

## Design Note

Project All Saints West Refurbishment  
Subject Drainage Strategy for Planning  
Project no 067403  
Date 23 January 2026

| Revision | Description                      | Issued by | Date     | Approved (signature) |
|----------|----------------------------------|-----------|----------|----------------------|
| P01      | DRAFT – Issue for Planning       | NC        | 09/01/26 | MW                   |
| P02      | Issue for Planning               | NC        | 23/01/26 | MW                   |
| P03      | Issue for Planning – Updated RLB | NC        | 28/01/26 | MW                   |

## 1 Introduction

Buro Happold Engineering have been instructed by Manchester Metropolitan University (the University) to prepare a drainage strategy in support of a Full Planning Permission Application for the Proposed Development of the All Saints Library in Manchester, approximate postcode M15 6BH.

The following design note has been prepared for the planning authority and Lead Local Flood Authority (LLFA), Manchester City Council (MCC) and any other parties involved in the planning application process.

This design note is to be read in conjunction with the drainage strategy drawings 103040-BHE-XX-XX-DR-C-003101 Proposed Foul Water Drainage Plan and 103040-BHE-XX-XX-DR-C-003100 Proposed Surface Water Drainage Plan.

## 2 Consultation

Recent pre-development enquiries have been undertaken with United Utilities (UU) and MCC LLFA in their roles as statutory consultees. Consultation has been undertaken to confirm the proposed management strategy, proposed connections and discharge rates for both surface and foul water.

### 2.1 Lead Local Flood Authority (LLFA)

Pre-application discussions with the LLFA were undertaken on 31/07/2025. During this meeting, the refurbishment proposals were discussed to confirm the surface water management requirements for the scheme.

Buro Happold outlined the refurbishment scheme alongside the demolition works and new build scheme. The aim to reuse existing drainage including rainwater pipes was discussed and intention to maintain the connection to the existing combined private drainage to the south which ultimately discharges to the existing UU combined sewer within the site.

The LLFA advised within the consultation meeting that since the scheme is a refurbishment and the overall impermeable area is not increasing; they do not envisage any required betterments in terms of surface water management.

Following design development, the LLFA were re-consulted on 05/11/2025 to outline the latest proposals for the enhanced gateway and discuss the emerging drainage strategy. The LLFA's stance remained and that evidence from UU must be provided regarding connections and betterment requirements.

This Design Note has been prepared for the sole benefit, use and information of Manchester Metropolitan University for the purposes set out in the Design Note or instructions commissioning it and shall be subject to the express contract terms with Manchester Metropolitan University. BH assumes no liability or responsibility for any reliance placed on this Design Note by any third party. All concepts and proposals are copyright © 1976 – 2026 Buro Happold. All rights reserved. Issued in commercial confidence.

Refer to Appendix A for evidence of written consultation with LLFA.

## 2.2 United Utilities (UU)

As the existing site currently discharges to the public sewer network, United Utilities (UU) has been engaged in order to ascertain their requirements for the proposed development.

A pre-development enquiry meeting was undertaken with UU on 26/03/2025 for both the 'All Saints Library' scheme and refurbishment scheme. In this meeting, the feasibility of constructing over the existing 300mm combined water public sewer was discussed. UU advised that their preference would be to abandon the sewer rather than build over, if it's found that the sewer does not serve any other landowners and does not provide the existing network with surcharge relief.

UU were consulted again on 04/08/2025. Buro Happold (BH) outlined the refurbishment scheme and the presence of the existing sewer beneath the existing building to be refurbished. UU advised that evidence to show that the new core structure would not impact the existing sewer would be required by assessing the zone of influence from proposed foundations.

Buro Happold also discussed the intention of reusing existing drainage including the rainwater pipes and existing combined drainage which currently connects to the UU sewer. UU confirmed that since the scheme is a refurbishment and the overall impermeable area is not increasing, they would accept in principle that existing drainage, connections and discharge rates could be maintained.

Following design development, United Utilities were re-consulted on 27/11/2025 to outline the latest proposals for the enhanced gateway and discuss the emerging drainage strategy. A new engineer from UU was assigned to the project and therefore, Buro Happold outlined the context of the proposed scheme, existing site constraints including the existing public sewer located beneath existing buildings and enhanced scheme proposals.

UU agreed that the latest proposals can be considered as an extension to the existing building based on the principle that the foundations of the existing structure are to be reused. BH outlined the proposed drainage strategy will utilise existing rainwater pipes and connections to below ground drainage for retained structure.

BH confirmed any new drainage will connect to existing private combined drainage within the site which ultimately discharges to existing combined water public sewer, as per existing. UU outlined that discharge rates should be proportioned based on the existing structure and new extension. Existing structure can discharge as per existing whilst the new extension will be proportioned with a betterment based on brownfield rates.

UU advised a build over agreement may be required to prove maintenance and access is still viable and that proposals have no detrimental loading impacts on the existing sewer beneath the existing buildings. Existing/retained structure may be exempt from build over agreement. UU advised that at the planning stage, Wastewater Developer Services will recommend a consultation as part of their asset protection processes.

UU advised vibrations during construction works to be considered. RAMS likely required from contractor undertaking the works for piling works anywhere within 15 metres of existing sewer. UU also advised that at the planning stage, the Wastewater Developer Services will also recommend a Risk Assessment and Method Statement (RAMS) condition if the development suggests any work that may affect the larger assets.

Refer to Appendix A for evidence of consultation with UU.

## 3 Proposed Drainage Strategy

The proposed drainage strategy, which includes separate surface water and foul water drainage, has been designed in accordance with local and national standards, best practice and the requirements of MCC and UU. Refer to Appendix C for proposed drainage strategy drawings.

### **3.1 Surface Water Drainage Strategy**

The proposed surface water drainage strategy aims to reuse existing rainwater pipes and combined water private drainage within the development site, where possible. The existing United Utilities' combined water public sewer, which is located beneath the existing building, is to be maintained alongside all the existing connections from combined water private drainage. Refer to Appendix B for the existing drainage plan drawing.

Proposed discharge rates have been calculated based on the existing brownfield discharge rates using the modified rational method. The existing structure roof area and external hard landscaping is proposed to discharge as per the existing drainage regime.

Existing discharge rates have been calculated for the existing roof area to be demolished and a betterment of 50% has been applied to this value in order to determine the proposed discharge rate for the new core structure roof and the adjacent proposed landscaping.

The betterment requirements are to be provided in the form of bio-retention areas utilising granular storage layers to provide the required attenuation. An orifice plate is to be installed on the manhole upstream of the proposed connection to the existing private combined water drain in order to restrict the surface water flows from the development.

Since the proposed surface water drainage will connect to the existing combined water private network, it is essential that measures are implemented to mitigate the risk of odours emanating from the existing network. The surface water drainage strategy proposes the use of a Wastop Inline Check valve, or equivalent alternative, on the final upstream surface water manhole prior to connection to the existing network.

### **3.2 Foul Water Drainage Strategy**

The foul water network that will serve the proposed development has been designed in accordance with Building Regulations Approved Document H (Drainage and Waste Disposal).

For the proposed foul water drainage strategy, it is anticipated that all new sanitary downpipes will be collected at slab level and routed through a new piped network, below the new slab, to the external areas to the east of the new core structure. The private foul water network is to be vented to atmosphere through soil vent pipes or similar within the above ground drainage design.

From here, foul water flow will be routed to the south and connect to the existing private combined water network prior to discharging to the existing combined water public sewer, as agreed in principle with United Utilities.

## **Appendix A – Consultation**

### **Appendix A.1 – Lead Local Flood Authority (LLFA)**

|                                       |                                                                                                                                                                                                                                                                                              |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Case Ref:</b>                      | MMU/M15/A/PRE                                                                                                                                                                                                                                                                                |
| <b>Site Name:</b>                     | Manchester Metropolitan University Library, All Saints Campus, Manchester, M15 6B                                                                                                                                                                                                            |
| <b>LLFA Advice Suitability Stage:</b> | <input type="checkbox"/> <b>RIBA 0 – 2</b> (Strategic appraisals, feasibility, and concept design).<br><input checked="" type="checkbox"/> <b>RIBA 3 – 7</b> (to prepare a Planning application and to discharge Planning Conditions for pre-commencement through to handover & occupation). |

**LLFA Comments 05/11/2025**

|                                       |     |
|---------------------------------------|-----|
| <b>Site checked in Asset Register</b> | Yes |
| <b>Data Screen Recommended</b>        | No  |
| <b>FRA Required</b>                   | No  |

**Notes:**

The pre-application discussion and the below summary refers to the refurbishment of the existing MMU Teaching Building (All Saints West) only. On the basis that the below details are provided at full application stage, the application will be approvable without condition:

- Evidence of acceptance from United Utilities that attenuation/betterment is not required and the existing surface water connection to the combined sewer can be re-used at the existing rate.
- CCTV & survey details of the existing surface water drainage to demonstrate that it is fit for purpose for the proposed development, and details of any additions/modifications.

| <b>Standard Condition Clauses (Pre-commencement and Pre-occupation)</b>                                                                                                                                                                                                       | <b>Notes made during meeting to appraise proposals against the Clauses</b>                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Progression through the drainage hierarchy must be evidence based and supported by site investigation including assessments of ground conditions and infiltration testing in accordance with BRE365. Proposals of attenuation should achieve half drain time within 24 hours. | It is proposed to re-use the existing drainage for this existing building, which discharges to the public combined sewer. As there is no increase in impermeable area, no proposed below-ground drainage works, and existing drainage is being re-used, this clause is not applicable. |

|                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Where surface water is connected to the main river, any works within or adjacent to the river that would affect it would require consent from Environment Agency. An email of acceptance of proposed flows and/or new connection will suffice.                                                                                                                      | N/A                                                                                                                                                                                                                                                                                    |
| Where surface water is connected to the ordinary watercourse, agreement in principle from Manchester City Council as Lead Local Flood Authority is required. Please note that all new connections to the watercourses shall comply with reduction of flows to Greenfield runoff rates. An email of acceptance of proposed flows and/or new connection will suffice. | N/A                                                                                                                                                                                                                                                                                    |
| Where surface water is connected to the public sewer, agreement in principle from United Utilities is required that there is adequate spare capacity in the existing system taking future development requirements into account. An email of acceptance of proposed flows and/or new connection will suffice.                                                       | <p>United Utilities have been consulted and have agreed that attenuation/betterment is not required for the existing sewer connection.</p> <p>Evidence of acceptance from UU should be provided with the full planning application.</p>                                                |
| Maximised integration of green SuDS components (utilising infiltration or attenuation) if practicable.                                                                                                                                                                                                                                                              | A landscaped area is proposed as part of the existing building refurbishment, providing a small betterment in permeable area and allowing surface water from paved areas to runoff to this landscaped area.                                                                            |
| Details of surface water attenuation to align with the Manchester, Trafford and Salford Strategic Flood Risk Assessment. For brownfield sites a minimum of 50% betterment is required for reduction in runoff rate compared to the existing rates with the aim of reducing to the Greenfield runoff rates.                                                          | It is proposed to re-use the existing drainage for this existing building, which discharges to the public combined sewer. As there is no increase in impermeable area, no proposed below-ground drainage works, and existing drainage is being re-used, this clause is not applicable. |
| Development must be limited to greenfield runoff on Greenfield sites up to a 1 in 100-year event, including climate change allowance.                                                                                                                                                                                                                               | It is proposed to re-use the existing drainage for this existing building, which discharges to the public combined sewer. As there is no increase in impermeable area, no proposed below-ground drainage works, and existing drainage is being re-used, this clause is not applicable. |

|                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| A finalised drainage layout showing all components, outfalls, levels and connectivity.                                                                                                                                                                                                                                                                   | Please provide CCTV and survey layouts of the existing/proposed drainage with the application.                                                       |
| An existing and proposed impermeable areas drawing to accompany all discharge rate calculations.                                                                                                                                                                                                                                                         | N/A                                                                                                                                                  |
| Hydraulic calculations of the proposed drainage system, including all design parameters. Calculations must Include Critical Storm Events for the 1 in 2, 1 in 30 and 1 in 100 + 45% Climate Change. Results must demonstrate no surcharge for the 1 in 2, no flooding in the 1 in 30 and no flooding of buildings for the 1 in 100 + 45% Climate Change. | N/A                                                                                                                                                  |
| Where a public sewer diversion or abandonment is proposed, agreement in principle from United Utilities is required. An email of acceptance will suffice.                                                                                                                                                                                                | Should any abandonment or diversion of public sewers become necessary, this would require evidence of acceptance in principle from United Utilities. |
| Where a public sewer build-over is proposed, agreement in principle from United Utilities is required. An email of acceptance will suffice.                                                                                                                                                                                                              | No public sewer build-overs are proposed. If any public sewer build-overs are proposed, agreement in principle from United Utilities is required.    |
| A blockage risk assessment must be undertaken as part of the drainage strategy to support proposed flows less than 5 l/s.                                                                                                                                                                                                                                | N/A                                                                                                                                                  |
| An assessment of surface water pollution risk in-line with CIRIA C753 and, where required, evidence of pollution control measures (preferably through SuDS) to treat surface water prior to discharge.                                                                                                                                                   | N/A                                                                                                                                                  |
| A plan indicating surface water overland flow routes for extreme events to ensure flows are diverted away from existing and proposed buildings (including basements).                                                                                                                                                                                    | N/A                                                                                                                                                  |
| Construction details of flow control and SuDS elements.                                                                                                                                                                                                                                                                                                  | N/A                                                                                                                                                  |
| A plan indicating easements. SuDS features (including attenuation tanks) should be appropriately positioned, including a 2.5m easement from the existing highway and a 5m easement from any dwellings, guaranteeing                                                                                                                                      | N/A                                                                                                                                                  |

|                                                                                                                                                                                     |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| accessibility for future maintenance and contingency for asset failure.<br>This practice is in accordance with SuDS Manual (C753).                                                  |     |
| Finished floor levels and proposed ground levels plan.                                                                                                                              | N/A |
| Where an application is part of a larger site which already has planning permission it is essential that the new proposal does not compromise the drainage scheme already approved. | N/A |

| <b><u>Important Information</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <ul style="list-style-type: none"> <li>• Our review and advice are proportional to the development stage of the proposal. Details of LLFA Advice Suitability Stage are in the top table of page 1.</li> </ul>                                                                                                                                                                                                                                                             |  |
| <ul style="list-style-type: none"> <li>• Where LLFA Advice Suitability Stage is RIBA 3 – 7, formal Planning submissions must contain information at approvable standard for all above clauses to avoid or discharge a Condition.</li> </ul>                                                                                                                                                                                                                               |  |
| <ul style="list-style-type: none"> <li>• Some matters cannot be Conditioned because they affect proposal viability. The LLFA may recommend an Objection if applications do not contain viability information to support the Planning Application. This includes but is not limited to inconsideration of drainage assets near development, inconsideration of flood risk assessment, inconsideration of securing at least one viable option to drain the site.</li> </ul> |  |
| <ul style="list-style-type: none"> <li>• This review has been made based on information presented in the MS Teams meeting 05/11/2025.</li> </ul>                                                                                                                                                                                                                                                                                                                          |  |

## Appendix A.2 – United Utilities

## Niamh Cullen

---

**From:** seweradoptions@uuplc.co.uk  
**Sent:** 01 December 2025 11:13  
**To:** Niamh Cullen  
**Cc:** P067403 MMU All Saints West Refurb; Phil Anwyl  
**Subject:** RE: FW: 07211835 - Wastewater PDE -MMU Library

**\*\*External Email. This email originated from outside Buro Happold.\*\***

Good Morning Niamh

It was a pleasure meeting you too.

- *BH discussed context of the proposed scheme, existing site constraints including existing public sewer located beneath existing buildings and enhanced scheme proposals.*
- *BH outlined previous consultation with Gary Jaundrell @ UU "happy to discharge as existing due to no change to below ground drainage".*
- *Latest proposals include new core structure to support retained structure. Toilets to be included in new core and new floor gullies to the west of the retained structure.*
- *UU agreed this is an extension to the existing building.*
  - *As discussed, these are on the principles that the foundation of the existing structure is will be reused.*
- *BH outlined proposed drainage strategy will utilise existing rainwater pipes and connections to below ground drainage for retained structure.*
- *BH confirmed any new drainage will connect to existing private combined drainage within the site which ultimately discharges to existing combined water public sewer, as per existing.*
  - *Discharge rates will be proportioned based on the existing structure and new extension. Existing structure will discharge as is while new extension will be proportioned with betterment on brownfield rates (agreed with Gary Jaundrell)*
- *UU advised a build over agreement may be required to prove maintenance and access is still viable and that proposals have no detrimental loading impacts on the existing sewer beneath the existing buildings. Existing / retained structure may be exempt from build over agreement.*
  - *At planning stage UU Wastewater Developer Service will recommend a consultation as part of our asset protection processes. Following this do reach out to us to make sure that the information you have is sufficient. Once we have agreed to the asset protection terms, you can submit that information to the LPA's public domain so we can remove our objection.*
- *UU advised vibrations during construction works to be considered. RAMS likely required from contractor undertaking the works for piling works anywhere within 15 metres of existing sewer.*
  - *At planning stage UU Wastewater Developer Service will also recommend a RAMS condition if the development suggests any work that may affect the larger assets. These RAMS are reviewed by our civils teams within UU. This can range anywhere from protecting critical assets during temporary works, piling requirements, structural calcs (for e.g. retaining walls), etc are concerned.*

I can support any further do get in touch.

Kind Regards

Gulshan



**Gulshan Seetulparsad, MEng (Hons)**

Developer Engineer (Greater  
Manchester Area)  
Developer Services & Metering  
Customer Services

**T:** 01925 429092  
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----- Original Message -----

**From:** Niamh Cullen [niamh.cullen@burohappold.com]

**Sent:** 01/12/2025 09:46

**To:** seweradoptions@uuplc.co.uk

**Cc:** 067403@burohappold.onmicrosoft.com; phil.anwyl@burohappold.com;  
jyotsanesh.seetulparsad@uuplc.co.uk

**Subject:** RE: FW: 07211835 - Wastewater PDE -MMU Library

Good morning Gulshan,

Thank you so much for your time on Friday, it was great to meet you.

Please see summary of our discussions below:

1. BH discussed context of the proposed scheme, existing site constraints including existing public sewer located beneath existing buildings and enhanced scheme proposals.
2. BH outlined previous consultation with Gary Jaundrell @ UU "happy to discharge as existing due to no change to below ground drainage".
3. Latest proposals include new core structure to support retained structure. Toilets to be included in new core and new floor gullies to the west of the retained structure.
4. UU agreed this is an extension to the existing building.
5. BH outlined proposed drainage strategy will utilise existing rainwater pipes and connections to below ground drainage for retained structure.
6. BH confirmed any new drainage will connect to existing private combined drainage within the site which ultimately discharges to existing combined water public sewer, as per existing.
7. UU advised a build over agreement may be required to prove maintenance and access is still viable and that proposals have no detrimental loading impacts on the existing sewer beneath the existing buildings. Existing / retained structure may be exempt from build over agreement.

8. UU advised vibrations during construction works to be considered. RAMS likely required from contractor undertaking the works for piling works anywhere within 15 metres of existing sewer.

Please can you confirm the summary above and provide any other comments?

Many thanks,

Niamh Cullen (she/her)

Infrastructure Engineer  
Buro Happold | Cities – Infrastructure

T: 0113 204 2979

M: +447714152407

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**BURO HAPPOLD**

---

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**From:** Niamh Cullen  
**Sent:** 27 November 2025 13:47  
**To:** 'seweradoptions@uuplc.co.uk' <seweradoptions@uuplc.co.uk>  
**Cc:** P067403 MMU All Saints West Refurb <067403@burohappold.onmicrosoft.com>; Phil Anwyl <Phil.Anwyl@BuroHappold.com>; jyotsanesh.seetulparsad@uuplc.co.uk  
**Subject:** RE: FW: 07211835 - Wastewater PDE -MMU Library

Good afternoon Gulshan,

Thank you for the email. I have sent an invite for 2pm tomorrow, please let me know if this works for you?

Many thanks,

Niamh Cullen (she/her)

Infrastructure Engineer  
Buro Happold | Cities – Infrastructure

T: 0113 204 2979

M: +447714152407

## **BURO HAPPOLD**

---

**From:** [seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk) <[seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk)>

**Sent:** 27 November 2025 13:28

**To:** Niamh Cullen <[niamh.cullen@burohappold.com](mailto:niamh.cullen@burohappold.com)>

**Cc:** P067403 MMU All Saints West Refurb <[067403@burohappold.onmicrosoft.com](mailto:067403@burohappold.onmicrosoft.com)>; Phil Anwyl <[phil.anwyl@burohappold.com](mailto:phil.anwyl@burohappold.com)>; [jyotsanesh.seetulparsad@uuplc.co.uk](mailto:jyotsanesh.seetulparsad@uuplc.co.uk)

**Subject:** RE: FW: 07211835 - Wastewater PDE -MMU Library

**\*\*External Email. This email originated from outside Buro Happold.\*\***

Hello Niamh

Apologies, I am already booked regarding Baring Street at 14 00 today.

Would we be able to reschedule please?

Please send the invite straight to me on [jyotsanesh.seetulparsad@uuplc.co.uk](mailto:jyotsanesh.seetulparsad@uuplc.co.uk).

Kind Regards

Gulshan



**Gulshan Seetulparsad, MEng (Hons)**

Developer Engineer (Greater  
Manchester Area)  
Developer Services & Metering  
Customer Services  
**T:** 01925 429092  
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----- Original Message -----

**From:** Niamh Cullen [niamh.cullen@burohappold.com]

**Sent:** 25/11/2025 09:27

**To:** [seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk)

**Cc:** [067403@burohappold.onmicrosoft.com](mailto:067403@burohappold.onmicrosoft.com); [phil.anwyl@burohappold.com](mailto:phil.anwyl@burohappold.com)

**Subject:** RE: FW: 07211835 - Wastewater PDE -MMU Library

Good morning Gulshan,

Thank you for getting back to me. That is great, Thursday 27<sup>th</sup> at 2pm works for us.

I'll send an invite across now.

Many thanks,

Niamh Cullen (she/her)

Infrastructure Engineer

Buro Happold | Cities – Infrastructure

T: 0113 204 2979

M: +447714152407

---

**BURO HAPPOLD**

---

---

**From:** [seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk) <[seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk)>

**Sent:** 24 November 2025 10:50

**To:** Niamh Cullen <[niamh.cullen@burohappold.com](mailto:niamh.cullen@burohappold.com)>

**Cc:** P067403 MMU All Saints West Refurb <[067403@burohappold.onmicrosoft.com](mailto:067403@burohappold.onmicrosoft.com)>; Phil Anwyl <[phil.anwyl@burohappold.com](mailto:phil.anwyl@burohappold.com)>

**Subject:** RE: FW: 07211835 - Wastewater PDE -MMU Library

**\*\*External Email. This email originated from outside Buro Happold.\*\***

Good Morning Niamh

Sorry I have not reached out sooner.

This week I am available:  
Thursday 27<sup>th</sup> between 13 00 and 17 00

Next Week I am available:

Monday 1<sup>st</sup> Dec 10 30 to 16 00  
Thursday 4<sup>th</sup> Dec 10 30 to 15 00  
Friday 5<sup>th</sup> Dec 10 30 to 16 00

Week After 1 am available:

Monday 8<sup>th</sup> Dec 10 30 to 16 00  
Thursday 11<sup>th</sup> Dec 10 30 to 15 00  
Friday 12<sup>th</sup> Dec 10 30 to 16 00

Do let me know when to schedule the meeting for.

Kind Regards

Gulshan



**Gulshan Seetulparsad, MEng (Hons)**  
Developer Engineer (Greater  
Manchester Area)  
Developer Services & Metering  
Customer Services  
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----- Original Message -----

**From:** Niamh Cullen [niamh.cullen@burohappold.com]  
**Sent:** 19/11/2025 09:41  
**To:** [gary.jaundrell@uuplc.co.uk](mailto:gary.jaundrell@uuplc.co.uk); [seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk)  
**Cc:** [067403@burohappold.onmicrosoft.com](mailto:067403@burohappold.onmicrosoft.com); [phil.anwyl@burohappold.com](mailto:phil.anwyl@burohappold.com); [jyotsanesh.seetulparsad@uuplc.co.uk](mailto:jyotsanesh.seetulparsad@uuplc.co.uk)  
**Subject:** RE: FW: 07211835 - Wastewater PDE -MMU Library

Good morning all,

We are keen to consult yourselves regarding the latest proposals for the refurbishment scheme at the MMU Library site.

Please can you advise your availability for a meeting to discuss?

Many thanks,

Niamh Cullen (she/her)

Infrastructure Engineer  
Buro Happold | Cities – Infrastructure

T: 0113 204 2979

M: +447714152407

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**BURO HAPPOLD**

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**From:** Niamh Cullen  
**Sent:** 13 November 2025 10:41  
**To:** 'seweradoptions@uuplc.co.uk' <[seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk)>  
**Cc:** P067403 MMU All Saints West Refurb <[067403@burohappold.onmicrosoft.com](mailto:067403@burohappold.onmicrosoft.com)>; Phil Anwyl <[Phil.Anwyl@BuroHappold.com](mailto:Phil.Anwyl@BuroHappold.com)>; [jyotsanesh.seetulparsad@uuplc.co.uk](mailto:jyotsanesh.seetulparsad@uuplc.co.uk)  
**Subject:** RE: FW: 07211835 - Wastewater PDE -MMU Library

Good morning all,

Please can you both confirm when is best for a meeting to discuss?

Many thanks,

Niamh Cullen (she/her)

Infrastructure Engineer  
Buro Happold | Cities – Infrastructure

T: 0113 204 2979

M: +447714152407

---

**BURO HAPPOLD**

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**From:** [seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk) <[seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk)>

**Sent:** 10 November 2025 10:21

**To:** Niamh Cullen <[niamh.cullen@burohappold.com](mailto:niamh.cullen@burohappold.com)>

**Cc:** P065290 MMU Library Redesign <[065290@burohappold.onmicrosoft.com](mailto:065290@burohappold.onmicrosoft.com)>; P067403 MMU All Saints West Refurb <[067403@burohappold.onmicrosoft.com](mailto:067403@burohappold.onmicrosoft.com)>; Phil Anwyl <[phil.anwyl@burohappold.com](mailto:phil.anwyl@burohappold.com)>; [iyotsanesh.seetulparsad@uuplc.co.uk](mailto:iyotsanesh.seetulparsad@uuplc.co.uk)

**Subject:** RE: FW: 07211835 - Wastewater PDE -MMU Library

**\*\*External Email. This email originated from outside Buro Happold.\*\***

Thank you for confirming, Niamh

I am available either Thursday 13 or Friday the 14th.  
My working hours are between 7:30 - 15:30.

Gulshan, I appreciate that you've just returned from annual leave.  
Could you please confirm if you are available on these dates?

Kind regards



**Gary Jaundrell**  
Developer Engineer  
Developer Services & Metering  
Customer Services  
**T:** 01925 429099  
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----- Original Message -----

**From:** Niamh Cullen [niamh.cullen@burohappold.com]

**Sent:** 07/11/2025 12:15

**To:** [seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk)

**Cc:** [067403@burohappold.onmicrosoft.com](mailto:067403@burohappold.onmicrosoft.com); [065290@burohappold.onmicrosoft.com](mailto:065290@burohappold.onmicrosoft.com);  
[phil.anwyl@burohappold.com](mailto:phil.anwyl@burohappold.com)

**Subject:** RE: FW: 07211835 - Wastewater PDE -MMU Library

Good afternoon Gary,

Thank you for getting back to me on the below.

That's great, I'm available for a meeting Wednesday 12<sup>th</sup> 11am onwards, Thursday 13<sup>th</sup> or Friday 14<sup>th</sup>.

Please let me know when is best for you and Gulshan.

Many thanks,

Niamh Cullen (she/her)

Infrastructure Engineer  
Buro Happold | Cities – Infrastructure

T: 0113 204 2979

M: +447714152407

---

**From:** [seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk) <[seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk)>  
**Sent:** 07 November 2025 12:11  
**To:** Niamh Cullen <[niamh.cullen@burohappold.com](mailto:niamh.cullen@burohappold.com)>  
**Cc:** P065290 MMU Library Redesign <[P065290@burohappold.onmicrosoft.com](mailto:P065290@burohappold.onmicrosoft.com)>; P067403 MMU All Saints West Refurb <[P067403@burohappold.onmicrosoft.com](mailto:P067403@burohappold.onmicrosoft.com)>; Phil Anwyl <[phil.anwyl@burohappold.com](mailto:phil.anwyl@burohappold.com)>  
**Subject:** RE: FW: 07211835 - Wastewater PDE -MMU Library

**\*\*External Email. This email originated from outside Buro Happold.\*\***

Hi Niamh,

Thank you for your email.

I'm no longer the engineer of this area. This instead falls to Gulshan Seetulparsad. However, I will be happy to join you all on a meeting to discuss.

Can you let me know of your availability next week, and I will determine when we are both available.

Kind regards



**Gary Jaundrell**  
Developer Engineer  
Developer Services & Metering  
Customer Services  
**T:** 01925 429099  
[unitedutilities.com](http://unitedutilities.com)

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----- Original Message -----

**From:** Niamh Cullen [[niamh.cullen@burohappold.com](mailto:niamh.cullen@burohappold.com)]  
**Sent:** 05/11/2025 13:49  
**To:** [gary.jaundrell@uuplc.co.uk](mailto:gary.jaundrell@uuplc.co.uk); [seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk)  
**Cc:** [P067403@burohappold.onmicrosoft.com](mailto:P067403@burohappold.onmicrosoft.com); [phil.anwyl@burohappold.com](mailto:phil.anwyl@burohappold.com); [P065290@burohappold.onmicrosoft.com](mailto:P065290@burohappold.onmicrosoft.com)  
**Subject:** RE: FW: 07211835 - Wastewater PDE -MMU Library

Good afternoon Gary,

I hope you are well?

I wanted to reach out regarding the All-Saints West refurbishment scheme at the MMU Library site. Please can you advise your availability for a meeting to discuss the latest proposals?

Many thanks,

Niamh Cullen (she/her)

Infrastructure Engineer  
Buro Happold | Cities – Infrastructure

T: 0113 204 2979

M: +447714152407

---

**BURO HAPPOLD**

---

---

**From:** Niamh Cullen <[niamh.cullen@burohappold.com](mailto:niamh.cullen@burohappold.com)>  
**Sent:** 19 August 2025 09:50  
**To:** [seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk)  
**Cc:** Phil Anwyl <[Phil.Anwyl@BuroHappold.com](mailto:Phil.Anwyl@BuroHappold.com)>; P065290 MMU Library Redesign  
<[065290@burohappold.onmicrosoft.com](mailto:065290@burohappold.onmicrosoft.com)>  
**Subject:** RE: FW: 07211835 - Wastewater PDE -MMU Library

Good morning Gary,

Thank you for your email and confirmation of discharge rates. We will proceed on this basis and ensure the corresponding evidence is provided as part of our planning document.

Many thanks,

Niamh Cullen (she/her)

Infrastructure Engineer  
Buro Happold | Cities – Infrastructure

T: 0113 204 2979

M: +447714152407

---

**BURO HAPPOLD**

---

---

**From:** [seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk) <[seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk)>

**Sent:** 15 August 2025 10:22

**To:** Niamh Cullen <[niamh.cullen@burohappold.com](mailto:niamh.cullen@burohappold.com)>

**Subject:** RE: FW: 07211835 - Wastewater PDE -MMU Library

**\*\*External Email. This email originated from outside Buro Happold.\*\***

Good Morning, Niamh

Thank you for your patience whilst I have been consulting internally.

I can confirm that I am happy for the development to utilise the existing connections to the combined sewer with the significant betterment of 11l/s, with the All Saints internal refurbishment to discharge as existing due to there being no change to the below ground drainage.

Could you please submit this email chain and the drawings/modelling information you submitted, to the the LPA in order for a smooth process once I am re-consulted for a planning response.

Kind regards



**Gary Jaundrell**  
Developer Engineer  
Developer Services & Metering  
Customer Services  
**T:** 01925 429099  
[unitedutilities.com](http://unitedutilities.com)

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**From:** [seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk) [seweradoptions@uuplc.co.uk]  
**Sent:** 11/08/2025 13:12  
**To:** [Niamh.Cullen@BuroHappold.com](mailto:Niamh.Cullen@BuroHappold.com)  
**Subject:** RE: FW: 07211835 - Wastewater PDE -MMU Library

Good Afternoon

Your enquiry has been logged and sent to our engineer Gary Jaundrell and his contact number is 01925 429099. Our service Level agreement is to respond to you within 10 working days.

Many thanks



Laura Owens  
Customer Advisor Advanced  
Developer Services & Metering  
Customer Services  
**T:** 0345 026 8989 option 4  
[unitedutilities.com](http://unitedutilities.com)

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**From:** Niamh Cullen <[Niamh.Cullen@BuroHappold.com](mailto:Niamh.Cullen@BuroHappold.com)>  
**Sent:** 11 August 2025 10:03  
**To:** Jaundrell, Gary <[Gary.Jaundrell@uuplc.co.uk](mailto:Gary.Jaundrell@uuplc.co.uk)>  
**Cc:** Phil Anwyl <[Phil.Anwyl@BuroHappold.com](mailto:Phil.Anwyl@BuroHappold.com)>; P065290 MMU Library Redesign <[065290@burohappold.onmicrosoft.com](mailto:065290@burohappold.onmicrosoft.com)>  
**Subject:** RE: 07211835 - Wastewater PDE -MMU Library

Good morning Gary,

Thank you for letting me know!

Please see associated documents to the email below in the following link:

 [250811 Information for United Utilities](#)

Please let me know if you can access the above or if you have any questions.

Many thanks,

Niamh Cullen (she/her)

Infrastructure Engineer  
Buro Happold | Cities – Infrastructure

T: 0113 204 2979

M: +447714152407

[Image is no longer available]

---

**From:** Jaundrell, Gary <[Gary.Jaundrell@uuplc.co.uk](mailto:Gary.Jaundrell@uuplc.co.uk)>  
**Sent:** 11 August 2025 09:45  
**To:** Niamh Cullen <[Niamh.Cullen@BuroHappold.com](mailto:Niamh.Cullen@BuroHappold.com)>  
**Cc:** Phil Anwyl <[Phil.Anwyl@BuroHappold.com](mailto:Phil.Anwyl@BuroHappold.com)>; P065290 MMU Library Redesign  
<[065290@burohappold.onmicrosoft.com](mailto:065290@burohappold.onmicrosoft.com)>  
**Subject:** RE: 07211835 - Wastewater PDE -MMU Library

**\*\*External Email. This email originated from outside Buro Happold.\*\***

Hi Niamh

I didn't receive this email, I'm afraid.

This could be due to the file size limit of 10mb.

Could you please forward the previous email again, utilising a file sharing system like onedrive or wetransfer to ensure these are received.

Kind regards

|                                |                                                              |
|--------------------------------|--------------------------------------------------------------|
| [Image is no longer available] | <b>Gary Jaundrell</b>                                        |
|                                | Developer Engineer                                           |
|                                | Developer Services & Metering                                |
|                                | Customer Services                                            |
|                                | <b>T: 01925 429099</b>                                       |
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**From:** Niamh Cullen <[Niamh.Cullen@BuroHappold.com](mailto:Niamh.Cullen@BuroHappold.com)>  
**Sent:** 11 August 2025 09:40  
**To:** SewerAdoptions <[SewerAdoptions@uuplc.co.uk](mailto:SewerAdoptions@uuplc.co.uk)>; Jaundrell, Gary <[Gary.Jaundrell@uuplc.co.uk](mailto:Gary.Jaundrell@uuplc.co.uk)>  
**Cc:** Phil Anwyl <[Phil.Anwyl@BuroHappold.com](mailto:Phil.Anwyl@BuroHappold.com)>; P065290 MMU Library Redesign <[065290@burohappold.onmicrosoft.com](mailto:065290@burohappold.onmicrosoft.com)>  
**Subject:** RE: 07211835 - Wastewater PDE -MMU Library

Good morning Gary,

Please can you confirm receipt of the email below?

Let me know if you have any questions or require any further information.

Many thanks,

Niamh Cullen (she/her)

Infrastructure Engineer  
Buro Happold | Cities – Infrastructure

T: 0113 204 2979

M: +447714152407

[Image is no longer available]

---

**From:** Niamh Cullen <[niamh.cullen@burohappold.com](mailto:niamh.cullen@burohappold.com)>  
**Sent:** 05 August 2025 16:29  
**To:** [seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk); [gary.jaundrell@uuplc.co.uk](mailto:gary.jaundrell@uuplc.co.uk)  
**Cc:** Phil Anwyl <[Phil.Anwyl@BuroHappold.com](mailto:Phil.Anwyl@BuroHappold.com)>; P065290 MMU Library Redesign  
<[065290@burohappold.onmicrosoft.com](mailto:065290@burohappold.onmicrosoft.com)>  
**Subject:** RE: 07211835 - Wastewater PDE -MMU Library

Good afternoon Gary,

Thank you for your time yesterday, it was great to meet you.

Apologies for the delay in sending across the attached information. Please see attached:

1. Slides presented in the meeting
2. Response received from UU clean water team
3. Existing drainage plan used to create the existing drainage hydraulic model (UPRN-BHE-XX-XX-DR-C-003100)
4. Results from hydraulic model for both new build and refurbishment schemes
5. Sketches showing hydraulic model existing network and assumed catchments plan

As discussed in the meeting, the site is heavily constrained by existing utilities including key infrastructure within the adjacent footpath and highway (Oxford Road). Regarding the drainage hierarchy, infiltration, connection to watercourse and connection the existing surface water sewer have been discounted due to the feasibility of each option. We are proposing to maintain the existing connections to the combined water sewer as this is considered the most feasible solution for the proposed development.

MCC highways have been consulted regarding the surface water sewer within Oxford Road. They advised that they can't approve works on Oxford Road without looking at alternative first due to the disruption to the network. LLFA have also been consulted and agreed with the design principles proposed to maintain existing connections and understood the potential disruption to Oxford Road.

In addition, based on CCTV survey information, the existing drainage hydraulic model has been modelled using InfoDrainage and analysed using site-specific FEH rainfall data (2022). Please see attached results for both main scheme and refurbishment scheme. For the main scheme (MMU LIBRARY REDESIGN – EXISTING DRAINAGE NETWORK RESULTS & 065290-BHE-XX-XX-SK-C-003000), we are proposing to provide a 50% betterment on existing rates based on a 1 in 2 year, 60-minute storm event which equates to 50% of 44 l/s = **22 l/s** and maintaining existing connections to the public combined water sewer (via a connection to the north of the site).

Regarding the All Saints West refurbishment scheme, since there are no below ground works to the refurbishment building and the impermeable area is not changed, we propose to utilise existing drainage and connections to the south of the site with existing discharge rates (calculated as approximately 11 l/s based on a 1 in 2 year, 60-minute storm event).

Based on our discussions, I understand that you are happy in principle with 50% betterment on existing discharge rates and maintaining existing connection points, subject to assessing the hydraulic model results attached. In addition, you intend to contact United Utilities' rainwater management team regarding the impracticality of connecting to the surface water sewer within Oxford Road.

Please can you provide your comments based on our discussions yesterday and on the above information?

Many thanks,

Niamh Cullen (she/her)

Infrastructure Engineer  
Buro Happold | Cities – Infrastructure

T: 0113 204 2979

M: +447714152407

[Image is no longer available]

---

**From:** [seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk) <[seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk)>

**Sent:** 01 August 2025 15:22

**To:** Niamh Cullen <[niamh.cullen@burohappold.com](mailto:niamh.cullen@burohappold.com)>

**Cc:** Phil Anwyl <[phil.anwyl@burohappold.com](mailto:phil.anwyl@burohappold.com)>

**Subject:** RE: 07211835 - Wastewater PDE -MMU Library

**\*\*External Email. This email originated from outside Buro Happold.\*\***

Hi Niamh

12pm Monday works for me.

I'll await the invite to [gary.jaundrell@uuplc.co.uk](mailto:gary.jaundrell@uuplc.co.uk)

Kind regards



**Gary Jaundrell**

Developer Engineer

Developer Services & Metering

Customer Services

**T:** 01925 429099

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----- Original Message -----

**From:** Niamh Cullen [[niamh.cullen@burohappold.com](mailto:niamh.cullen@burohappold.com)]

**Sent:** 01/08/2025 11:54

**To:** [seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk)

**Cc:** [conor.donaghy2@uuplc.co.uk](mailto:conor.donaghy2@uuplc.co.uk); [phil.anwyl@burohappold.com](mailto:phil.anwyl@burohappold.com)

**Subject:** RE: 07211835 - Wastewater PDE -MMU Library

Good morning Gary,

Thank you for your email and letting us know about Conor.

A meeting next week would be great – I'll send an invite for 12pm on Monday if that is good for you?

Many thanks,

Niamh Cullen (she/her)

Infrastructure Engineer

Buro Happold | Cities – Infrastructure

T: 0113 204 2979

M: +447714152407

[Image is no longer available]

---

**From:** [seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk) <[seweradoptions@uuplc.co.uk](mailto:seweradoptions@uuplc.co.uk)>  
**Sent:** 01 August 2025 11:22  
**To:** Niamh Cullen <[niamh.cullen@burohappold.com](mailto:niamh.cullen@burohappold.com)>  
**Cc:** [conor.donaghy2@uuplc.co.uk](mailto:conor.donaghy2@uuplc.co.uk); Phil Anwyl <[phil.anwyl@burohappold.com](mailto:phil.anwyl@burohappold.com)>  
**Subject:** RE: 07211835 - Wastewater PDE -MMU Library

**\*\*External Email. This email originated from outside Buro Happold.\*\***

Hi Niamh,

Thank you for your enquiry.

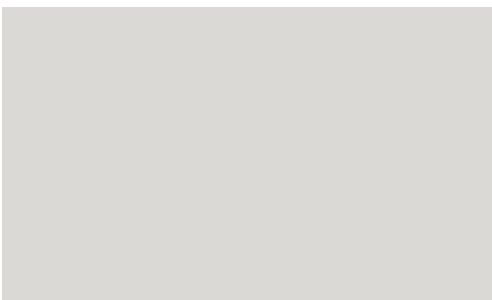
Conor no longer works within developer services.

I would be more than happy to attend a meeting to be brought up to speed on the development and to discuss the connection points and associated constraints.

I am free any day next week between 12pm and 3:30pm, if this is suitable.

If so, please send a Teams meeting request directly to [gary.jaundrell@uuplc.co.uk](mailto:gary.jaundrell@uuplc.co.uk)

Kind regards



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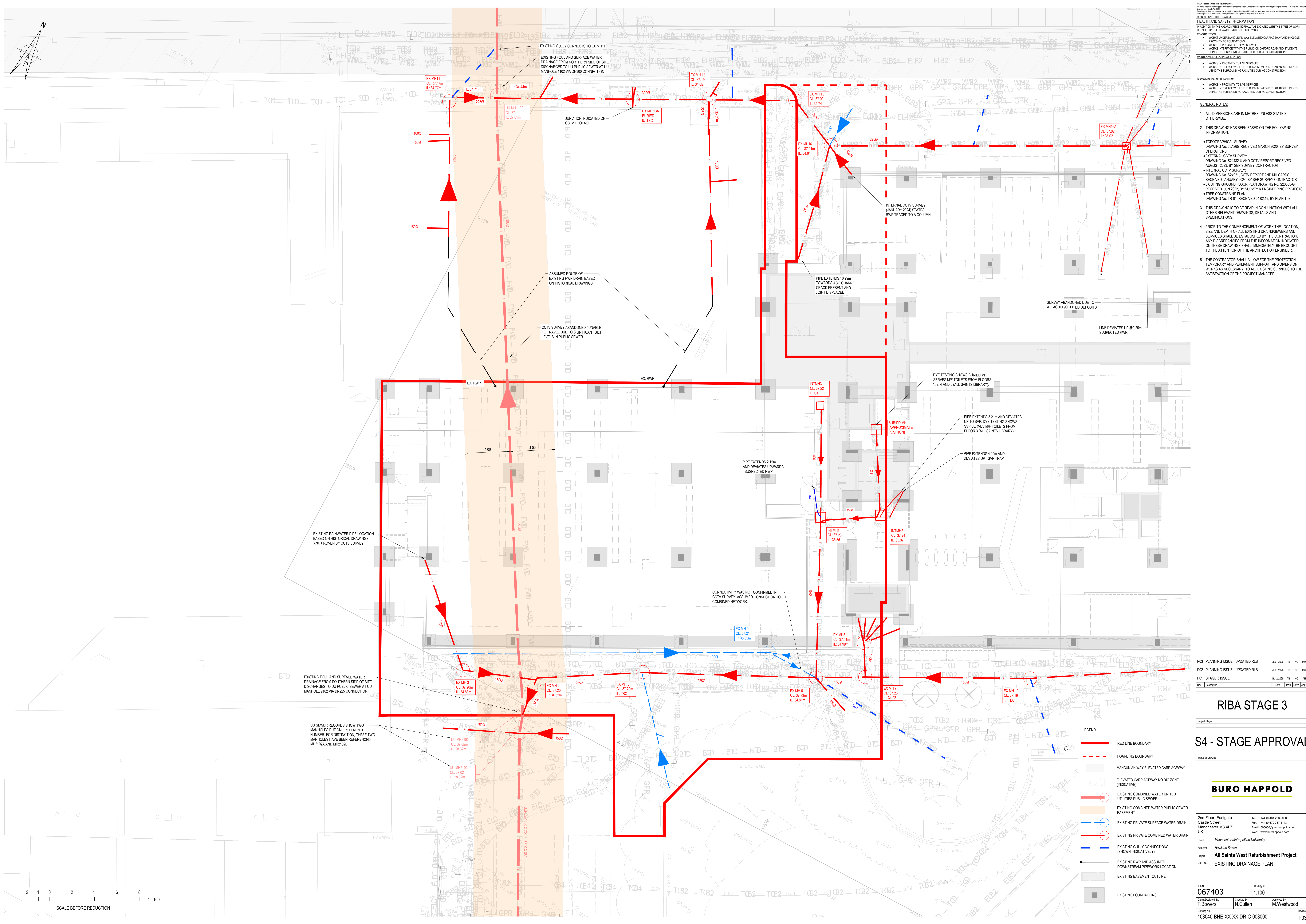
indirect or consequential damages as a result of any virus being passed on, or arising from the alteration of the contents of this message by a third party.

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Warrington, WA5 3LP  
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## Appendix B – Existing Drainage Plan Drawing



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IN ADDITION TO THE HAZARD IDENTIFICATION NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING:

**CONSTRUCTION**

- WORKS UNDER MANCUNIAN WAY ELEVATED CARRIAGEWAY AND IN CLOSE PROXIMITY TO FOUNDATIONS
- WORKS IN PROXIMITY TO LIVE SERVICES
- WORKS INTERFERE WITH THE PUBLIC ON OXFORD ROAD AND STUDENTS USING THE SURROUNDING FACILITIES DURING CONSTRUCTION

**MAINTENANCE/OPERATION**

- WORKS IN PROXIMITY TO LIVE SERVICES
- WORKS INTERFERE WITH THE PUBLIC ON OXFORD ROAD AND STUDENTS USING THE SURROUNDING FACILITIES DURING CONSTRUCTION

**DECOMMISSIONING/DEMOLITION**

- WORKS IN PROXIMITY TO LIVE SERVICES
- WORKS INTERFERE WITH THE PUBLIC ON OXFORD ROAD AND STUDENTS USING THE SURROUNDING FACILITIES DURING CONSTRUCTION

**GENERAL NOTES:**

- ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.
- THIS DRAWING HAS BEEN BASED ON THE FOLLOWING INFORMATION:
  - TOPOGRAPHICAL SURVEY: DRAWING NO. 20A255 RECEIVED MARCH 2020, BY SURVEY OPERATIONS
  - EXTERNAL CCTV SURVEY: DRAWING NO. 24A252J AND CCTV REPORT RECEIVED AUGUST 2023, BY SEP SURVEY CONTRACTOR
  - INTERNAL CCTV SURVEY: DRAWING NO. 24A252J, CCTV REPORT AND MH CARDS RECEIVED JANUARY 2024, BY SEP SURVEY CONTRACTOR
  - EXISTING GROUND FLOOR PLAN DRAWING NO. 22A255JF RECEIVED JAN 2022, BY SURVEY & ENGINEERING PROJECTS
  - TREE CONSTRAINTS PLAN: DRAWING NO. TR-01 RECEIVED 04.02.19, BY PLANT-IE
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS, DETAILS AND SPECIFICATIONS.
- PRIOR TO THE COMMENCEMENT OF WORK THE LOCATION, SIZE AND DEPTH OF ALL EXISTING DRAINSEWERS AND SERVICES SHALL BE ESTABLISHED BY THE CONTRACTOR. ANY DISCREPANCIES FROM THE INFORMATION INDICATED ON THESE DRAWINGS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OR ENGINEER.
- THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT AND DIVERSION WORKS AS NECESSARY, TO ALL EXISTING SERVICES TO THE SATISFACTION OF THE PROJECT MANAGER.

P03 PLANNING ISSUE - UPDATED RLB 28/01/2025 TB NC MH

P02 PLANNING ISSUE - UPDATED RLB 23/01/2025 TB NC MH

P01 STAGE 3 ISSUE 19/12/2025 TB NC AH

| Rev | Description | Date | Issd | Rev'd | App'd |
|-----|-------------|------|------|-------|-------|
| 1   |             |      |      |       |       |

**RIBA STAGE 3**

Project Stage

**S4 - STAGE APPROVAL**

Status of Drawing

**BURO HAPPOLD**

2nd Floor, Eastgate  
Castle Street  
Manchester M3 4LZ  
UK  
Tel: +44 (0)161 233 5000  
Fax: +44 (0)870 787 4143  
Email: 000000@burolhappold.com  
Web: www.burolhappold.com

Client: Manchester Metropolitan University

Architect: Hawkins Brown

Project: All Saints West Refurbishment Project

Dwg Title: EXISTING DRAINAGE PLAN

| Job No | Scale |
|--------|-------|
| 067403 | 1:100 |

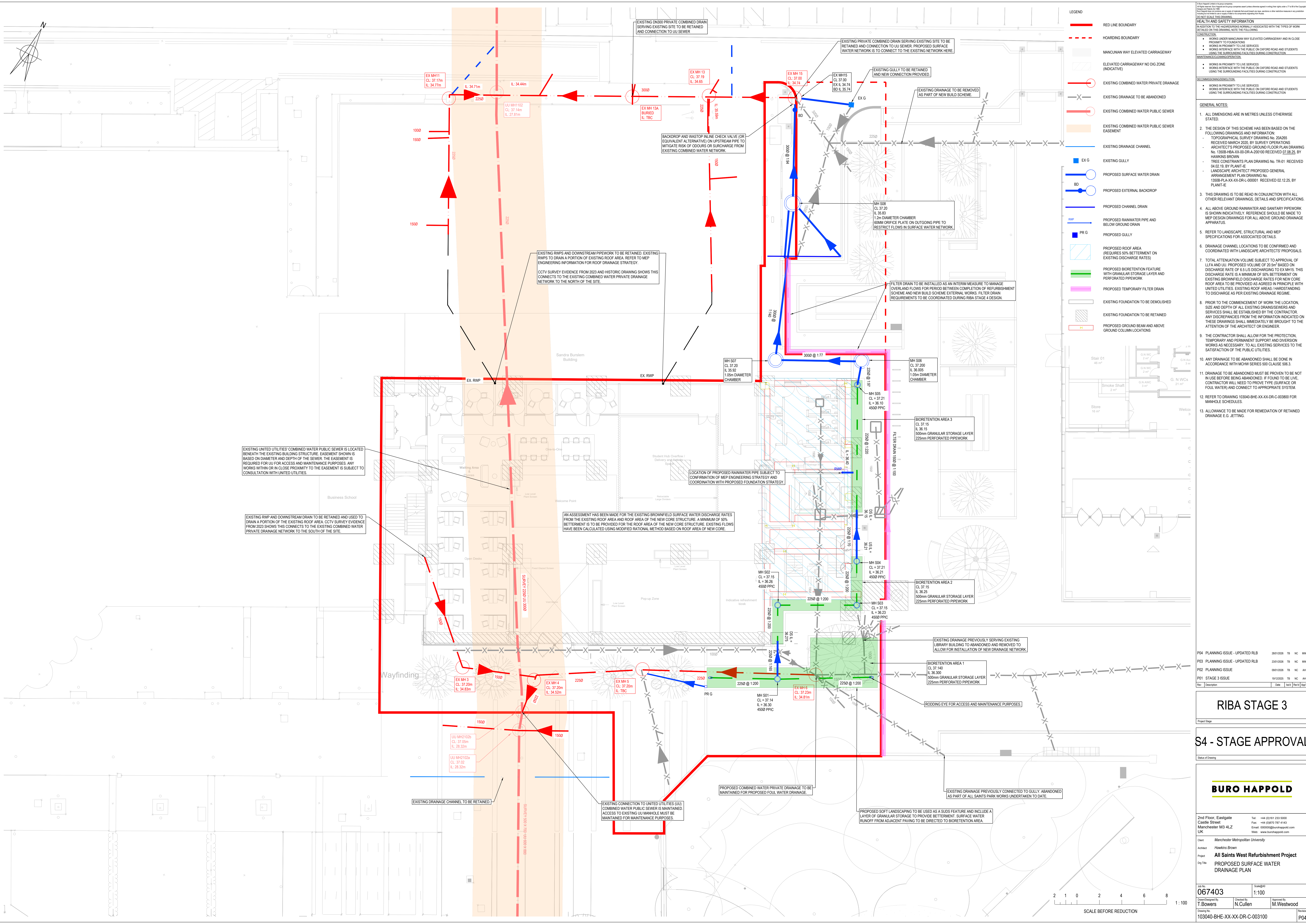
Drawn/Checked/Approved By:  
T.Bowers/N.Cullen/M.Westwood

Drawing No: 103040-BHE-XX-XX-DR-C-003000

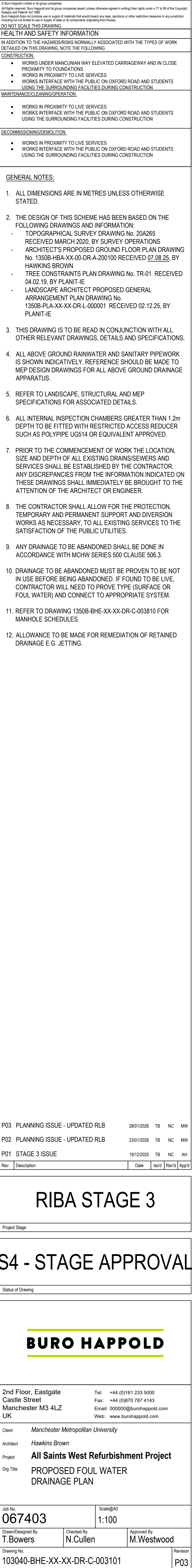
Revision: P03

## **Appendix C – Proposed Drainage Strategy Drawings**

### **Appendix C.1 – Surface Water Drainage Strategy**



## Appendix C.2 – Foul Water Drainage Strategy



## Appendix C.3 – Surface and Foul Water Manhole Schedule

