

Project Name	Plot H3, AccorTribe Hotel, Manchester
Project Number	1513
Document	Drainage Technical Note
Date	13 th September 2024
Revision	V1
Prepared By	SK

INTRODUCTION

This technical note has been prepared for the purposes of the below ground drainage package prepared by Spillways Ltd (“SPWY”)

The drainage drawing live at the time of preparing this document is 1513-SPW-Z0-ZZ-DR-C-6000 - Below Ground Drainage - C21 [Issued for As-Built Information].

The development site of Plot H3 forms part of a wider masterplan development prepared by AECOM. SPWY were appointed to prepare a temporary drainage design for Plot H3 which would eventually be upgraded/modified by others when Plot H5 commences. This principle of a temporary design vs permanent design was approved formally between Manchester Airport Group (“MAG”) and AECOM. See Appendix A for correspondence email exchanged with an approval from MAG.

TEMPORARY VS PERMANENT DESIGN PRINCIPLES

The temporary design accounts for a catchment area of 5660m² within the blue line boundary shown on AECOM drawings and restricted to a discharge rate of 11.5 l/s for up to and including the 1 in 100 year + 40% climate change event. The entire Coach Area is excluded from the aforementioned area and the coach area continues to free drain by gravity into the existing MAG drainage network. This is presumed due to the Coach Area giving space to the future Plot H5 building and major ground/structural works are anticipated in this area.

The permanent design accounts for an extended catchment area further south of the blue line boundary which is for the Plot H5 development and also includes the coach area. This new catchment is proposed to merge with the temporary drainage design at a restricted rate into manhole EXTN-SWMH-09. The temporary drainage design will need to be upgraded where needed to suit the additional catchment area and the new combined discharge rate for both Plot H3 and H5 would be increased to 20 l/s forming the principle permanent discharge rate.

The drainage model will be required to be re-modelled as part of future plot H5 permanent works by the appointed engineer whilst factoring in:

- the new catchment area
- the increased discharge rate
- future plot H5 specific drainage design based on landscape and architectural drawings

TEMPORARY DESIGN STRATEGY

SPWY have designed the temporary below ground drainage which comprises of capturing surface water on hardstanding surfaces such as roofs and paved areas; equally soft landscaped areas have been accounted

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within the catchment area where any water that cannot be infiltrated into the ground. The full catchment area is that shown as the blue line boundary in AECOM drawings for plot H3 and the coach area is excluded from the area. Collector units such as gullies, gutters, channels and filter drains will intercept the surface water and convey them into the below ground drainage network by gravity.

Large diameter carrier pipes convey surface water towards a flow control chamber referenced EXTN-SWMH-13 which is restricted to 11.5 l/s.

Attenuation tanks have been introduced to be able to store the surface water for up to and including the 1 in 100 year + 40% climate change storm events. Tanks have been split into two separate units to account for soft/hard landscaped areas and in particular tree pits have had to be avoided due to below ground clashes.

The entire drainage network is designed that it does not flood/ breach ground finished level for up to and including the 1 in 100 year + 40% climate change event.

A Marsh NSBP15 (CLASS 1) Bypass Separator has been installed inline on the drainage network prior to surface water being discharged into the outfall.

Foul water is conveyed by gravity south of the development site. An approved flow measuring chamber has been installed near the outfall chamber (by specialist).

APPENDIX A

Watton, Joseph

From: Darren Lewis <Darren.Lewis@manairport.co.uk>
Sent: 27 July 2021 10:02
To: Watton, Joseph
Cc: Rumsey, Chris (Chris.Rumsey@fgould.com); Bamford, Vin; Mike Curry
Subject: [EXTERNAL] RE: H3 Hotel (Central Business District) - Proposed Discharge Rates

Hi James,

I'm good thanks, I hope you are too.

I have reviewed the proposals below and can confirm I'm happy for you to proceed on this design basis.

Please be advised MAG must be consulted on any variations to the mentioned design.
Surface Water Management Plans to be considered for subsequent design stages.

Catch up soon.

Kind Regards

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From: Watton, Joseph <joseph.watton@aecom.com>
Sent: 23 July 2021 14:20
To: Darren Lewis <Darren.Lewis@manairport.co.uk>
Cc: Rumsey, Chris (Chris.Rumsey@fgould.com) <Chris.Rumsey@fgould.com>; Bamford, Vin <vin.bamford@aecom.com>
Subject: H3 Hotel (Central Business District) - Proposed Discharge Rates

**WARNING: This email originated outside of MAG.
DO NOT CLICK links or attachments unless you recognise the sender and know the content is safe.**

Hi Darren,

Hope you are well.

We have discussed this scheme in the past but I am not sure we ever formally agreed to the discharge rates for surface water. MCC Planning have requested that we provide approval in principle to these rates from MAG to allow them to consent the scheme.

We are proposing a slightly greater than 50% betterment to the estimated existing discharge rates which can be seen in table 1 below.

Storm Event	Rainfall intensity (mm/hr)	Existing Run-off Rate (l/s)
1 in 1yr	28.0	57.7
1 in 2yr	36.2	74.6
1 in 30yr	68.6	141.3
1 in 100yr	89.3	184.0

Table 1 – Existing Run-off Rates

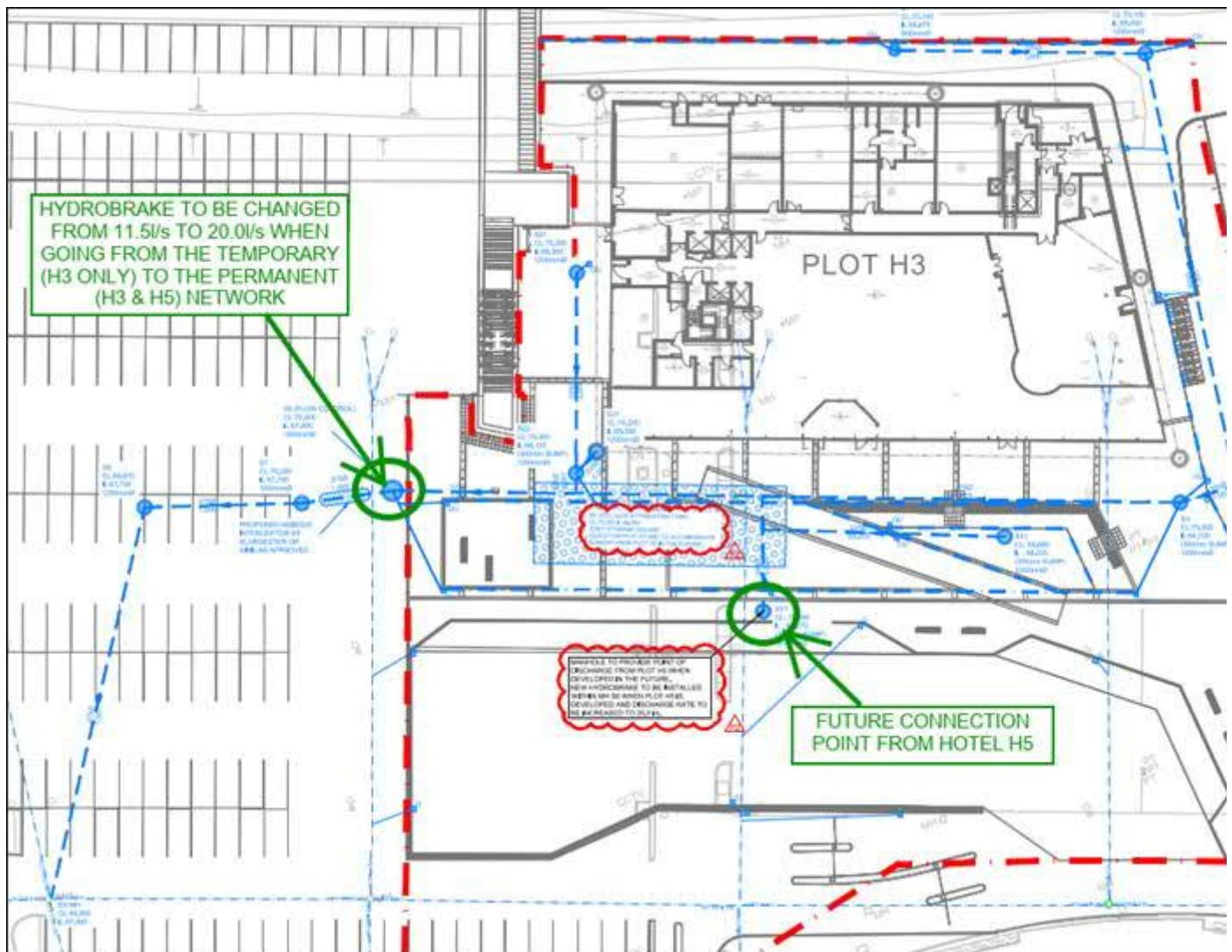
We are proposing the maximum discharge rates shown in Table 2

Storm Event	Existing Run-off Rate (l/s)	Proposed Discharge Rate (l/s) (50% of Existing) – Temporary Network	Proposed Discharge Rate (l/s) (50% of Existing) – Permanent Network
1 in 1yr	57.7	18.9	28.8
1 in 2yr	74.6	24.4	37.3
1 in 30yr	141.3	46.2	70.6
1 in 100yr + 40%CC	184.0 (no CC allowance)	59.8	92.0

Table 2 – Proposed Discharge Rates (Temporary & Permanent)

The reason we have a temporary and a permanent network is because the attenuation tank we have proposed will be in place to facilitate the future run-off from Hotel H5. H5 will not be in place for a period of time so prior to this we have a temporary network (H3 Hotel only) with a Hydrobrake that will need to be replaced on completion of the H5 hotel to increase the discharge rate from 11.5 l/s to 20 l/s.

You will note that these discharge rates are lower than any of those listed in Table 2 above. This is to ensure that we do not exceed the equivalent run-off volume for a 1 in 100-yr 6 hour event when compared to the existing site as this is another MCC condition we need to satisfy. Below is an annotated screenshot of the network that may assist to explain the text above.



Attached are the MD files and SW layout & catchment plans for reference.

Hopefully all is in order for you to confirm acceptance but happy to discuss if required.

Kind regards,

Joe

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