



Environmental

Geotechnical

Highways

Structural

Civil

Equitable Buildings St Ann's Square Manchester

Proposed Site Re-Development

Flood Risk Assessment / Drainage Strategy

For: PH Property Holdings Ltd.

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CONTENTS

1.0 Introduction

2.0 Standards and Limitations

3.0 Current Situation

3.1 Site Location and Description

3.2 Hydrology and Flooding

3.3 Existing Adopted Surface Water Drainage

3.4 Existing Adopted Foul Water Drainage

4.0 Proposed Development

4.1 Development Proposals

4.2 Drainage Proposals

5.0 Conclusions

5.1 Flooding

5.2 Site Surface Water Drainage

5.3 Site Foul Water Drainage

5.4 Off Site Impacts

5.5 Residual Risk

APPENDIX

Appendix 1 Site Location Plan

1.0 INTRODUCTION

Integra Consulting have been commissioned by PH Property Holdings Limited to provide a flood risk assessment / drainage strategy for the proposed re-development of the Equitable Buildings, St Ann's Square, Manchester. This document is submitted in support of the planning application for the re-development of the application site as it is the Client's intention to develop the existing building into a mixed use development comprising retail units up to and including first floor level and with residential apartments on the floors above.

The objective of the drainage strategy was to identify potential flooding issues and proposed foul / surface water drainage strategy at the proposed development.

This assessment has been undertaken in accordance with the pro-forma guidance contained in:

- Department for Communities and Local Government document 'National Planning Practice Guidance: Flood Risk and Coastal Change'
- Manchester City, Salford City and Trafford Councils Levels 1 & 2 Hybrid Strategic Flood Risk Assessment by JBA Consulting March 2010 & March 2011
- Manchester City Council Local Flood Risk Management Strategy
- DEFRA / Environment Agency publication SC030219 'Rainfall Runoff Management for Developments' dated October 2013.
- Building Regulations Approved Document H – Drainage and Waste Disposal

2.0 STANDARDS AND LIMITATIONS

This report has been prepared solely for use by PH Property Holdings Limited. It shall not be relied upon or transferred to any other party without the prior written authorisation of Integra Consulting.

The findings and opinions in the report are based on information derived from a variety of different sources. Integra Consulting do not accept any liability for the accuracy or otherwise of any information provided by third parties.

It should be noted that some of the aspects considered in this study may be subject to change with time. Therefore, if the development is delayed or postponed, consideration may need to be given to reviewing such issues to confirm that no changes have taken place, either at the site or within relevant legislation.

To date we have consulted with the Environment Agency and United Utilities. Further consultations are likely as the scheme progresses. It should be noted that even where responses have been received from Regulators, these could be subject to change at a later date.

3.0 CURRENT SITUATION

3.1 Site Location and Description

The site is located at St Ann's Square, Manchester at National Grid reference E383790, N398392 and is circa 0.1 Ha in area. The entire site is covered by a single building which has formerly housed restaurants, shops and offices. The building is bounded by Barton Square to the north and west, St Ann's Street to the south and St Ann's Square to the east.

Following liaison with the EA, we can confirm that the site does not lie within an elevated flood zone (Flood Zone 1) and is therefore considered to be at low / no risk of fluvial or coastal flooding.

3.2 Hydrology and Flooding

From research undertaken to date, there are no historical records of flooding from sewers, highway drainage, overland flow or groundwater at the site. Following liaison with the EA, it has been confirmed that the site does not lie within an elevated flood zone (Flood Zone 1) and no detailed flood analysis is therefore required for the application site.

3.3 Existing Adopted Surface Water Drainage

Existing adopted surface water sewers adjacent to the Equitable Buildings site are noted below:

- 1500mm diameter adopted combined sewer extending from south to north beneath Barton Square
- 1500mm diameter adopted combined sewer extending from east to west beneath St Ann's Street

3.4 Existing Adopted Foul Water Drainage

Existing adopted foul water sewers adjacent to the Equitable Buildings site are noted below:

- 1500mm diameter adopted combined sewer extending from south to north beneath Barton Square
- 1500mm diameter adopted combined sewer extending from east to west beneath St Ann's Street

4.0 PROPOSED DEVELOPMENT

4.1 Development Proposals

The proposed development over the 0.1 hectare site comprises the refurbishment of the existing building into a mixed use development comprising retail units up to and including first floor level with residential apartments on the floors above.

There will be no change to the building envelope on plan and hence the drained area of the post-development site will remain as per the current scenario.

4.2 Surface Water Drainage Proposals

The issue of surface water drainage to the proposed development has been considered with reference to the hierarchy of surface water disposal as noted in the Building Regulations H3:

- i) Sustainable urban drainage systems (SUDS)
- ii) Discharge of surface water off site direct to watercourse
- iii) Discharge to adopted sewer

Using the above hierarchy, SUDS are made up of one or more structures built to manage surface water runoff. They are used in conjunction with good management of the site to prevent flooding and pollution. There following are the general methods of control:

- Constructed wetlands
- Filter strips and swales
- Filter drains and permeable surfaces
- Infiltration basins or devices
- Basins and detention ponds

The city centre location and subsequent lack of public open space within the development scheme inhibits the use of features such as constructed wetlands, filter strips and swales. Therefore, the potential use of these features is unachievable due to the lack of open space available at the development site.

Filter drains and permeable surfacing are more suited to use in external car parks, driveways, paths and patios and would not therefore lend themselves for use at the development site considering that the building is bounded by adopted highway and there are therefore no available associated site external areas.

The potential for using infiltration basins and devices such as soakaways has been considered and deemed unsuitable for the development site. This is due to the lack of any external open space which could be utilised to locate soakaway devices. Considering that soakaways are required to be located a minimum of 5m from any property as stipulated in BS8301, there are no opportunities at the site to accommodate infiltration devices.

The potential use of detention basins or balancing ponds is again considered unachievable due to the lack of open space available for this purpose.

In summary of the above, sustainable urban drainage systems are not considered feasible for the proposed development particularly due to the reliance of such methods on external areas and are thus more suitable for use on less densely populated sites.

The hierarchy of surface water discharge requires consideration of discharge direct to a watercourse. The nearest watercourse to the site is the River Irwell situated approximately 250m west of the site and hence discharge of surface water off the site into this watercourse is considered impractical due to the significant amount of third party land between the application site and the watercourse. A desk study search has been undertaken to establish whether any underground culverts cross or lie in close proximity to the site. Our enquiries indicate that there are no adopted or private culvert structures beneath or adjacent to the proposed development site and therefore this potential method of surface water discharge has also been discounted on this basis.

Subsequently, it is therefore necessary to discharge directly into the existing surface water public sewers surrounding the site and this will be undertaken via a section 106 sewer application to United Utilities.

The existing site surface water drainage currently discharging into the existing adopted sewer system. Accordingly, it is proposed that the existing site drainage points are utilised and therefore no additional connections to the public sewer are required.

4.3 Foul Water Drainage Proposals

In a similar manner to existing / proposed foul water drainage, it is proposed that the existing site foul drainage points are utilised and therefore no additional connections to the public sewer are required.

5.0 CONCLUSIONS

5.1 Flooding

Our research indicates no historical record of flooding at the site from sewers, highway drainage, overland flow or groundwater and it is therefore deemed that no detailed flood analysis is required for the development site.

5.2 Site Surface Water Drainage

The issue of surface water drainage to the proposed development has been considered with reference to the hierarchy of surface water disposal as noted in the Building Regulations H3.

SUDS are not considered a practical option at the application site, principally due to the high density nature of the site and thus lack of open space to accommodate SUDS systems.

On the basis of the distance to the nearest watercourse (River Irwell) and multiple land ownerships between the site and this watercourse, direct discharge of surface water off the site into watercourse is considered impractical. Furthermore, there are no records of underground culverts in the vicinity of the development site and hence this method of discharge does not provide a solution for site surface water drainage.

With the above options having been investigated and found to be inappropriate, the use of the existing adopted sewers surrounding the site to discharge post-development surface water in the current manner remains the optimum solution.

5.3 Site Foul Water Drainage

Subject to detailed liaison with United Utilities, it is proposed to discharge the foul water from the development site into the existing connections to the adopted combined sewers surrounding the site.

5.4 Off Site Impacts

As there are no alterations to the existing system and because there is no increase in surface water discharge, the proposed surface water discharge is not envisaged to compromise the existing United Utilities public sewerage system infrastructure.

All roof areas are to be positively drained into the on-site surface water drainage system. This will ensure that there are no off-site flood flows generated by the proposed development.

5.5 Residual Risk

With careful design of the drainage elements as described above, no residual flood related risks will remain after the development has been completed. The building owner will be responsible for future maintenance of the on-site drainage services. This will ensure that the drainage system will always operate at its maximum efficiency.

APPENDIX

APPENDIX 1

SITE LOCATION PLAN

- Notes.
- 1 All dimensions and levels are in metres unless noted otherwise.
 - 2 This drawing is to be read in conjunction with all relevant Architects and Service Engineers drawings.

Key:

Approximate Site Boundary

Existing Buildings

Rev	Drawn	Date	Description
Drawing Status			
INFORMATION			
Contract			
11 – 16 ST ANN’S STREET, MANCHESTER			
Drawing Title			
SITE LOCATION PLAN			
Integra consulting environmental			
Suite 4, 14-32 Hewitt Street, Manchester, M15 4GB email: environmental@integraconsulting.co.uk web: www.integraconsulting.co.uk tel: 0161 237 9310			
Scales		Date	
1:250		AUGUST 2017	
Drawn		Checked	
AJ		MB	
Contract No		Drawing No	
3043		SI-01	
		P1	