# FLOOD RISK ASSESSMENT SUMMARY REPORT (FRA)

**Proposed Reception and Office Area alterations to existing industrial warehouse & addition of entrance ramp & canopy**

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**Carpenter, Shaw Lane,**
**Dinting Lodge Industrial Estate,**
**Glossop, Derbyshire,**
**England. SK13 6LE**

Prepared by

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## 1.0 INTRODUCTION

The Flood Risk Assessment Report supports the Planning Application for the minor extension of the existing factory at Dinting Lodge Industrial Estate Glossop

**Development description and location**

- Type of development:
    - raising floor level of existing accommodation by approx. 1200mm to reduce flood risk
    - addition of an entrance ramp to the new floor area
    - enclosure of an existing Transformer Bay
- Vulnerability classification: Less Vulnerable[1] (non–residential institutions not included in 'more vulnerable').
- Sequential Test or Exception Test: see report prepared by Clancy Consulting Ltd 'FRA Carpenter Whole Site' prepared December 2009 for the Addition 4 project (currently in construction)
- FRA Requirement: from the foregoing criteria, PPS 25 requires the provision of an FRA to explain the specific design proposals.

## 2.0 ASSESSMENT OF RISK

The Environment Agency's Flooding Risk Analysis shows the site of the existing factory and proposed minor extension to be in Zone 2.

### 2.1 Detailed Assessment,

Detailed Assessment of Risk, Site Catchment Characteristics, Location, Topography, Current Site Layout and Development Area, Existing Drainage, Flood Potential and Historic Data for Flooding, Assessment of Existing Structures on local hydraulics, impact on existing Public and Private Foul and Surface Water and a Sequential Test & Exception Test included in the report prepared by Clancy Consulting Ltd 'FRA Carpenter Whole Site' prepared December 2009 for the Addition 4 project (currently in construction)

The volume of flood water displaced, impact on neighbouring locations and creation of new impermeable areas, flood defence recommendations and specific conclusions for the Reception Area and Office project are summarized below.

[1] *From table D.2 PPS 25 Development and Flood Risk*

## 2.2 Volume of flood water displaced,

PPS 25 (Appendix para D16) notes that minor developments are unlikely to raise significant flood risk issues unless they would:

a) have an adverse effect on a watercourse, floodplain or its flood defences;

b) would impede access to flood defence and management facilities; or

c) where the cumulative impact of such developments would have a significant effect on local flood storage capacity or flood flows.

The proposed raising of internal floor levels and associated external ramp have a combined 'volumetric footprint' of 300m³; it is therefore considered that the proposed development will have minimal effect on any of these issues.

## 2.3 Creation of new impermeable areas

Additional impermeable area is created by:

- Roofing over of the existing Transformer compound (approx. 12m²).
- Proposed new concrete flag ramps replacing and marginally extending existing concrete flag pathways (approx. 10m²)

New underground surface water drainage installations will be marginally oversized to buffer the effect of this minor additional flow of rainwater at times of peak rainfall.

## 2.4 Off site impacts on neighboring locations

The marginal extent of water volume displacement is considered to have absolutely minimal impacts on the flood water levels around the catchment area.

## 3.0 FLOOD DEFENCE RECOMMENDATIONS

Considering the Flood Defence recommendations contained in the Carpenter Whole Site report in respect of the Reception and Office alterations, the following is concluded:

- It is not reasonable or feasible to relocate the entire existingfacility to an area within a flood zone 1; however, it has been demonstrated, through the sequential test that the proposed development is appropriate for the Flood Zone (Zone 2).
- The proposed development location is at the most appropriate position within the site boundary for the Reception facilities (i.e. next to the Site Entrance), irrespective of flood risk.
- A review of the site levels has concluded that the proposed finished floor level +125.600 AOD, (matching that of the existing buildings) is approximately 400mm below the flood levels provided by the EA for a 1 in 100 year flood event with an allowance for climate change, at a position 150m away from the new building.
- Consideration has been given to utilising a flood resilient construction, but the implications on the fitting out and use of the building are considered unacceptable.
- Consideration has been given to raising the area of the proposed extension area above the flood levels and installing a series of external and internal ramps to mediate the difference in floor levels, thereby removing any flood risk. However, raising of the floor levels higher than existing general floor levels is not desirable for operational and internal accessibility reasons, and consequently, the proposed new internal levels will maintain a consistent floor level within the existing buildings.
- It is understood that the end user (Carpenter Ltd) and their insurers are willing to accept the risk of flooding to the extension from extreme events in Glossop Brook, given that the existing buildings and offices are already subject to that flood risk.

## 4.0 CONCLUSIONS

This report summarises the flood risk assessment exercise, which has been carried out in relation to the proposed extension within an existing industrial facility at Carpenter Ltd, Dinting Lodge Industrial Estate, off Shaw Lane, Glossop. SK13 6LE.

- A review of the flood levels provided by the EA indicated that the area of the proposed extension falls within Zone 2 – Medium Probability.
- Table D2 Flood Risk Vulnerability Classification would classify the uses of the proposed development as follows:
    - Buildings used for general industry, storage and distribution – Less Vulnerable

  Therefore the proposed development is considered appropriate and an Exception Test is not required.
- The current site levels within the area of the proposed extension range from between 125.35 and 125.95, however, it is currently proposed to set the finished floor level at the same level to the existing warehouses/factory at 125.60m AOD.
- The maximum water level provided by the EA for a 1 in 100 year flood event (plus allowance for climate change) is 125.994m AOD upstream of the small footbridge and 125.07 downstream of the footbridge.
- The raised floor level is not predicted to flood as a result of the 100 year event plus climate change (see detailed Flood map from EA)
- The Building Owner is aware of the flood risks imposed on to this site from Glossop Brook, having occupied it for many years. There have been extensive flood defence works undertaken by the Environment Agency in the Glossop area in the recent past.
- There will be a marginal increase in area of impermeable surfacing within the area of the proposed extension; the increased run-off will be easily managed through the use of a slightly oversized surface water drainage system.
- The impact on neighbouring properties in the catchment is absolutely minimal.

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