

Flood Risk Assessment

Greenwood Apartments

For

Kirklees Metropolitan Council

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1.00 Introduction

1.01 This report is commissioned to examine the flood risk associated with the proposed re-development of the Greenwood Apartments. The site is level at approximately 41.5m AOD. This risk assessment has been requested by the Environment Agency (EA) as part of the planning process and is in accordance with Planning Policy Guideline No 25 Development and Flood Risk.

1.02 The River Calder is approximately 300m to the south and the site lies within the catchment area of the river.

1.03 Section 2.00 describes the site location, topography and former land use. Section 3.00 identifies the existing watercourses and drainage. Section 4.00 discusses the flood hydrology. Section 5.00 provides conclusions and recommendations.

2.00 Site Location and Former Land Use

2.01 The proposed development site location is shown on the 1:20,000 OS plan in Appendix A. The site is noted as being within the Environment Agency 1 in 100 year, flood outline as noted in Appendix B.

3.00 Watercourses and Drainage

3.01 There are three watercourses near the site and these are noted in Appendix A and B. The River Calder lies approximately 300m to the south of the site and flows in a west to east direction. The Spen River is approximately 800m to the east of the site and flows in a southerly direction and outfalls into the River Calder. Canker Dike, which is in culvert is approximately 300m to the north of the site and flows west to east and outfalls into the Spen River.

3.02 The site appears to fall within the watershed of the River Calder, however, because it is near the border it may possibly fall within the Spen River catchment. The Canker Dike catchment falls within the Spen River catchment.

4.00 Hydrology and Flood Levels

4.01 A HEC-RAS model of the Spen River undertaken by 3e Consulting Engineers indicated that the 1 in 100 year flood level at this location is 41.37m and the climate change up lift level is 41.48m. The Canker Dike system, outfalls into the Spen River catchment therefore the predicted Spen River level is appropriate.

4.02 The Environment Agency hold a Section 105 flood mapping study of the River Calder in this area. The 1 in 100 year flood level at the bridge crossing 300m to the south of the site is 41.324m. No climate change uplift assessment has been made in this study but this could be in the order of 200mm in the next 50 years. A climate change level of 41.524m is therefore possible.

4.03 The site is at a level of approximately 41.5m and therefore, not within the 1 in 100 year floodplain of either the Spen River or the River Calder.

5.00 Conclusions and Recommendations

5.01 The 1 in 100 year flood level on the River Calder is approximately 41.324m and the climate change level is approximately 41.524m. The 1 in 100 year flood level on the Spen River is approximately 41.37m and the climate change level is approximately 41.48m.

5.02 The site levels are at approximately 41.5m and therefore the site does not lie within the 1 in 100 year floodplain. A minimum finished flood level of 41.67m is recommended. This will give 300mm freeboard over the highest of the predicted 1 in 100 year flood levels and still provide freeboard on the predicted climate change level.

APPENDIX A

1:20,000 OS Location Plan



Date	Revision	Checked	Rev.
Project GREENWOOD APARTMENTS			
Title 1:20,000 ORDNANCE SURVEY PLAN			

APPENDIX B

Environment Agency 1 in 100 Year Indicative Floodplain Map



Date	Revision	Checked	Rev.
Project GREENWOOD APARTMENTS			
Title EA 1IN100 YR INDICATIVE FLOOD PLAIN			

