



Ref: 3995/2.3

Date- 25<sup>th</sup> January 2016

**PLOVER ROAD, MINSTER – RESIDENTIAL SITE**

**ADDENDUM FLOOD RISK ASSESSMENT**

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**INTRODUCTION**

This report has been produced as an addendum to the Flood Risk Assessment revision B dated 2<sup>nd</sup> July 2015 to address comments made by the Mid Kent Planning team drainage engineer and the Lower Medway Internal Drainage Board. These comments are contained within Appendix A.

**SURFACE WATER DRAINAGE**

The comments from the IDB and Mid Kent planning team were that the proposed off site flow rate of 31l/s for the site was too high as this was based on the existing 1 in 100 year flow rate.

It is therefore proposed to discharge to the existing QBar rate of 10.7l/s, which is based on the residential site area of 3 hectares. See Microdrainage ICP SUDS rural run-off summary within Appendix B.

The surface water drainage strategy was therefore re-designed to suit this much reduced rate and it was found that the overall storage requirement was 950m<sup>3</sup> during the peak 1 in 100 year storm event. (see Microdrainage summary calculations in Appendix C)

The Mid Kent Planning team also made comments regarding the off site 450mm surface water drain proposed. Since these comments further survey work were carried out to clear vegetation from the northern boundary and an existing ditch was discovered which conveys existing flows from the fields to the existing Scrapsgate Drain, with a pipe link under the footpath running parallel to this watercourse.

There is therefore a pre-existing right to discharge of surface water through the adjacent land.

A topographical survey was carried out to survey this ditch and the scheme was re-designed to suit the existing invert level. The proposed storage swale invert was raised to 6.800 from the previously submitted design which has reduced the capacity of this swale.

To compensate, storage is proposed to be spread through the site into 5 main permeable paved areas, each with flow restrictions.

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INVESTOR IN PEOPLE

The storage potential of each area is summarised in the table on drawing 3995/SK100 rev C in Appendix B, but also replicated below:

<b>STORAGE STRUCTURE</b>	
SWALE	264m <sup>3</sup>
Upper Pond	50m <sup>3</sup>
Permeable Paving Zone 1	155m <sup>3</sup>
Permeable Paving Zone 2	54m <sup>3</sup>
Permeable Paving Zone 3	62m <sup>3</sup>
Permeable Paving Zone 4	400m <sup>3</sup>
Permeable Paving Zone 5	300m <sup>3</sup>
<b>TOTAL</b>	<b>1021m<sup>3</sup></b>

It can be seen from the table that the required storage of 950m<sup>3</sup> for the whole site is reached. The detailed design will assign the exact flow restrictions for each area.

The Mid Kent planning team also raised concerns over the diversion of the existing ditch serving the existing housing estate to the east, particularly with regards to the 90 degree bend.

The scheme has been re-designed to take the ditch into the Upper pond, which will then be drained through the site via a new swale to the side of the road. It is still proposed to retain an existing ditch to the eastern boundary as it is felt that filling this ditch would present a land drainage problem as the adjacent site may also discharge to some extent into this. The supermarket site will also discharge to this ditch.

It is proposed that this ditch is contained within the rear gardens and a covenant written in the deeds of each sale that this ditch must be maintained under riparian law. Alternatively, subject to Mid Kent consent, a secondary fence line could be introduced so that there is a zone for this ditch which can be maintained by the management company. This could be finalised at detailed design stage.

## **CONCLUSION**

With these revised proposals, it is proposed that the flood risk to adjacent properties will be much reduced as there will be a significant volume of storage provided and all storms will be restricted to the Qbar greenfield run off rate.

Martin Roberts IEng, ACIWEM, MCIHT  
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**APPENDIX A**

Comments from Mid Kent Planning team and Lower Medway IDB

## **APPENDIX B**

Microdrainage Rural run-off calculations

## **APPENDIX C**

Microdrainage Calculations

Whole site tank to determine required storage volume

**APPENDIX D**

Proposed site drainage scheme 3995/SK100C