



DRAINAGE STRATEGY

PROPERTY ADDRESS

Victoria Mill
10 Lower Vickers Street
Manchester
M40 7LJ

CLIENT

Report Prepared for
Virtu Homes Ltd

REPORT REFERENCE

23-/SWH

DATE

October 2023



1. Introduction

- 1.1.** ADS structural have been appointed to prepare a drainage strategy in support of a proposed residential development of a section of the ground floor at Victoria Mill, 10 Lower Vickers Street, Manchester, M40 7LJ.
- 1.2.** The application site is rectangular in shape and was previously noted as a previously re-developed mill conversion.
- 1.3.** The national Grid reference for the site is 385879,399235 and the nearest postcode to the site is M40 7LJ.
- 1.4.** The site extends to approximately 3195m² and is a brownfield site.
- 1.5.** The scheme is for the conversion of part of the lower ground floor into residential apartments along with associated infrastructure.

2. Proposed Drainage Strategy

- 2.1.** In order to demonstrate the development is of low risk the report should show:
 - That it will be feasible to balance surface water run-off to the existing run-off rate in terms of a brownfield development for all events up to the 1 in 100-year storm (including a 45% allowance for climate change) and set out how this will be achieved
 - What sustainable drainage techniques (SuDS) will be used with any obstacles to their use clearly justified
- 2.2.** The primary flood risk generated by the new development is most likely to be the risk posed to others by surface water run-off. The proposed development will marginally increase the amount of hardstanding across the site which will therefore generate similar surface water run-off rates/volumes which may need to be attenuated within the site boundary.
- 2.3.** The surface water drainage developments for any development site should aspire to be such that the volumes and peak flow rates of surface water leaving a developed site are no greater than the rates prior to the development.
- 2.4.** For a new development it may be necessary to provide surface water storage and/or infiltration to limit and reduce both the peak rate of discharge from the site and the total volume discharged from the site.
- 2.5.** Climate change (CC) will be considered by increasing the rainfall intensity by 40% in line with the Environment Agency and NPPF Technical Guidance.



3. Existing Site Drainage

- 3.1.** The site is currently unused and has previously occupied by an existing converted mill. There is an existing combined drain located just outside of the curtilage of the dwelling, ultimately out falling into the adjacent adopted drain.

It should also be noted that there is an existing canal and overflow/bypass surface water culvert which runs along the southern boundary of the site.

- 3.2.** Foul drainage is to be discharged via a new internal drainage system which out fall into the existing drainages that follows the perimeter of the site.
- 3.3.** The existing drainage details can be found in Appendix A

4. Consideration of the Sustainable Drainage Systems

- 4.1.** Following the Hierarchy of Sustainable Drainage Systems (SUDS) the following options must be considered.

- Soakways for roof run-off and permeable surfacing for roads, drives, car parks and private access roads
- Discharge to local watercourse
- Discharge to local sewer
- Discharge to adjacent land drains and ponds

- 4.2.** The first option to be considered must be infiltration into the ground. Even when there are alternative sewer connections or water courses available, infiltration must be utilised unless it is unfeasible.

It should be noted that the development does not include for the alteration and or addition to the surface water drainage system and as such no additional surface water flows will be entering the existing drainage network.

Consideration of the surface water flows could be accommodated within external courtyard area where flows could be attenuated prior to discharge to the existing network.



- 4.3.** The proposed storage would be catered for within the oversized pipes to cater for storms up to and including the 1 in 100 yr. 6-hour storm event +45% CCF.

5. Proposed Drainage Design

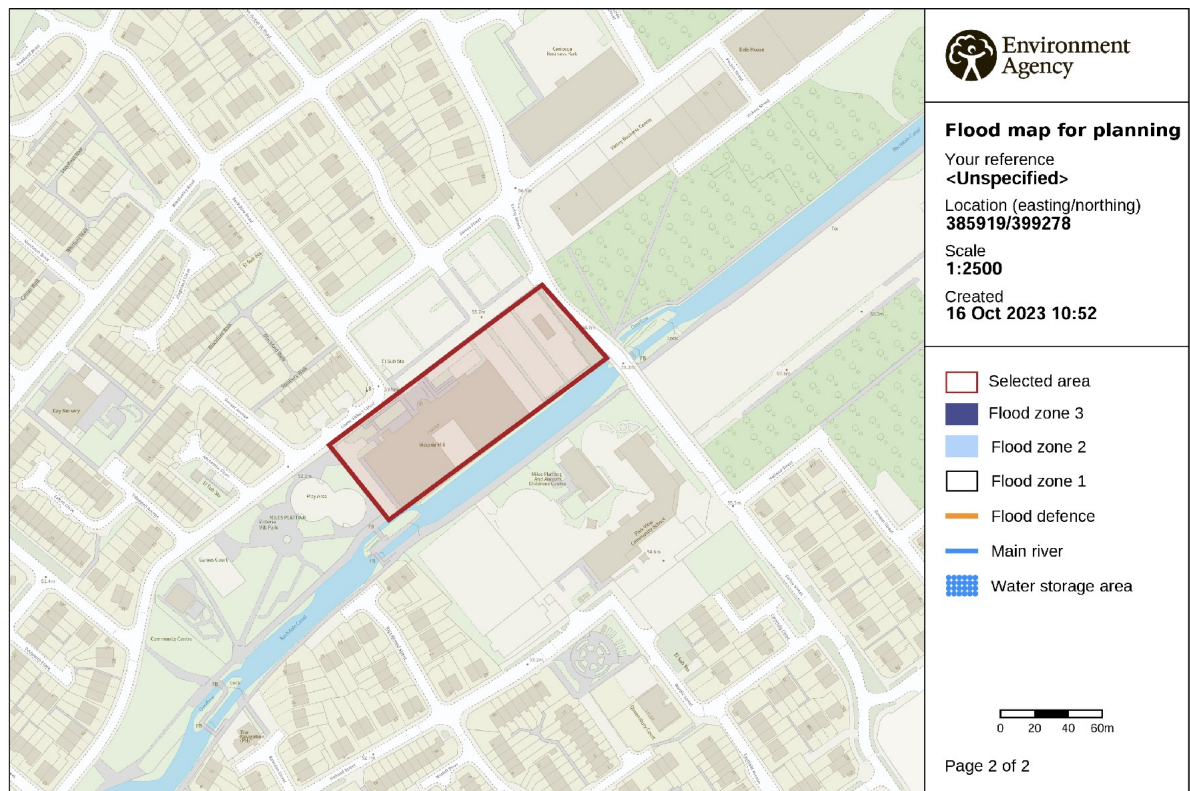
- 5.1.** The solution being considered to provide the attenuation via the use of a crate system located in the central courtyard area water pipes within the system followed by an orifice plate on the outfall manhole to restrict the flows.
- 5.2.** The design seeks to utilise a traditional piped drainage system. Whilst not the most sustainable solution, at this stage it is one that we are confident could be delivered To enable completion of the works
- 5.3.** The outline drawing shows the surface & foul water on separate systems. The surface water flows will be directed to the culverted water course running along the southern boundary. Foul water runs will discharge to a new wastewater treatment plant.
- 5.4.** In calculating the run-off at this stage, to ensure robustness, we have assumed the following:
- No rainwater harvesting / Water butts.
- 5.5.** In order to ensure a robust approach, it has been assumed that 100% of the rainwater falling on the proposed impermeable areas for the roof and parking areas only to enter the system.
- 5.6.** Below ground storage will be provided up to and including the 1 in 100-year storm event plus an allowance of 45% increase for climate change.
- 5.7.** Consultation has be made with United Utilities to discuss the implications of connecting into their system.



FLOOD RISK ASSESMENT

We have assessed the potential flood risk on this development and according to the Environment Agency mapping the site falls with flood zone1 (low risk of potential flooding)

We have appended the flood mapping below



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6. Summary

- The development is currently a brownfield site.
- Surface water run-off from the roof and parking area within the proposed development will be the existing system discharging into the combined drainage network
- Storage for the impermeable areas will be provided up to and including the 1 in 100 year + 40% climate change events within the site boundary. The attenuation will be in the form of storage crates located in the central courtyard.
- The drainage proposals will be designed in accordance with the techniques set out within the SUDS manual.

7. Conclusion

- The drainage strategy presented has investigated the Suds hierarchy in relation to preferred drainage discharge and it can be confirmed that connection to the existing
- The on-site drainage has been split between foul and surface water runs, combining into the existing combined manhole as it exits the site. This will allow a later discharge to a separate system when available.

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For and on behalf of
ADS Structural Limited.



APPENDIX A – EXISTING DRAINAGE LAYOUT

