BE INCLUDED FOR RE-PROVIDING OF ALL MECHANICAL AND ELECTRICAL SERVICES ROUTING DOWN THIS CORRIDOR. PROVIDE AS NEW AND RELOCATE AT HIGHER LEVEL TO FACILITATE HEAD HEIGHT. NOT CURRENTLY INCLUDED IN SCOPE OF PROJECT.

ACCESS HATCH TO BE MOUNTED IN WALL TO ALLOW ACCESS TO PIPEWORK ROUTED BENEATH RAMP.

CONNECT TO EXISTING PIPEWORK IN TRENCH BELOW RAMP EXACT LEVELS TBC BY CONTRACTOR INVASIVE SURVEY

INCLUDE FOR STRIPPING OUT AND CAPPING OF DOMESTIC HOT WATER AND ABOVE GROUND DRAINAGE ASSOCIATED WITH THE TOILET AND WHB BEING REMOVED ABOVE THIS SPACE.

EXISTING PIPEWORK TO BE STRIPPED OUT AND NEW PIPEWORK TO BE RE-ROUTED BELOW NEW RAMP INTO EXISTING TRENCH. CONTRACTOR TO INCLUDE FOR PIPE-FREEZE METHODOLOGY TO AVOID DRAIN DOWN OF HERITAGE SYSTEMS.

AREA NOT INCLUDED IN SCOPE AT PRESENT. IF DESIGN IS PROGRESSSED NEW HVAC PLANT WILL BE REQUIRED TO FACILITATE VENTILATION, HEATING AND COOLING TO EACH SPACE. INDICATIVE AHU DUCT AND LOUVRE POSITIONS SHOWN FOR LBC PURPOSES. THESE ARE SUBJECT TO CHANGE DEPENDING ON THE FINAL DESIGN.

INDICATIVE LOUVRES REQUIRING 0.24m² LOUVRE AREA BASED ON 75% FREE AREA ASSUMPTION, EQUATING TO 0.18m² FREE AREA. ARCHITECT TO CONFIRM LOUVRE SPECIFICATION. DUCT PLENUM TO BE FULLY WEATHER RATED FROM STAINLESS STEEL COMPLETE WITH FIXED CONNECTION TO DRAIN.

NEW BELOW GROUND DRAIN CONNECTIONS REQUIRED TO FACILITATE SANITARYWARE, HUMIDIFIER, LOUVRE PLENUMS & AHU DRAINAGE WHERE INCLUDED IN SCOPE.

SHOULD CELLAR DESIGN BE PROGRESSSED, FURTHER CONSIDERATION TO BE MADE FOR USE OF DOOR TRANSFER GRILLES TO VENTILATE THIS SPACE.

CDM Regulations:

In addition to any information included in this drawing or the model from which it is derived, refer also to the project CDM Risk Register for information on residual risks.

General Notes:

- The drawing does not necessarily show all the information needed to interpret the design intent or the construction details.
- The drawing contains information from more than one source and must be read in conjunction with all relevant specifications.
- Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention.

Project Notes:

- This drawing shows design intent only and is subject to coordination by the contractor and the preparation of installation detail drawings.
- Contractor to allow for all transitions and transformation ductwork pieces in addition to all set up and set downs as appropriate to fully co-ordinate ductwork system with the building and services.
- All galvanneal steel ductwork to be in accordance with BSES DW/144.
- Provide access doors/hatches in accordance with DW144 and the Hoare Lea Specification, to facilitate access and cleaning of the duct systems. Where possible, locate dampers in proximity to one another to share a common access door and minimise ceiling void access. Where possible, locate access doors within easily accessible areas such as core areas and risers.
- Access panels to be provided to facilitate access and maintenance to all items of equipment and fire dampers.
- The contractor shall refer to architects' drawings for details of fire compartmentation. Smoke and fire dampers shall be provided wherever ductwork crosses fire compartments.
- Multi-leaf opposed blade VCDs to be provided on every grille/diffuser and sub-branch ductwork.
- Locate VCDs in accordance with manufacturer requirements, set back from diffusers, grilles and bellmouths.
- Flexible connections shall not be used, all diffusers/grilles.
- All penetrations of the structure shall be fitted with metal sleeves. At fire barriers the sleeves shall be suitably packed to maintain the integrity of the barrier.
- Refrigerant systems to be designed, sized and installed by refrigerant specialist. Refrigerant tray sizes on drawings are indicative, final sizes TBC by refrigerant specialist.
- All ductwork and pipework to be insulated in accordance with Hoare Lea Specification.
- All external services to be weather proofed in accordance with Hoare Lea Specification. All External AHUs and ductwork to be equipped with a pitched roof to facilitate with water run-off.
- Condensate drainage to be provided to all items of equipment as required, routing back to the nearest stack location. Refer to specification for further details. To be further developed by the contractor.
- AC condensate drainage to route back to nearest SVP via a waterless trap arrangement.
- Refer to Acoustic Report for further details relating to acoustic linings and other measures to be incorporated in the design.
- These Stage 3 drawings identify major services routes and penetrations to facilitate structural/architectural detailing of penetrations. It is noted that various additional smaller penetrations will be required to facilitate routing of smaller services not detailed on these drawings.

Ventilation Systems Colour Scheme

- Exhaust
- Extract
- Intake
- Supply
- Fire Rated

Mechanical Pipework Systems Colour Scheme

- Low Temperature Hot Water Flow (60/40)
- Low Temperature Hot Water Return (60/40)
- BCWS
- Above Ground Drainage
- Indicative Refrigerant Route

Abbreviations

- SD Supply Diffuser
- ED Exhaust Duct
- VCD Volume Control Damper
- FD Fire Damper
- ODU Overdoor Heater
- HB Heater Battery

P03	Stage 3 Issue	TV	BK	BK	19/05/23
P02	Stage 2 - Draft Issue	TV	BK	BK	28/04/23
P01	Stage 3 WSP Issue	TV	BK	BK	14/04/23

Rev	Description	Original	Revised	Author	Date
-----	-------------	----------	---------	--------	------

REVISIONS:

HOARE LEA 

ARCHITECT:
Donald Inall Associates

CLIENT:
The University of Manchester

PROJECT TITLE:
John Rylands Research Institute & Library

DRAWING TITLE:
Combined Mechanical Services Layout
Original Library - Cellar Floor

Stage 3

PERSON RESPONSIBLE FOR:

Design:	Review:	Authorising Issue:
TV	BK	BK

Project No:	Date:	Scale @ A0:
04/06115	14/04/23	As Indicated

DRAWING NUMBER:	Status:	Rev:
JRL-HLEA-ZZ-01B-D60-M-3001	S4	P03

Existing Retained Services

Existing Strip-Out Services



CDM Regulations:
In addition to any information included in this drawing or the model from which it is derived, refer also to the project CDM Risk Register for information on residual risks.

General Notes:

- The drawing does not necessarily show all the information needed to interpret the design intent or the construction details.
- The drawing contains information from more than one source and must be read in conjunction with all relevant specifications.
- Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention.

Project Notes:

1. This drawing shows design intent only and is subject to coordination by the contractor and the preparation of installation detail drawings.
2. This drawing shall be read in conjunction with all other relevant drawings and specifications.
3. Do not scale from this drawing.
4. All dimensions are in mm unless otherwise stated.
5. This installation shall conform to all relevant statutory regulations and standards.
6. The electrical installation shall be in accordance with BS7671 and latest amendments.

P03	Stage 3 Issue	TA	LG	BK	19/05/23
P02	Stage 3 WIP Issue	TA	LG	BK	28/04/23
P01	Stage 3 WIP Issue	TA	LG	BK	18/04/23
Index	Description	Designed	Reviewed	Authorised	Date

REVISIONS:

HOARE LEA (H.)

ARCHITECT:
Donald Insall Associates

CLIENT:
The University of Manchester

PROJECT TITLE:
John Rylands Research Institute & Library

DRAWING TITLE:
Combined Electrical Services Layout
Ground Floor

Stage 3

PERSON RESPONSIBLE FOR:			
Design: TA	Review: LG	Authorising Issue: BK	
Project No: 04/06115	Date: 04/12/23	Scale @ A0: 1 : 50	
DRAWING NUMBER:			Status: Rev:
JRL-HLEA-ZZ-10A-D60-E-3001			S4 P03

Outlets and Connection Devices	
Symbol	Description
	1 gang switched socket outlet 13A BS 1363 unless otherwise annotated)
	2 gang switched socket outlet (13A BS 1363 unless otherwise annotated)
	2 gang switched socket outlet with USB (USB quantity to be defined in legend)
	Fused connection unit unswitched
	Floor box multi-compartment (n denotes number reference for further description of contents in legend)
 CS	Commando Socket
	Isolator

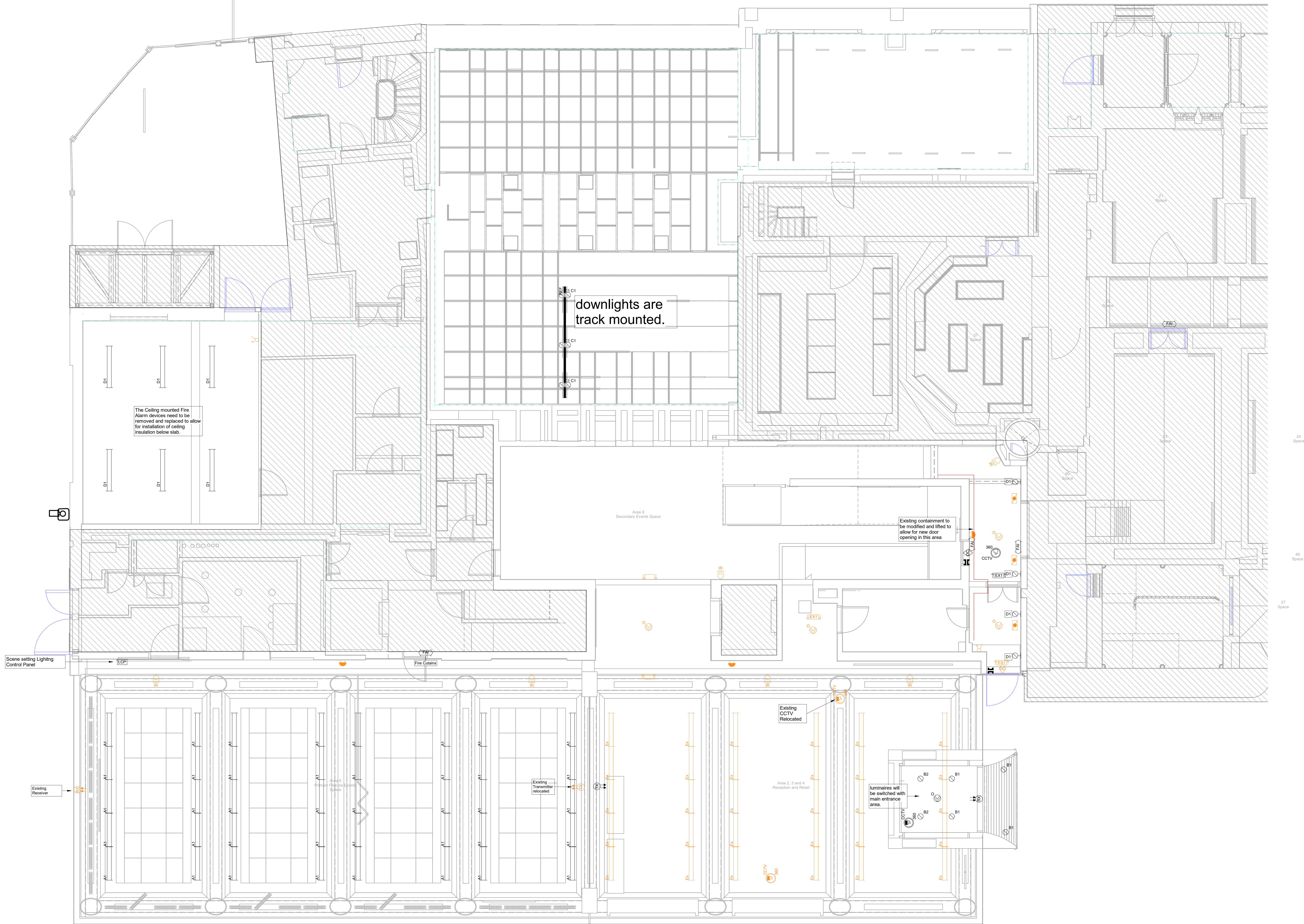
Lighting Systems	
Symbol	Description
	600x600 modular luminaire non-emergency (REF denotes reference corresponding to luminaire schedule. Layout symbol to representative of geometry.)
	Linear surface/recessed/suspended non-emergency (REF denotes reference corresponding to luminaire schedule)
	Floor/ceiling luminaire non-emergency (REF denotes reference corresponding to luminaire schedule)
	Wall mounted luminaire non-emergency (REF denotes reference corresponding to luminaire schedule)
	Illuminated exit sign integral emergency (arrow(s) denotes exit sign direction)
	Lighting Control Panel

Fire, detection and Alarm Systems	
Symbol	Description
	Smoke detector (optical)
	Beam detection transmitter
	Beam detection receiver
	Bell sounder
	Fire alarm interface
	Emergency voice communication system outstation

Security, Detection and Alarm Systems	
Symbol	Description
	Card reader (swipe)
	Magnetic detent (mag-lock / hold back)
	Access control door contact, "door force" / "door held"
	Camera, 360°, type reference "Nn", reference "Xx", internal
	Motion sensor directional infrared
	Break-glass door release button
	Push button to Exit

 Existing Retained Services

 Existing Strip-Out Services



CDM Regulations:
In addition to any information included in this drawing or the model from which it is derived, refer also to the project CDM Risk Register for information on residual risks.

General Notes:

- The drawing does not necessarily show all the information needed to interpret the design intent or the construction details.
- The drawing contains information from more than one source and must be read in conjunction with all relevant specifications.
- Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention.

Project Notes:

1. This drawing shows design intent only and is subject to coordination by the contractor and the preparation of installation detail drawings.
2. This drawing shall be read in conjunction with all other relevant drawings and specifications.
3. Do not scale from this drawing.
4. All dimensions are in mm unless otherwise stated.
5. This installation shall conform to all relevant statutory regulations and standards.
6. The electrical installation shall be in accordance with BS7671 and latest amendments.

P03	Stage 3 Issue	TA	LG	BK	19/05/23
P02	Stage 3 WIP Issue	TA	LG	BK	28/04/23
P01	Stage 3 WIP Issue	TA	LG	BK	18/04/23
Index	Description	Designed	Reviewed	Authorised	Date

REVISIONS:

HOARE LEA 

ARCHITECT:
Donald Insall Associates

CLIENT:
The University of Manchester

PROJECT TITLE:
John Rylands Research Institute & Library

DRAWING TITLE:
Combined Electrical Services RCP Layout
Ground Floor

Stage 3

PERSON RESPONSIBLE FOR:

Design:	Review
---------	--------

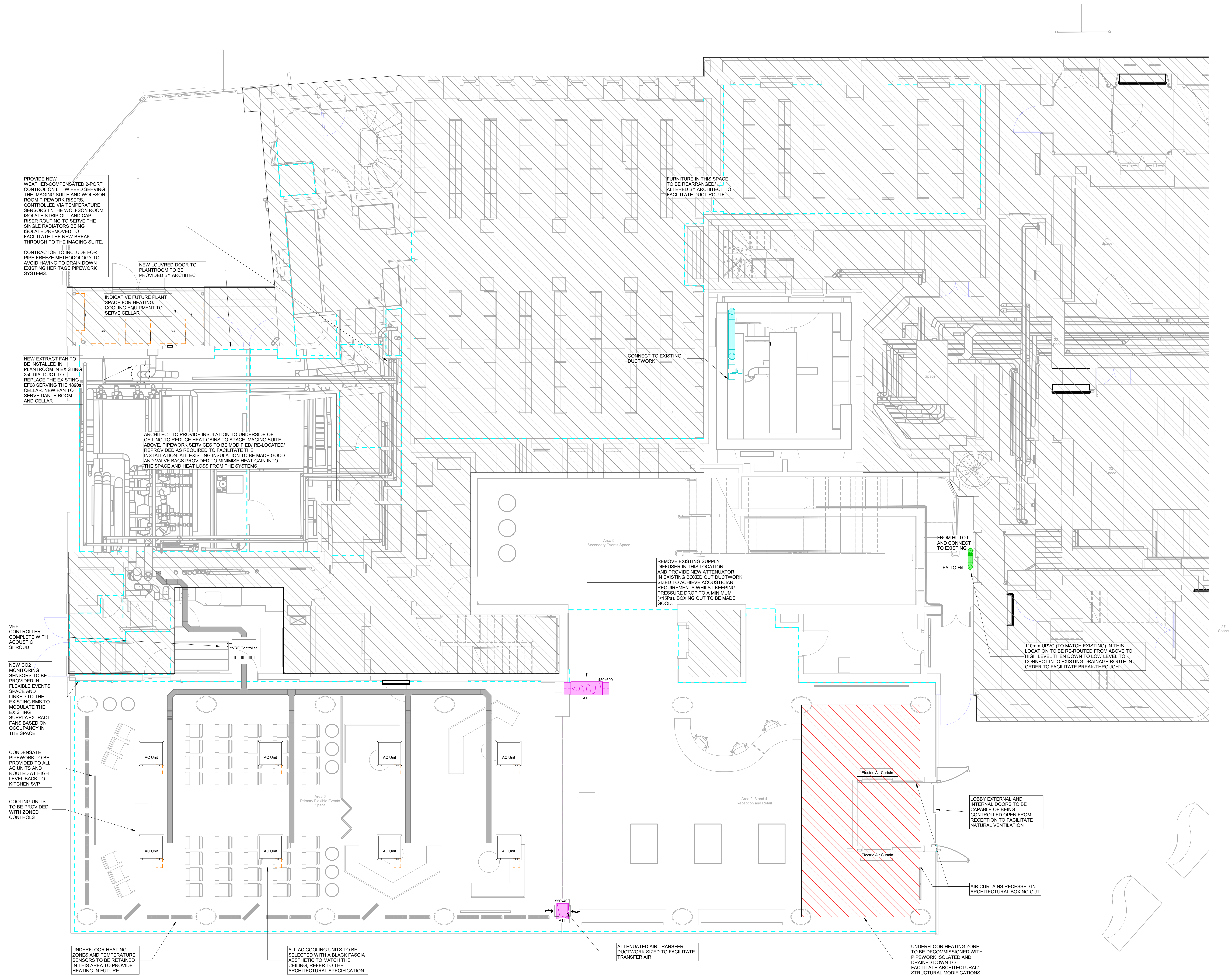
TA	LG
----	----

Project No:	Date:
-------------	-------

04/06115	04/13.
----------	--------

DRAWING NUMBER:

IRL ULEA 33 10A D40



CDM Regulations:

In addition to any information included in this drawing or the model from which it is derived, refer also to the project CDM Risk Register for information on residual risks.

General Notes

- The drawing does not necessarily show all the information needed to interpret the design intent or the construction details.
- The drawing contains information from more than one source and must be read in conjunction with all relevant specifications.
- Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention.

Project Notes:

1. This drawing shows design intent only and is subject to coordination by the contractor and the preparation of installation detail drawings.
 2. Contractor to provide all transitions and transitioned ductwork pieces in addition to all set up and set downs as well as all necessary hardware for the ductwork system with the building's services.
 3. All galvanized steel ductwork to be in accordance with SMPS.
 4. Provide access doors/hatches in accordance with DIV14 and provide access doors/hatches in accordance with the cleaning of the duct systems. Where possible, locate dampers in proximity to one another to share a common access door/hatch. Where possible, locate access doors within easily accessible areas such as core areas and risers.
 5. Access panels and doors to be installed to facilitate access and maintenance to all items of equipment and fire dampers.
 6. Provide details of fire dampers and fire damper connections, details of fire compartmentation. Smoke and fire dampers shall be provided wherever ductwork crosses fire compartments.
 7. Multi-leaf opposed blade VDCs to be provided on every grille/diffuser and sub-brand ductwork.
 8. Locate VDCs in accessible areas to facilitate inspection, requirements, select back from diffusers, grilles and registers.
 9. Flexible connections shall not be used, all diffusers/grilles shall be rigid.
 10. All penetrations of the structure shall be fitted with metal plates and gaskets and shall be sealed and properly packed to maintain the integrity of the barrier.
 11. All penetrations of the structure shall be sealed and fitted by refrigerant specialist. Refrigerant tray seals on drawings are indicative, final sizes TBC by refrigerant specialist.
 12. All penetrations of the structure shall be sealed in accordance with HSE and LSC Specification.
 13. All External Services to be weather proofed in accordance with the LSC Specification.
 14. All External Services to be installed in accordance with All External AHUs and ductwork to be equipped with a pitch roof to prevent rain water ingress.
 15. Condensate drainage to be provided to all items of equipment as required, routing back to the nearest stack or sump. Refer to Section 3.1 for further details. To be further developed by the contractor.
 16. AC condensate drainage to route back to nearest SVP or sump.
 17. Refer to Acoustic Report for further details relating to thermal, lining and other details to be incorporated in the design.
- This Design Stage 3 drawings identify major services routes and penetrations and indicate the structure and location of detailing of penetrations. It is noted that various additional details may be required to complete the design, including of smaller services not detailed on these drawings.

Ventilation Systems Colour Scheme

-  Exhaust
 Extract
 Intake
 Supply
 Fire Rated

Mechanical Pipework Systems Colour Schemes

-  Low Temperature Hot Water Flow 60/40
 Low Temperature Hot Water Return 60/40
 BCWS
 Above Ground Drainage
 Indicative Refrigerant Route

Abbreviations

- | | |
|-----|-----------------|
| SD | Supply Diffuser |
| EG | Extract Grille |
| VCD | Volume Control |
| FD | Fire Damper |
| ODU | Overdoor Heater |
| HB | Heater Battery |

P03	Stage 3 Issue	TV	BK	BK	19/05/23
P02	Stage 3 - Draft Issue	TV	BK	BK	28/04/23
P01	Stage 3 WIP Issue	TV	BK	BK	14/04/23
Index	Description	Designed	Reviewed	Authorised	Date

REVISIONS:

HOARE LEA (H.)

ARCHITECT:
Donald Insall Associates

CLIENT:
The University of Manchester

PROJECT TITLE:
John Rylands Research Institute & Library

DRAWING TITLE:
Combined Mechanical Services Layout
Ground Floor

Stage 3

PERSON RESPONSIBLE FOR:			
Design: TV	Review: BK	Authorising Issue: BK	
Project No: 04/06115	Date: 21/04/23	Scale @ A0: As indicated	
DRAWING NUMBER:			Status: Rev:
JRL-HLEA-ZZ-10A-D60-M-3001			S4 P03

This drawing shall not be scaled.
Work from the dimensions shown in the drawing or given in relevant specifications

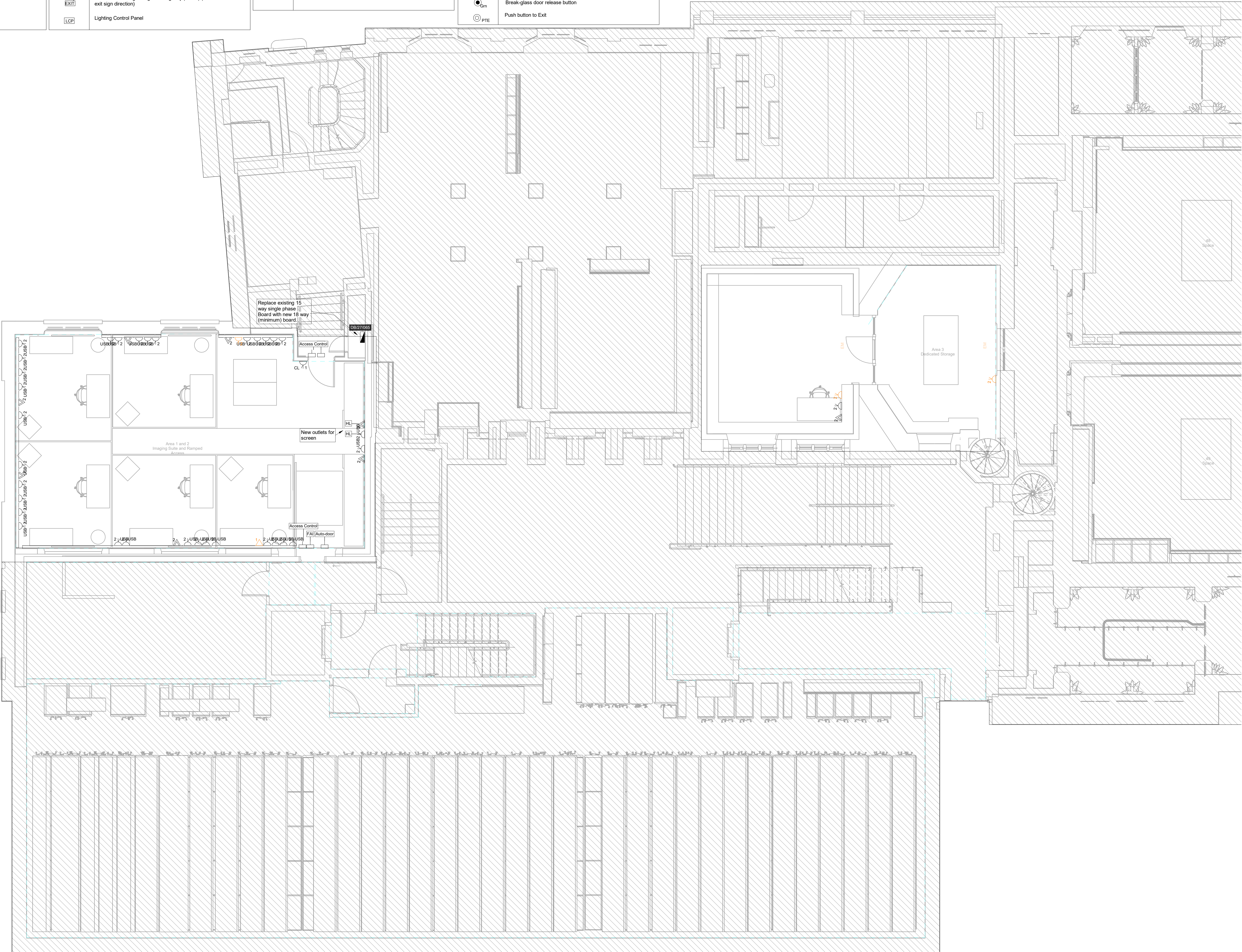
Outlets and Connection Devices	
Symbol	Description
	1 gang switched socket outlet 13A BS 1363 unless otherwise annotated)
	2 gang switched socket outlet (13A BS 1363 unless otherwise annotated)
	2 gang switched socket outlet with USB (USB quantity to be defined in legend)
	Fused connection unit unswitched
	Floor box multi-compartment (n denotes number reference for further description of contents in legend)
	Commando Socket
	Isolator

Lighting Systems	
Symbol	Description
	600x600 modular luminaire non-emergency (REF denotes reference corresponding to luminaire schedule. Layout symbol to representative of geometry).
	Linear surface/recessed/suspended non-emergency (REF denotes reference corresponding to luminaire schedule)
	Floor/ceiling luminaire non-emergency (REF denotes reference corresponding to luminaire schedule)
	Wall mounted luminaire non-emergency (REF denotes reference corresponding to luminaire schedule)
	Illuminated exit sign integral emergency (arrow(s) denotes exit sign direction)
	Lighting Control Panel

Fire, detection and Alarm Systems	
Symbol	Description
	Smoke detector (optical)
	Beam detection transmitter
	Beam detection receiver
	Bell sounder
	Fire alarm interface
	Emergency voice communication system outstation

Security, Detection and Alarm Systems	
Symbol	Description
	Card reader (swipe)
	Magnetic detent (mag-lock / hold back)
	Access control door contact, "door force" / "door held"
	Camera, 360°, type reference 'Nn', reference 'Xx', internal
	Motion sensor directional infrared
	Break-glass door release button
	Push button to Exit

- Existing Retained Services
- Existing Strip-Out Services



CDM Regulations:
In addition to any information included in this drawing or the model from which it is derived, refer also to the project CDM Risk Register for information on residual risks.

- General Notes:
- The drawing does not necessarily show all the information needed to interpret the design intent or the construction details.
 - The drawing contains information from more than one source and must be read in conjunction with all relevant specifications.
 - Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention.
- Project Notes:
- This drawing shows design intent only and is subject to coordination by the contractor and the preparation of installation detail drawings.
 - This drawing shall be read in conjunction with all other relevant drawings and specifications.
 - Do not scale from this drawing.
 - All dimensions are in mm unless otherwise stated.
 - This installation shall conform to all relevant statutory regulations and standards.
 - The electrical installation shall be in accordance with BS7671 and latest amendments.

P03	Stage 3 Issue	TA	LG	BK	19/05/23
P02	Stage 3 WIP Issue	TA	LG	BK	28/04/23
P01	Stage 3 WIP Issue	TA	LG	BK	18/04/23

Index	Description	Original	Revised	Author	Date
-------	-------------	----------	---------	--------	------

REVISIONS:

HOARE LEA

ARCHITECT:
Donald Inall Associates

CLIENT:
The University of Manchester

PROJECT TITLE:
John Rylands Research Institute & Library

DRAWING TITLE:
Combined Electrical Services Layout
First Floor

Stage 3

PERSON RESPONSIBLE FOR:		
Design:	Review:	Authorising Issue:
TA	LG	BK
Project No:	Date:	Scale @ A0:
04/06115	04/13/23	1: 50
DRAWING NUMBER:		Status: Rev:
JRL-HLEA-ZZ-20A-D60-E-3001		S4 P03

Lighting Systems	
Symbol	Description
	600x600 modular luminaire non-emergency (REF denotes reference corresponding to luminaire schedule. Layout symbol to representative of geometry.)
	Linear surface/recessed/suspended non-emergency (REF denotes reference corresponding to luminaire schedule)
	Floor/ceiling luminaire non-emergency (REF denotes reference corresponding to luminaire schedule)
	Wall mounted luminaire non-emergency (REF denotes reference corresponding to luminaire schedule)
	Illuminated exit sign integral emergency (arrow(s) denotes exit sign direction)
	Lighting Control Panel

Security, Detection and Alarm Systems	
Symbol	Description
	Card reader (swipe)
	Magnetic detent (mag-lock / hold back)
	Access control door contact, "door force" / "door held"
	Camera, 360°, type reference 'Nn', reference 'Xx', internal
	Motion sensor directional infrared
	Break-glass door release button
	Push button to Exit

Existing Retained Services

Existing Strip-Out Services



CDM Regulations:
In addition to any information included in this drawing or the model from which it is derived, refer also to the project CDM Risk Register for information on residual risks.

- General Notes:**
- The drawing does not necessarily show all the information needed to interpret the design intent or the construction details.
 - The drawing contains information from more than one source and must be read in conjunction with all relevant specifications.
 - Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention.

Project Notes:

1. This drawing shows design intent only and is subject to coordination by the contractor and the preparation of installation detail drawings.
2. This drawing shall be read in conjunction with all other relevant drawings and specifications.
3. Do not scale from this drawing.
4. All dimensions are in mm unless otherwise stated.
5. This installation shall conform to all relevant statutory regulations and standards.
6. The electrical installation shall be in accordance with BS7671 and latest amendments.

P03	Stage 3 Issue	TA	LG	BK	19/05/23
P02	Stage 3 WIP Issue	TA	LG	BK	28/04/23
P01	Stage 3 WIP Issue	TA	LG	BK	18/04/23
Index	Description	Designed	Reviewed	Authorised	Date

REVISIONS:

HOARE LEA 

ARCHITECT:
Donald Insall Associates

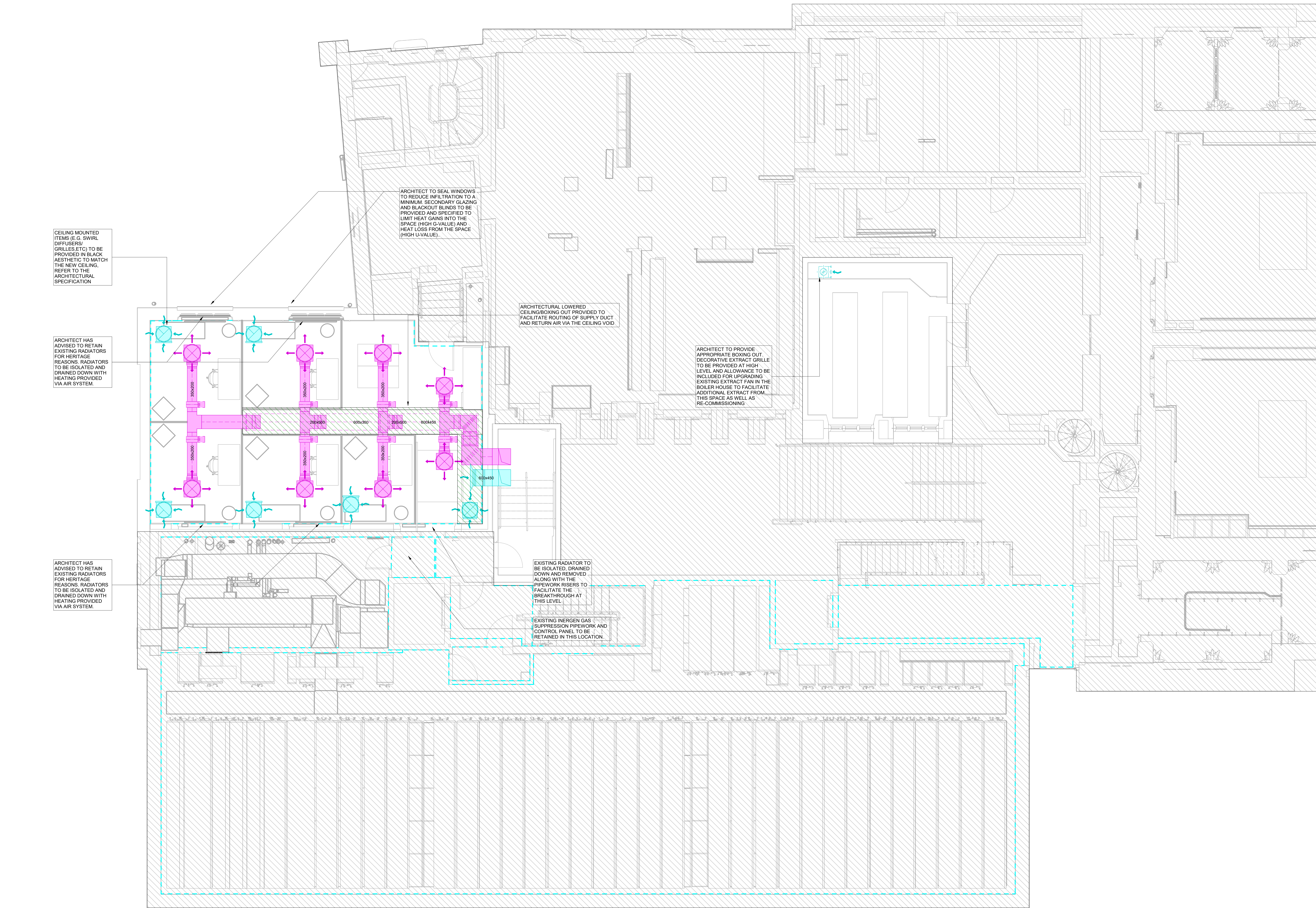
CLIENT:
The University of Manchester

PROJECT TITLE:
John Rylands Research Institute & Library

DRAWING TITLE:
Combined Electrical Services RCP Layout
First Floor

Stage 3

PERSON RESPONSIBLE FOR:			
Design: TA	Review: LG	Authorising Issue: BK	
Project No: 04/06115	Date: 04/13/23	Scale @ A0: 1 : 50	
DRAWING NUMBER:		Status:	Rev:
JRL-HLEA-ZZ-20A-D60-E-3002		S4	P03

**CDM Regulations:**

In addition to any information included in this drawing or the model from which it is derived, refer also to the project CDM Risk Register for information on residual risks.

General Notes:

- The drawing does not necessarily show all the information needed to interpret the design intent or the construction details.
- The drawing contains information from more than one source and must be read in conjunction with all relevant specifications.
- Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention.

Project Notes:

- This drawing shows design intent only and is subject to coordination by the contractor and the preparation of installation detail drawings.
- Contractor to allow for all transitions and transformation ductwork pieces in addition to all set up and set downs as appropriate to fully co-ordinate ductwork system with the building and services.
- All galvanneal steel ductwork to be in accordance with BSES DW/144.
- Provide access doors/hatches in accordance with DW144 and the Hoare Lea Specification, to facilitate access and cleaning of the duct systems. Where possible, locate dampers in proximity to one another to share a common access door and minimise ceiling void access. Where possible, locate access doors within easily accessible areas such as core areas and risers.
- Access panels to be provided to facilitate access and maintenance to all items of equipment and fire dampers.
- The contractor shall refer to architects' drawings for details of fire compartmentation. Smoke and fire dampers shall be provided wherever ductwork crosses fire compartments.
- Multi-leaf opposed blade VCDs to be provided on every grille/diffuser and sub-branch ductwork.
- Locate VCDs in accordance with manufacturer requirements, set back from diffusers, grilles and bellmouths.
- Flexible connections shall not be used, all diffusers/grilles.
- All penetrations of the structure shall be fitted with metal sleeves. At fire barriers the sleeves shall be suitably packed to maintain the integrity of the barrier.
- Refrigerant systems to be designed, sized and installed by refrigerant specialist. Refrigerant tray sizes on drawings are indicative, final sizes TBC by refrigerant specialist.
- All ductwork and pipework to be insulated in accordance with Hoare Lea Specification.
- All external services to be weather proofed in accordance with Hoare Lea Specification. All External AHUs and ductwork to be equipped with a pitched roof to facilitate with water run-off.
- Condensate drainage to be provided to all items of equipment as required, routing back to the nearest stack location. Refer to specification for further details. To be further developed by the contractor.
- AC condensate drainage to route back to nearest SVP via a waterless trap arrangement.
- Refer to Acoustic Report for further details relating to acoustic linings and other measures to be incorporated in the design.
- These Stage 3 drawings identify major services routes and penetrations to facilitate structural/architectural detailing of penetrations. It is noted that various additional smaller penetrations will be required to facilitate routing of smaller services not detailed on these drawings.

**Ventilation Systems
Colour Scheme**

- Exhaust
- Extract
- Intake
- Supply
- Fire Rated

**Mechanical Pipework
Systems Colour Scheme**

- Low Temperature Hot Water Flow 60/40
- Low Temperature Hot Water Return 60/40
- BCWS
- Above Ground Drainage
- Inductive Refrigerant Route

Abbreviations

- SD Supply Diffuser
- CD Extract Grille
- VCD Volume Control Damper
- FD Fire Damper
- ODU Overdoor Heater
- HB Heater Battery

P03	Stage 3 Issue	TV	BK	BK	19/05/23
P02	Stage 2 - Draft Issue	TV	BK	BK	28/04/23
P01	Stage 3 WSP Issue	TV	BK	BK	14/04/23

Issue	Description	Designed	Reviewed	Authorised	Date
-------	-------------	----------	----------	------------	------

REVISIONS:

HOARE LEA

ARCHITECT:
Donald Insaal Associates

CLIENT:
The University of Manchester

PROJECT TITLE:
John Rylands Research Institute & Library

DRAWING TITLE:
Combined Mechanical Services Layout
First Floor

Stage 3**PERSON RESPONSIBLE FOR:**

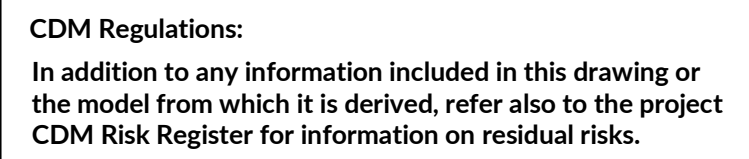
Design:	Review:	Authorising Issue:
TV	BK	BK

Project No:	Date:	Scale @ A0:
04/06115	14/04/23	As Indicated

DRAWING NUMBER:	Status:	Rev:
JRL-HLEA-ZZ-20A-D60-M-3001	S4	P03

Existing Retained Services

Existing Strip-Out Services



General Notes

- The drawing does not necessarily show all the information needed to interpret the design intent or the construction details.
- The drawing contains information from more than one source and must be read in conjunction with all relevant specifications.
- Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention.

Project Notes:

1. This drawing shows design intent only and is subject to coordination by the contractor and the preparation of installation detail drawings.
2. This drawing shall be read in conjunction with all other relevant drawings and specifications.
3. Do not scale from this drawing.
4. All dimensions are in mm unless otherwise stated.
5. This installation shall conform to all relevant statutory regulations and standards.
6. The electrical installation shall be in accordance with BS7671 and latest amendments.

P03	Stage 3 Issue	TA	LG	BK	19/05/23
P02	Stage 3 WIP Issue	TA	LG	BK	28/04/23
P01	Stage 3 WIP Issue	TA	LG	BK	18/04/23
Index	Description	Designed	Engineered	Authorised	Date

REVISIONS:

HOARE LEA 

ARCHITECT:
Donald Insall Associates

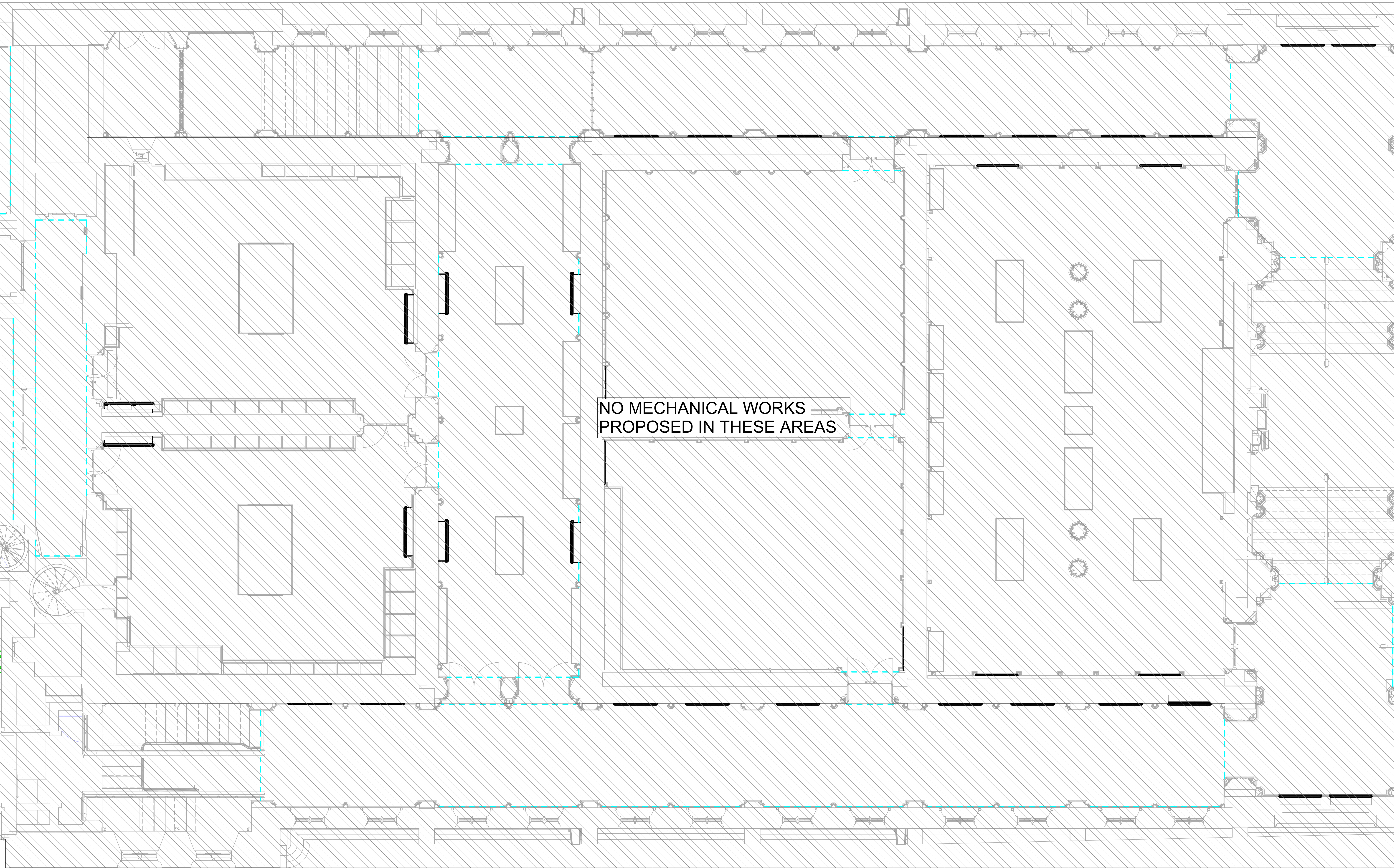
CLIENT:
The University of Manchester

PROJECT TITLE:
John Rylands Research Institute & Library

DRAWING TITLE:
Combined Electrical Services Layout
Original Library - First Floor

Stage 3

PERSON RESPONSIBLE FOR:			
Design: TA	Review: LG	Authorising Issue: BK	
Project No: 04/06115	Date: 04/13/23	Scale @ A0: 1 : 50	
DRAWING NUMBER:		Status:	Rev:
JRL-HLEA-ZZ-20B-D60-E-3001		S4	P03



CDM Regulations:
In addition to any information included in this drawing or the model from which it is derived, refer also to the project CDM Risk Register for information on residual risks.

General Notes:

- The drawing does not necessarily show all the information needed to interpret the design intent or the construction details.
- The drawing contains information from more than one source and must be read in conjunction with all relevant specifications.
- Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention.

Project Notes:

- This drawing shows design intent only and is subject to coordination by the contractor and the preparation of installation detail drawings.
- Contractor to allow for all transitions and transformation ductwork pieces in addition to all set up and set downs as appropriate to fully co-ordinate ductwork system with the building and services.
- All galvanneal steel ductwork to be in accordance with BSES DW/144.
- Provide access doors/hatches in accordance with DW144 and the Hoare Lea Specification, to facilitate access and cleaning of the duct systems. Where possible, locate dampers in proximity to one another to share a common access door and minimise ceiling void access. Where possible, locate access doors within easily accessible areas such as core areas and risers.
- Access panels to be provided to facilitate access and maintenance to all items of equipment and fire dampers.
- The contractor shall refer to architects' drawings for details of fire compartmentation. Smoke and fire dampers shall be provided wherever ductwork crosses fire compartments.
- Multi-leaf opposed blade VCDs to be provided on every grille/diffuser and sub-branch ductwork.
- Locate VCDs in accordance with manufacturer requirements, set back from diffusers, grilles and bellmouths.
- Flexible connections shall not be used, all diffusers/grilles.
- All penetrations of the structure shall be fitted with metal sleeves. At fire barriers the sleeves shall be suitably packed to maintain the integrity of the barrier.
- Refrigerant systems to be designed, sized and installed by refrigerant specialist. Refrigerant tray sizes on drawings are indicative, final sizes TBC by refrigerant specialist.
- All ductwork and pipework to be insulated in accordance with Hoare Lea Specification.
- All external services to be weather proofed in accordance with Hoare Lea Specification. All External AHUs and ductwork to be equipped with a pitched roof to facilitate water run-off.
- Condensate drainage to be provided to all items of equipment as required, routing back to the nearest stack location. Refer to specification for further details. To be further developed by the contractor.
- AC condensate drainage to route back to nearest SVP via a waterless trap arrangement.
- Refer to Acoustic Report for further details relating to acoustic linings and other measures to be incorporated in the design.
- These Stage 3 drawings identify major services routes and penetrations to facilitate structural/architectural detailing of penetrations. It is noted that various additional smaller penetrations will be required to facilitate routing of smaller services not detailed on these drawings.

Ventilation Systems
Colour Scheme

- Exhaust
- Extract
- Inake
- Supply
- Fire Rated

Mechanical Pipework
Systems Colour Scheme

- Low Temperature Hot Water Flow 60/40
- Low Temperature Hot Water Return 60/40
- BCWS
- Above Ground Drainage
- Indicative Refrigerant Route

Abbreviations

- SD Supply Diffuser
- EC Exhaust Grille
- VCD Volume Control Damper
- FD Fire Damper
- ODU Overdoor Heater
- HB Heater Battery

P02	Stage 3 Issue	TV	BK	BK	18/05/23
P01	Stage 3 - Draft Issue	TV	BK	BK	28/04/23

Issue	Description	Original	Revised	Authorised	Date
-------	-------------	----------	---------	------------	------

REVISIONS:



ARCHITECT:
Donald Insall Associates

CLIENT:
The University of Manchester

PROJECT TITLE:
John Rylands Research Institute & Library

DRAWING TITLE:
Combined Mechanical Services Layout
Original Library - First Floor

Stage 3

PERSON RESPONSIBLE FOR:

Design:	Review:	Authorising Issue:
TV	BK	BK

Project No:	Date:	Scale @ A0:
04/06115	04/28/23	As Indicated

DRAWING NUMBER:	Status:	Rev:
JRL-HLEA-ZZ-20B-D60-M-3001	S4	P02

Lighting Systems	
Symbol	Description
	600x600 modular luminaire non-emergency (REF denotes reference corresponding to luminaire schedule. Layout symbol to representative of geometry.)
	Linear surface/ceiling/suspended non-emergency (REF denotes reference corresponding to luminaire schedule)
	Floor/ceiling luminaire non-emergency (REF denotes reference corresponding to luminaire schedule)
	Wall mounted luminaire non-emergency (REF denotes reference corresponding to luminaire schedule)
	Illuminated exit sign integral emergency (arrow(s) denotes exit sign direction)
	Lighting Control Panel

Security, Detection and Alarm Systems	
Symbol	Description
	Card reader (swipe)
	Magnetic detent (mag-lock / hold back)
	Access control door contact, "door force" / "door held"
	Camera, "360", type reference "Nv", reference "Xx", internal
	Motion sensor directional infrared
	Break-glass door release button
	Push button to Exit

Existing Strip-Out Services

[illegible]

CDM Regulations:
In addition to any information included in this drawing or the model from which it is derived, refer also to the project CDM Risk Register for information on residual risks.

General Notes:

- The drawing does not necessarily show all the information needed to interpret the design intent or the construction details.
- The drawing contains information from more than one source and must be read in conjunction with all relevant specifications.
- Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention.

Project Notes:

1. This drawing shows design intent only and is subject to coordination by the contractor and the preparation of installation detail drawings.
2. This drawing shall be read in conjunction with all other relevant drawings and specifications.
3. Do not scale from this drawing.
4. All dimensions are in mm unless otherwise stated.
5. This installation shall conform to all relevant statutory regulations and standards.
6. The electrical installation shall be in accordance with BS7671 and latest amendments.

P03	Stage 3 Issue	TA	LG	BK	18/05/23
P02	Stage 3 WIP Issue	TA	LG	BK	28/04/23
P01	Stage 3 WIP Issue	TA	LG	BK	18/04/23
Index	Description	Designed	Reviewed	Authorised	Date

REVISIONS:

HOARE LEA (H.)

ARCHITECT:
Donald Insall Associates

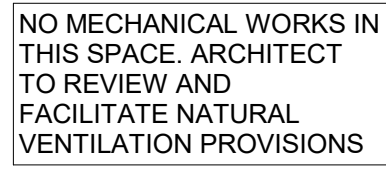
CLIENT:
The University of Manchester

PROJECT TITLE:
John Rylands Research Institute & Library

DRAWING TITLE:
Combined Electrical Services Layout
Second Floor

Stage 3

PERSON RESPONSIBLE FOR:		
Design: TA	Review: LG	Authorising Issue: BK
Project No: 04/06115	Date: 04/13/23	Scale @ A0: 1 : 50
DRAWING NUMBER:		Status: Rev:
JRL-HLEA-ZZ-30A-D60-E-3001		S4 P03



NO MECHANICAL
WORKS IN THIS
SPACE.

NO MECHANICAL WORKS IN THIS SPACE. ARCHITECT TO REVIEW AND FACILITATE NATURAL VENTILATION PROVISIONS

CDM Regulations:

In addition to any information included in this drawing or the model from which it is derived, refer also to the project CDM Risk Register for information on residual risks.

General Notes

- The drawing does not necessarily show all the information needed to interpret the design intent or the construction details.
- The drawing contains information from more than one source and must be read in conjunction with all relevant specifications.
- Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention.

Project Notes:

1. This drawing shows fire intent only and is subject to coordination by the contractor and the preparation of installation detail drawings.
2. Contractor shall provide transitions and transmission ductwork pieces in addition to all set up and down as appropriate for fully co-ordinate ductwork system with the other trades.
3. All galvanized steel ductwork to be in accordance with BSES DW14/4.
4. All ductwork shall be floor/ceiling in accordance with DW14 and the Hoare Specification, to facilitate access and cleaning of the duct systems. Where possible, locate ductwork in a position to provide access to the ductwork access door and minimise ceiling void access. Where possible, locate access doors within easily accessible areas close to the ductwork.
5. Access panels to be provided to facilitate access and maintenance to all items of equipment and fire dampers.
6. Access panels to be provided to facilitate access to details of fire compartmentation. Smoke and fire dampers shall be provided wherever ductwork crosses fire compartmentation.
7. Multi-leaf opposed blade VCDs to be provided on every ductwork penetration.
8. Locate VCDs in accordance with manufacturer requirements, set back from furnaces, grilles and belmdown.
9. Flexible connections shall not be used, all diffusers/grilles etc.
10. All penetrations of the structure shall be fitted with metal plates and the ductwork shall be suitably braced/packed to maintain the integrity of the barrier.
11. Refrigerant systems to be designed, sized and installed in accordance with the relevant regulations. Pressure ratings are indicative, final sizes TBC by refrigerant specialist.
12. All ductwork and pipework to be insulated in accordance with the relevant regulations.
13. All external services to be weather proofed in accordance with Hoare Lse Specification. All External services and equipment to be protected with a locked steel plate to facilitate with water run-off.
14. Condensate drainage to be provided with all relevant services.
15. All refrigerant gas and oil services to be run to the substation. Refer for specification for further details. To be further developed by the contractor.
16. All Condensate drainage to be run back to nearest SVP via a waterproof trap arrangement.
17. Refer to the relevant drawings for details relating to acoustic linings and other measures to be incorporated in the design.
18. This Stage 3 drawings identify major services routes and penetrations to facilitate structural/architectural detailing of penetrations. It is noted that various additional smaller penetrations may be required for the installation of smaller services not detailed on these drawings.

Ventilation Systems Colour Scheme

- Exhaust
 Extract
 Intake
 Supply
 Fire Rates

Mechanical Pipework Systems Colour Scheme

- Low Temperature Hot Water Flow 60/40
-  Low Temperature Hot Water Return 60/40
-  BCWS
- Above Ground Drainage
-  Indicative Refrigerant Route

Abbreviations

- | | |
|-----|-----------------------|
| SD | Supply Diffuser |
| EG | Extract Grille |
| VCD | Volume Control Damper |
| FD | Fire Damper |
| ODU | Overdoor Heater |
| HB | Heater Battery |

P03	Stage 3 Issue	TV	BK	BK	19/05/23
P02	Stage 3 - Draft Issue	TV	BK	BK	28/04/23
P01	Stage 3 WIP Issue	TV	BK	BK	14/04/23
Index	Description	Designed	Reviewed	Authorised	Date

REVISIONS:

HOARE LEA (H.)

ARCHITECT:
Donald Insall Associates

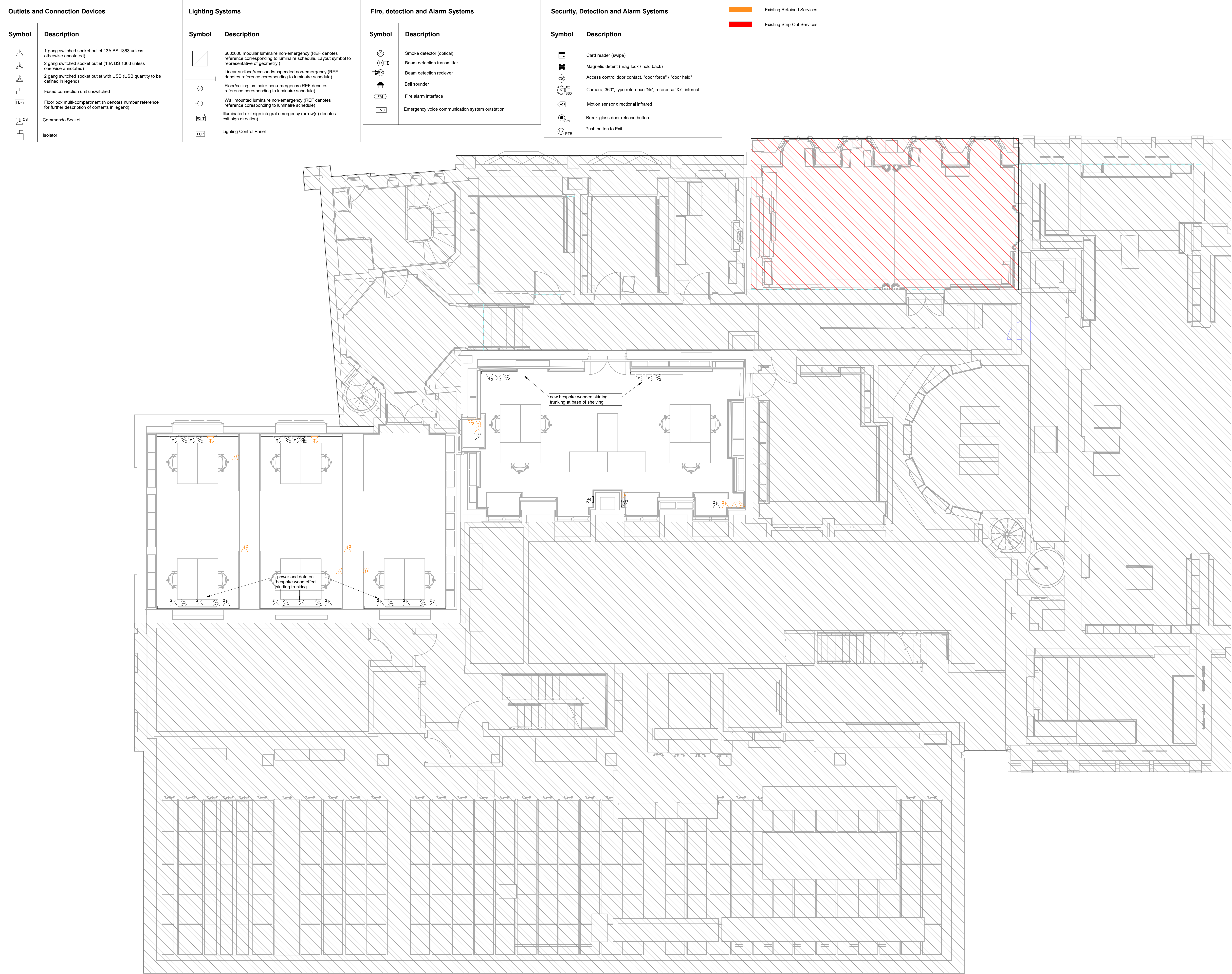
CLIENT:
The University of Manchester

PROJECT TITLE:
John Rylands Research Institute & Library

DRAWING TITLE:
Combined Mechanical Services Layout
Second Floor

Stage 3

PERSON RESPONSIBLE FOR:		
Design: TV	Review: BK	Authorising Issue: BK
Project No: 04/06115	Date: 14/04/23	Scale @ A0: As indicated
DRAWING NUMBER:		Status: Rev:
JRL-HLEA-ZZ-30A-D60-M-3001		S4 P03



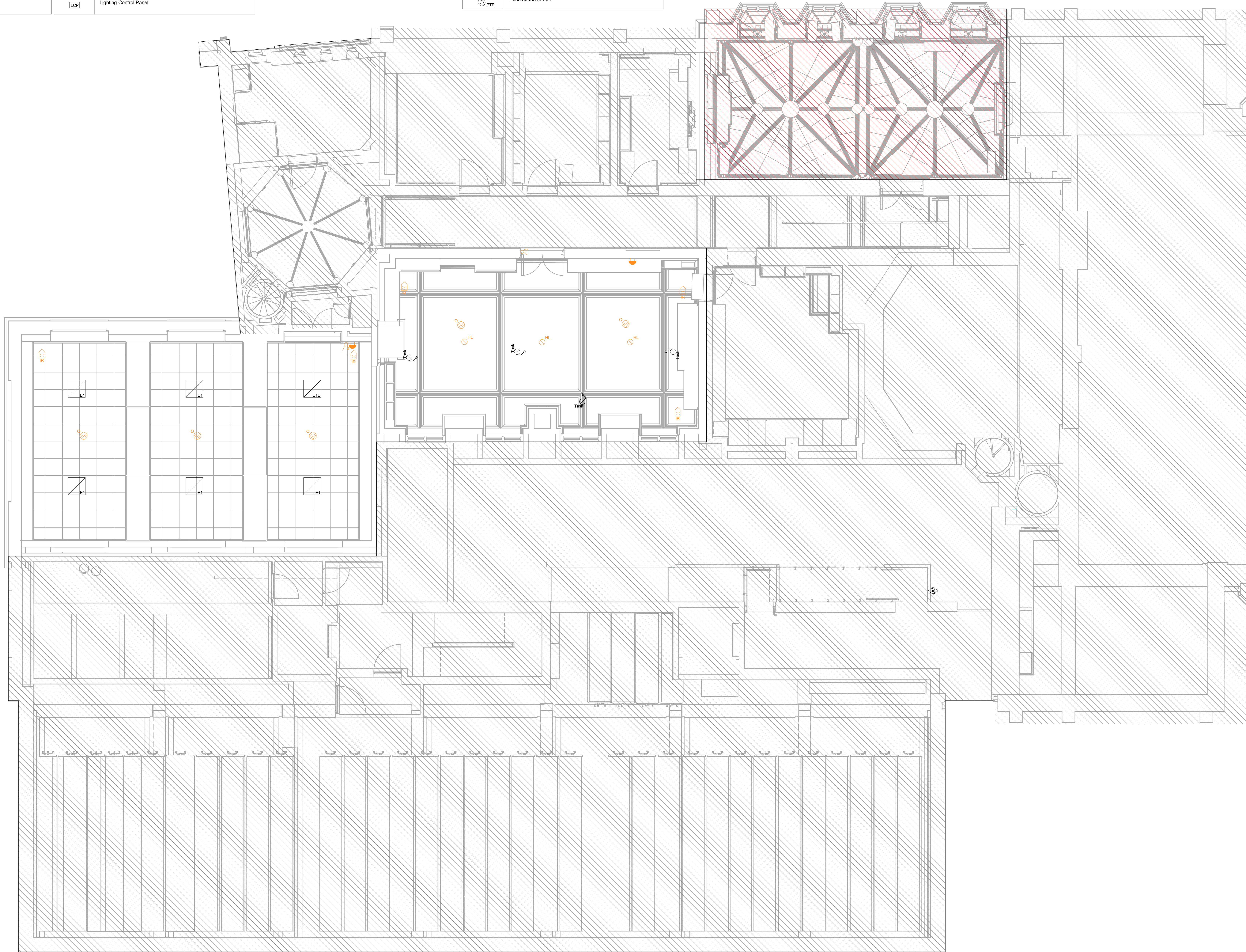
Lighting Systems	
Symbol	Description
	600x600 modular luminaire non-emergency (REF denotes reference corresponding to luminaire schedule. Layout symbol to representative of geometry.)
	Linear surface/recessed/suspended non-emergency (REF denotes reference corresponding to luminaire schedule)
	Floor/ceiling luminaire non-emergency (REF denotes reference corresponding to luminaire schedule)
	Wall mounted luminaire non-emergency (REF denotes reference corresponding to luminaire schedule)
	Illuminated exit sign integral emergency (arrow(s) denotes exit sign direction)
	Lighting Control Panel

Security, Detection and Alarm Systems	
Symbol	Description
	Card reader (swipe)
	Magnetic detent (mag-lock / hold back)
	Access control door contact, "door force" / "door held"
	Camera, 360°, type reference "Nn", reference "Xx", internal
	Motion sensor directional infrared
	Break-glass door release button
	Push button to Exit

Existing Retained Services

Existing Strip-Out Services

Symbol	Description
	Card reader (swipe)
	Magnetic detent (mag-lock / hold back)
	Access control door contact, "door force" / "door held"
	Camera, 360°, type reference "Nir", reference "Xx", internal
	Motion sensor directional infrared
	Break-glass door release button
	Push button to Exit



CDM Regulations:
In addition to any information included in this drawing or the model from which it is derived, refer also to the project CDM Risk Register for information on residual risks.

- General Notes:**
- The drawing does not necessarily show all the information needed to interpret the design intent or the construction details.
 - The drawing contains information from more than one source and must be read in conjunction with all relevant specifications.
 - Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention.

Project Notes:

1. This drawing shows design intent only and is subject to coordination by the contractor and the preparation of installation detail drawings.
2. This drawing shall be read in conjunction with all other relevant drawings and specifications.
3. Do not scale from this drawing.
4. All dimensions are in mm unless otherwise stated.
5. This installation shall conform to all relevant statutory regulations and standards.
6. The electrical installation shall be in accordance with BS7671 and latest amendments.

P03	Stage 3 Issue	TA	LG	BK	19/05/23
P02	Stage 3 WIP Issue	TA	LG	BK	28/04/23
P01	Stage 3 WIP Issue	TA	LG	BK	18/04/23
Index	Description	Designed	Released	Authorised	Date

REVISIONS:

HOARE LEA (H.)

ARCHITECT:
Donald Insall Associates

CLIENT:
The University of Manchester

PROJECT TITLE:
John Rylands Research Institute & Library

DRAWING TITLE:
Combined Electrical Services RCP Layout
Third Floor

Stage 3

PERSON RESPONSIBLE FOR:		
Design: TA	Review: LG	Authorising Issue: BK
Project No: 04/06115	Date: 04/13/23	Scale @ A0: 1 : 50
DRAWING NUMBER:		Status: Rev:
JRL-HLEA-ZZ-40A-D60-E-3002		S4 P03



CDM Regulations:

In addition to any information included in this drawing or the model from which it is derived, refer also to the project CDM Risk Register for information on residual risks.

General Notes

- The drawing does not necessarily show all the information needed to interpret the design intent or the construction details.
- The drawing contains information from more than one source and must be read in conjunction with all relevant specifications.
- Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention.

Project Notes:

1. This drawing shows design intent only and is subject to coordination by the contractor and the preparation of installation detail drawings.
2. Contractors shall coordinate penetrations and structural cutouts in advance of construction and shall coordinate cutout pieces in addition to all set up and set downs as appropriate to fully co-ordinate cutout system with the other trades.
3. All galvanneal steel ductwork to be in accordance with BSES DW144.
4. All ductwork shall be double specified in accordance with DW144 and the Hoare Lea Specification, to facilitate access and cleaning of the duct systems. Where possible, locate penetrations in areas of least use, such as above ceiling access door and minimise ceiling void exposure. Where possible, locate access doors within easily accessible areas such as plant rooms.
5. Access panels to be provided to facilitate access and maintenance to all items of equipment and fire dampers.
6. Contractors shall coordinate with the architect for details of fire compartmentation. Smoke and fire dampers shall be provided wherever ductwork crosses fire compartments.
7. Multi-leaf opposed blade VCDs to be provided on every fire compartment.
8. Locate VCDs in accordance with manufacturers' requirements, set back from doors, grilles and terminals.
9. Flexible connections shall not be used, all diffusers/grilles to be rigid.
10. All penetrations of the structure shall be fitted with metal plates, all penetrations shall be sealed and all cables packed to maintain the integrity of the barrier.
11. Refrigerant systems to be designed, sized and installed in accordance with relevant standards. Colour coding is indicative, final sizes TBC by refrigerant specialist.
12. All ductwork and pipework to be insulated in accordance with relevant standards.
13. All external services to be weather proofed in accordance with Hoare Lea Specification. All External VCDs and grilles to be equipped with a gasket rod to facilitate with water run-off.
14. Condensate drainage to be provided to all items of equipment as specified and to be piped to a local location. Refer to specification for further details. To be further developed by the contractor.
15. All services to be installed in a ductwork to nearest SVP via a watertight trap arrangement.
16. Contractor to refer to drawings for details relating to acoustic linings and other measure to be incorporated in the design.
17. This Stage 3 drawings identify major services routes and penetrations to facilitate structural/architectural detailing of penetrations. It is noted that various smaller penetrations are not shown. The contractor is required to detail all smaller services not detailed on these drawings.

Ventilation Systems Colour Scheme

-  Exhaust
 Extract
 Intake
 Supply
 Fire Rated

Mechanical Pipework

- Systems Colour Scheme**
- Low Temperature Hot Water Flow 60/40
 - Low Temperature Hot Water Return 60/40
 - BCWS
 - Above Ground Drainage
 - Indicative Refrigerant Route

Abbreviations

- | | |
|-----|-----------------|
| SD | Supply Diffuser |
| EG | Extract Grille |
| VCD | Volume Control |
| FD | Fire Damper |
| ODU | Overdoor Heater |
| HB | Heater Battery |

P03	Stage 3 Issue	TV	BK	BK	19/05/23
P02	Stage 3 - Draft Issue	TV	BK	BK	28/04/23
P01	Stage 3 WIP Issue	TV	BK	BK	14/04/23
Index	Description	Designed	Finalised	Authorised	Date

REVISIONS:

HOARE LEA 

ARCHITECT:
Donald Insall Associates

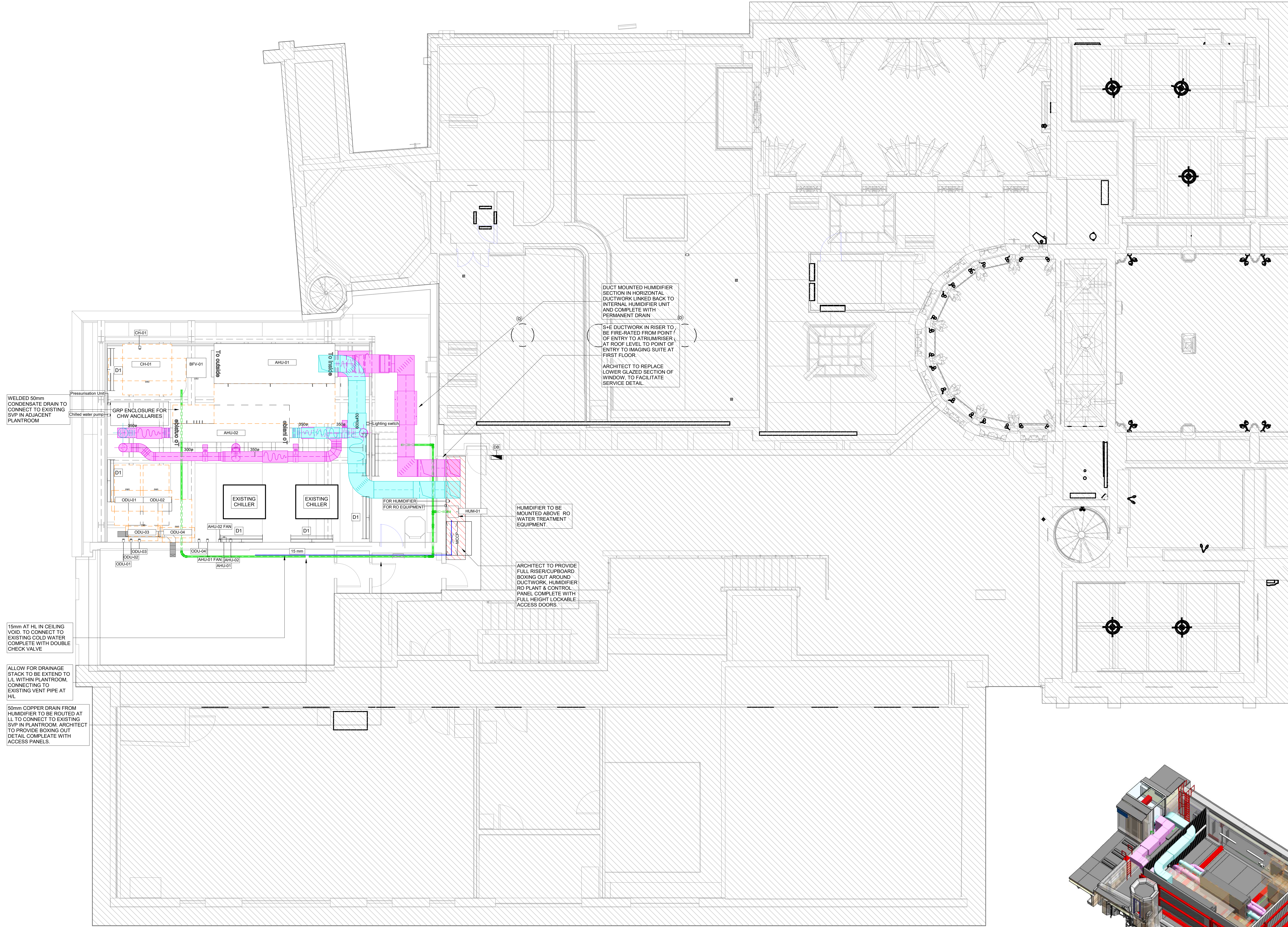
CLIENT:
The University of Manchester

PROJECT TITLE:
John Rylands Research Institute & Library

DRAWING TITLE:
Combined Mechanical Services Layout
Third Floor

Stage 3

PERSON RESPONSIBLE FOR:			
Design: TV	Review: BK	Authorising Issue: BK	
Project No: 04/06115	Date: 14/04/23	Scale @ A0: As indicated	
DRAWING NUMBER:			Status: Rev:
JRL-HLEA-ZZ-40A-D60-M-3001			S4 P03



General Notes:

- The drawing does not necessarily show all the information needed to interpret the design intent or the construction details.
- The drawing contains information from more than one source and must be read in conjunction with all relevant specifications.
- Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention.

Project Notes:

- This drawing shows design intent only and is subject to coordination by the contractor and the preparation of installation detail drawings.
- Contractor to allow for all transitions and transformation ductwork pieces in addition to all set up and set downs as appropriate to fully co-ordinate ductwork system with the building and services.
- All galvanised steel ductwork to be in accordance with BS65 DW144.
- Provide access doors/hatches in accordance with DW144 and the Hoare Lea Specification, to facilitate access and clearing of the duct systems. Where possible, locate dampers in proximity to one another to share a common access door and minimise ceiling void access. Where possible, locate access doors within easily accessible areas such as core areas and risers.
- Access panels to be provided to facilitate access and maintenance to all items of equipment and fire dampers.
- The contractor shall refer to architects' drawings for details of fire compartmentation. Smoke and fire dampers shall be provided wherever ductwork crosses fire compartments.
- Multi-level opposed blade VCDs to be provided on every grille/diffuser and sub-branch ductwork.
- Locate VCDs in accordance with manufacturer requirements, set back from diffusers, grilles and bellmouths.
- Flexible connections shall not be used, all diffusers/grilles.
- All penetrations of the structure shall be fitted with metal sleeves. At fire barriers the sleeves shall be suitably packed to maintain the integrity of the barrier.
- Refrigerant systems to be designed, sized and installed by refrigerant specialist. Refrigerant tray sizes on drawings are indicative, final sizes TBC by refrigerant specialist.
- All ductwork and pipework to be insulated in accordance with Hoare Lea Specification.
- All external services to be weather proofed in accordance with Hoare Lea Specification. All External AHUs and ductwork to be equipped with a pitched roof to facilitate with water run-off.
- Condensate drainage to be provided to all items of equipment as required, routing back to the nearest stack location. Refer to specification for further details. To be further developed by the contractor.
- AC condensate drainage to route back to nearest SVP via a waterless trap arrangement.
- Refer to Acoustic Report for further details relating to acoustic linings and other measure to be incorporated in the design.
- These Stage 3 drawings identify major services routes and penetrations to facilitate structural/architectural detailing of penetrations. It is noted that various additional smaller penetrations will be required to facilitate routing of smaller services not detailed on these drawings.

Ventilation Systems
Colour Scheme

- Exhaust
- Extract
- Intake
- Supply
- Fire Rated

Mechanical Pipework
Systems Colour Scheme

- Low Temperature Hot Water Flow 60/40
- Low Temperature Hot Water Return 60/40
- BCWS
- Above Ground Drainage
- Indicative Refrigerant Route

Abbreviations

- SD Supply Diffuser
- EC Exhaust Grille
- VCD Volume Control Damper
- FD Fire Damper
- ODU Overdoor Heater
- HB Heater Battery

P03	Stage 3 Issue	TV/TA BK/LG	BK	19/05/23
P02	Stage 3 - Draft Issue	TV/TA BK/LG	BK	28/04/23
P01	Stage 3 WSP Issue	TV/TA BK/LG	BK	17/04/23

Rev	Description	Original	Revised	Author	Date
-----	-------------	----------	---------	--------	------

REVISIONS:

HOARE LEA **HL**

ARCHITECT:
Donald Insall Associates

CLIENT:
The University of Manchester

PROJECT TITLE:
John Rylands Research Institute & Library

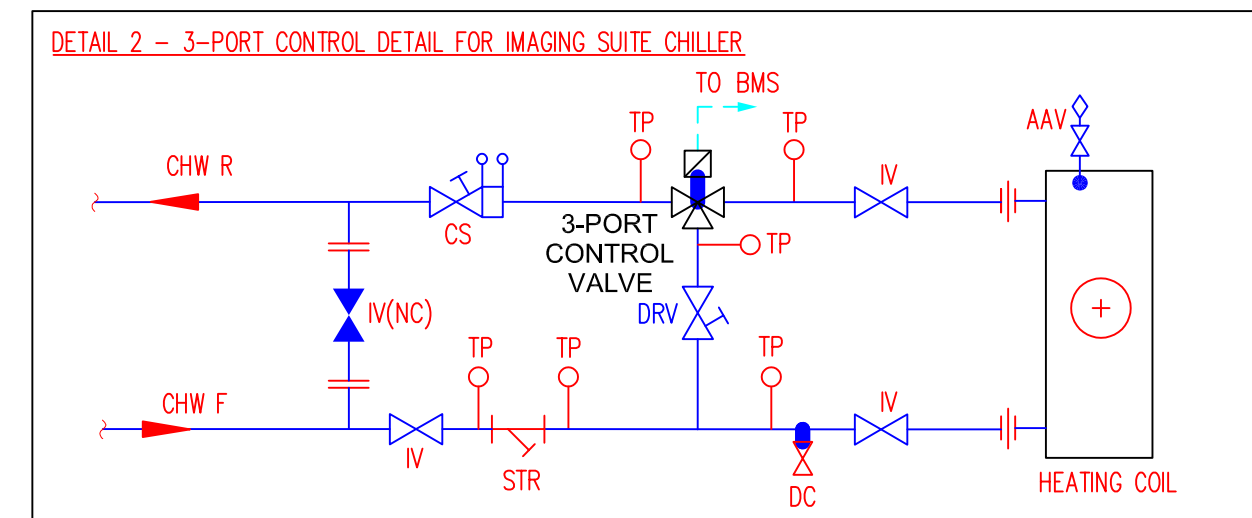
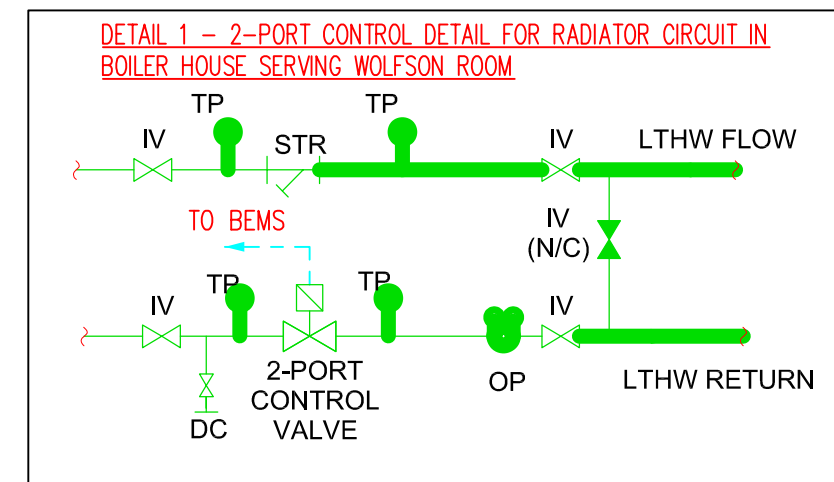
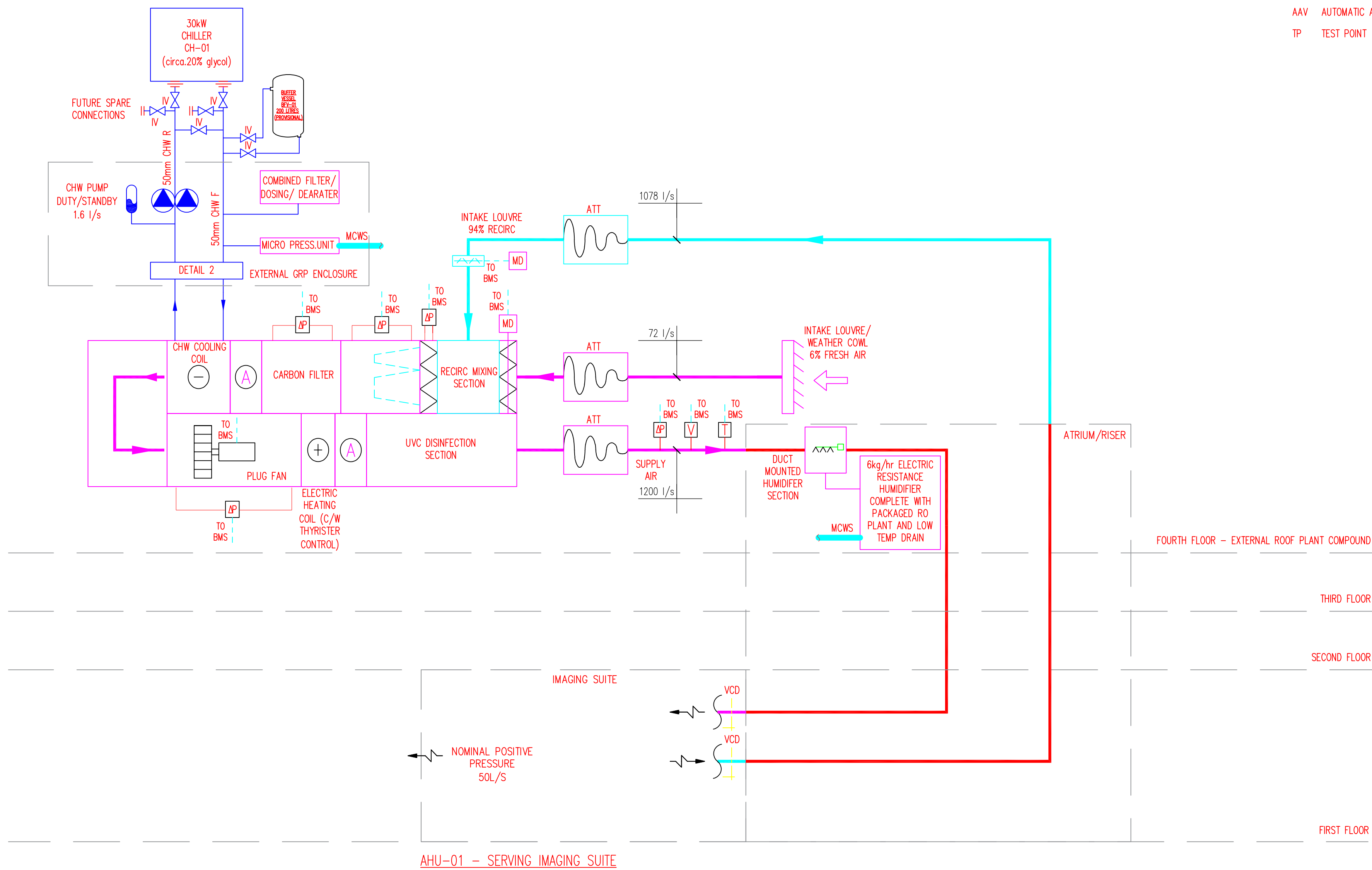
DRAWING TITLE:
Combined Services Layout
Fourth Floor

Stage 3

PERSON RESPONSIBLE FOR:		
Design:	Review:	Authorising Issue:
TV / TA	BK / LG	BK
Project No:	Date:	Scale @ A0:
04/06115	14/04/23	As Indicated
DRAWING NUMBER:		Status: Rev:
JRL-HLEA-ZZ-50A-D60-CS-3001		S4 P03

This drawing shall not be scaled.
Work from the dimensions shown in the
drawing or given in relevant specifications

DRV RESOLVING VALVE
STR TEST POINT
AAV AUTOMATIC AIR VALVE
TP TEST POINT



CDM Regulations:

In addition to any information included in this drawing or the model from which it is derived, refer also to the project CDM Risk Register for information on residual risks.

General Notes:

- The drawing does not necessarily show all the information needed to interpret the design intent or the construction details.
- The drawing contains information from more than one source and must be read in conjunction with all relevant specifications.
- Any apparent drafting errors and differences between other drawings and specifications shall be brought to our attention.

Project Notes:

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT PUBLIC HEALTH, STRUCTURAL, MECHANICAL AND ELECTRICAL ENGINEERS DRAWINGS, SCHEMATICS, LAYOUTS AND THE RELEVANT SECTIONS OF THE SPECIFICATION.
- FIRE DAMPERS ARE NOT INDICATED ON THIS SCHEMATIC. THE CONTRACTOR SHALL REFER TO THE ARCHITECTS DRAWINGS FOR DETAILS OF FIRE COMPARTMENTATION. FIRE DAMPERS SHALL BE PROVIDED TO ALL SUPPLY AND EXTRACT DUCTWORK WHERE THE FIRE COMPARTMENTS ARE CROSSED.

ANNOTATIONS AND SYMBOLS

ATT ATTENUATOR

SUPPLY

EXTRACT

FIRE RATED

FIRE DAMPER

Volume (l/s)	Velocity (m/s)
Size/Dia (mm)	Pressure Drop (Pa)

MD MOTORISED DAMPER

V VELOCITY SENSOR

T TEMPERATURE SENSOR

AP FILTER/AIRFLOW PRESSURE SWITCH

HS HUMIDITY SENSOR

PS PRESSURE SENSOR

STR STRAINER

IV ISOLATION VALVE

DC DRAIN COCK

OP ORIFICE PLATE

TP TEST POINT

DRV RESOLVING VALVE

STR TEST POINT

AAV AUTOMATIC AIR VALVE

TP TEST POINT

Index	Description	Designed	Reviewed	Authorised	Date
P03	STAGE 3 - UPDATED TO CMNTS	BK	AC	BK	05/23
P02	STAGE 3 - DRAFT ISSUE	TV	BK	BK	04/23
P01	STAGE 3 - DRAFT ISSUE	TV	BK	BK	04/23

REVISIONS:

HOARE LEA (H.L.)

ARCHITECT:
Donald Insall Associates
Bridgegate House
5 Bridge Place
Chester
CH1 1SA

CLIENT:
The University of Manchester
Oxford Road
Manchester
M13 9PL

PROJECT TITLE:
The John Rylands Research Institute & Library
Manchester

DRAWING TITLE:
MECHANICAL SCHEMATICS

STAGE 3 ISSUE

PERSON RESPONSIBLE FOR:		
Design: TV	Review: BK	Authorising Issue: BK
Project No: 04/06115	Date: 14/04/23	Scale @ A1: NTS @ A1
DRAWING NUMBER: JRL-HLEA-ZZ-XX-D20-M-3001		Revision: P03