

14th September 2020

X1902068

London Borough of Hillingdon
Civic Centre
High Street
Uxbridge
Middlesex
UB8 1UW

Meadow High School – App Ref 3348/APP/2020/1589

Dear Vicky

Further to your comments on the drainage strategy AKSWard would make the following comments and discussion points. We have separated the items for ease.

Comment: Qbar, is at 2l/s.

Response: Please see the attached document which shows that the Qbar for the combined site is 2.8l/s.

Comment: Total run off should be limited to Qbar.

Response: AKSWard have followed the Department for Environment, Food and Rural Affairs, Sustainable Drainage Systems, Non-statutory technical standards for sustainable drainage systems, point S5.

“S5 Where reasonably practicable, for developments which have been previously developed, the runoff volume from the development to any highway drain, sewer or surface water body in the 1 in 100 year, 6 hour rainfall event must be constrained to a value as close as is reasonably practicable to the greenfield runoff volume for the same event, but should never exceed the runoff volume from the development site prior to redevelopment for that event.”

The school is located on a brownfield site and given the phasing of construction we have split the catchment to ensure the minimum area of the site is pumped. Given the minimum rate a pump can discharge we would see this a reasonably practical approach to limit the flow off site and prevent the water being attenuated twice.

As an alternative we would propose to pump the new building to the Hydrobrake chamber (at 2l/s) and limit the flow to 3l/s (Qbar) at the Hydrobrake. This will limit the flow off site to 3l/s for the normal storms but a high level overflow will be provided for the more severe 1:30 and 1:100 storms to limit it to the figures outlined in the drainage strategy. 6.4l/s and 9l/s, respectively. Would this approach be acceptable to Hillingdon?

Comment: Flooding is present in the 1:30 and 1:100 models.

Response: This is very minor, 0.019m³ in 1:30 and 0.11m³ 1:100+40% climate change. As the catchment area of the car park has been overestimated so in reality it will not be apparent. We will update the calcs.

Comment: The design does not have an allowance for climate change.



Response: This is not correct; climate change is considered in the design.

Comment: Living Roofs and Walls to be incorporated into the design.

Response: Living walls are being provided to the sports hall walls, an additional comment is being sent back regarding the use of green roofs.

Comment: More rain gardens and sustainable landscaping features to be provided.

Response: As previously noted, the following items prevent them being used in this special educational needs school:

- Autistic children do not respond well to rainwater harvesting as the colour can be slightly different from mains water which can cause them distress.
- The presence of children with special needs also means that open water storage methods are not appropriate. The extent of space for the landscaping on the site means that there is not space to incorporate open water storage areas and still provide the quality teaching environment offered.

Comment: The surface water should discharge directly to the water course:

Response: The owner of the land between the watercourse and the site has declared that they would not accept a pipe passing across their land. The public surface water sewer which is proposed to be connected into discharges directly into the water course. This is noted on the appended sketch.

Comment: Provide levels of the proposed development.

Response: Levels can be found on the drainage drawings which have appended to this letter for ease.

Comment: Flood exceedance routes to be mapped.

Response: Please see the flood exceedance drawing appended to this letter.

We trust that the above satisfies your questions, but should you require further clarification then please do not hesitate to contact us.

Yours Sincerely,



David Daly
Technical Director
For and on behalf of AKSWard

The surface water then discharges to the water course in this location.

This manhole is the surface water manhole which we discharge into.

The width of the displayed area is 500m and the centre of the map is located at OS coordinates 506250,181750

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Based on the Ordnance Survey Map with the Sanction of the controller of H.M. Stationery Office, License no. 100019345 Crown Copyright Reserved.

AKSWard
Surface Water Discharge Point
09.09.20

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GENERAL NOTES

Exceedance flood
flow path



PT1	Issue for information	SR	DD	14.08.20
Rev	Amendment	On	Chd	Date
01	Initial			
02	Revised			
03	Final			
04	As built			
05	As built			
06	As built			
07	As built			
08	As built			
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100	As built			

Project

Meadow High School

Title

Flood Exceedance Diagram
Phase 01

Reviewed Scheme

GT

Date

14.09.20

Scale

1:250

Project No

X192068

Project Ref

01985 240071

Zone

Level

Type

Flow

Dir

Rev

MHS AKSW XX XX DR C 9220

P01

Client

Galliford Try

AKSward

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GENERAL NOTES

- All setting out to be in accordance with the Architects drawings. Any discrepancies between the Engineers and the Architects drawings to be referred to the Architect before proceeding. Dimensions must not be scaled.
- All drainage to be installed in accordance with relevant Building Regulations documents and Current Sewers for Adoption where applicable.
- Connections to Public sewers to be agreed and inspected by Water Authority.
- Invert level, size and cover levels to existing manholes and sewers to be checked prior to any construction. Any discrepancies to be reported immediately.
- Invert to base of soil stack bends to be 450mm below lowest branch connection for up to 3 storeys buildings. For buildings up to 5 storeys the invert to base of soil stack bends should be not less than 750mm.
- All RWP and Foul Water drain point setting out is to be confirmed by Architect.
- All RWP & SVP sizes & setting out by Architect / M&E Engineer. All below ground connections to match above ground outlet size, Min 100/110mm diameter.
- Foul drains to project 100mm above finished floor level.
- All internal Manholes and Inspection Chambers to have double sealed recessed covers to suit floor finishes by Architect.
- All external covers in footpaths and roads in non tarmac areas to have recessed trays to suit the paving material.
- Refer to drainage specification for pipe materials.
- All pipework to be 100/110mm UNO. Refer to note 7 connection sizes.
- All foul and surface water drainage stacks to have above ground rodding access, refer to above ground drainage layout by others.
- This drawing has been produced in colour and should be reproduced in colour for clarity.
- A CCTV Survey and report in WINCAN format for all new drainage will be required before the "As Built" drawings will be issued.

- Key
- Paved area Gully
 - Bin Store Gully
 - Storm Polypropylene Inspection Chamber
 - Storm Concrete Manhole
 - Foul Polypropylene Inspection Chamber
 - New Foul Sewer
 - New Surface Water Sewer
 - New Sewer Through Foundations
 - New channel drain and sump box
 - Existing Drainage
 - Existing Manholes
 - Existing Foul Sewer
 - Existing Surface Water Sewer

P06	Tank coordinates added	RG	DD	02.09.20
P05	Drainage Amended to suit comments	RG	DD	09.07.20
P04	Issued for CP	RG	NJ	03.07.20
P03	Updated for costing	RG	NJ	05.06.20
P02	Issue for planning	RG	NJ	28.04.20
P01	Issue for information	RG	GT	20.03.20

Rev.	Amendment	Dwn	Chkd	Date
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Drg. Status	Cont. Proposal	Suitability	S3
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Client **Galliford Try**

Project **Meadow High School**

Title **Drainage Layout
Phase 01**

Reviewed Scheme GT Date 20.03.20

Reviewed Final Date

Scales at A1 1:250 Project No. **X192068**

Project Ref. Originator Zone Level Type Role Drg No. Rev.

MHS AKSW XX XX DR C 9201 P06



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	New Sewer Through Foundations
	New channel drain and sump box
	Existing Drainage
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P05	Drainage amended to suit comments	RG	DD	09.07.20
P04	Issued for CP	RG	NJ	03.07.20
P03	Updated for costing	RG	NJ	05.06.20
P02	Issue for planning	RG	NJ	28.04.20
P01	Issue for information	RG	GT	20.03.20

Rev.	Amendment	Dm	Chkd	Date
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Drg Status	Cont. Proposal	Suitability	S3
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Client **Galliford Try**

Project **Meadow High School**

Title **Drainage Layout
Phase 02**

Reviewed Scheme	GT	Date	20.03.20
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Reviewed Final		Project No.	X192068
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Project Ref.	Originator	Zone	Level	Type	Role	Drg No.	Rev.
MHS	AKSW	XX	XX	DR	C	9202	P04

