FLOOD RISK ASSESSMENT

at

Taskers Trading, Unit B, Liver Industrial Estate, Long Lane, Aintree, Liverpool L9 7ES

4 March 2016

TURNER JOMAS & ASSOCIATES
Environmental & Civil Engineers & Transport Planners

Table of Contents

If this report has been released electronically, the appendices referred to herein can be found in the annexed zip folder/s as .pdf or .dwg files. If this report has been released in hard copy the appendices will be bound into the back of this report. Plans may be annexed separately as A1 or A0 copies where a bound-in A3 copy is not appropriate.

1.0 Scope

This report contains the details of a Flood Risk Assessment carried out by Jomas Associates for Taskers Trading, Unit B, Liver Industrial Estate, Long Lane, Aintree, Liverpool L9 7ES, henceforth referred to as “the site” in this report.

This report must not be relied upon by any other party without the explicit written permission of Turner Jomas & Associates Ltd.

All parties to this report do not intend any of the terms of the Contracts (Right of Third Parties Act 1999) to apply to this report. Please note this report does not purport to provide definitive legal advice nor can it be used to demonstrate that the site will never flood in the future.

The Executive Summary contains an overview of key findings and conclusions. However, no reliance should be placed on the Executive Summary until the whole of the report has been read. Other sections of the report may contain information which puts into context the findings noted within the Executive Summary.

2.0 Executive Summary

This FRA has been carried out in accordance with the 27th March 2012 National Planning Policy Framework (NPPF). It is to be used to assist the Local Planning Authority (LPA) and Environment Agency (EA) when considering the flooding issues of the proposed development as part of a planning application.

The planning application is for continued use of the site for commercial / industrial uses comprising extension of an existing single storey commercial unit with a 2 storey unit attached and to the rear of the existing building. The site is 100% impermeable.

Water Entry design and appropriate Flood Resilient measures are already incorporated; no increase in impermeable areas.

This is categorized as a “Less Vulnerable” land use in accordance with the NPPF/PPG 2015 classifications and is appropriate development in FZ1 without the need to pass the Exception Test.

There will be no increase in impermeable areas and no increase in footprint within a floodplain; no further compensation is required.

Additional SUDS are not required but the scheme incorporates new planted areas as a betterment and hence this increase in permeable areas is a betterment.

Given the residual risk flood setting, the site can be managed in terms of future floodproofing using standard water entry given nature of the proposed structure and operation, such that the site will flood as normal (no flood compensation required) and resilient measures.

Based on the likely flooding risk and small scale of the proposed development, it is considered that the proposed development can be constructed and operated safely in flood risk terms, without increasing flood risk elsewhere; it is therefore considered appropriate development in accordance with the NPPF.

3.0 Introduction

The FRA combined a desktop study, review of available information, consultations and an assessment of all sources of flooding posed to and from the site and proposed development, in accordance with National Planning Policy Framework (NPPF) & PPG 2015. Appropriate flood mitigation measures were then considered, either as already incorporated within the scheme or recommended for inclusion at detailed design stage. The suitability of the proposed development was also reviewed in the context of the NPPF/PPG and the technical guidance accompanying the NPPF/PPG.

4.0 Purpose of the Report

This FRA has been carried out in accordance with National Planning Policy Framework (NPPF). It is to be used to assist the Local Planning Authority (LPA) and Environment Agency (EA) when considering the flooding issues of the proposed development as part of a planning application.

The report provides the following information:

- An assessment of the flood risk posed to the site based on flood information and mapping provide by the EA and Strategic Flood Risk Assessment (SFRA);
- An assessment of the proposed development in terms of surface water run-off; and
- Proposals for measures to mitigate the flood risks posed to and from the development where appropriate.

5.0 Report Information Sources

The information source used to undertake this FRA has been collected from the following sources:

- British Geological Survey Website and iGeology App
- EA Website
- Liverpool City Council Level 1&2 Strategic Flood Risk Assessment (2010 and as updated)
- Liverpool City Council (joint) Preliminary FRA / Surface Water Management Plan (2011 as update)
- Internet mapping and searches.

6.0 Overview of British Legislation

6.1 National Planning Policy

The National Planning Policy Framework (NPPF) and PPG 2025 supersede all Planning Policy Statements (PPS's) and remaining Planning Policy Guidance (PPG's). Flood risk is retained as a key development consideration and is incorporated within Section 10: "Meeting the challenge of climate change, flooding and coastal change":

> "Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere."

The Sequential and Exception Tests are retained as part of the NPPF/PPG 2015. The Technical Guidance also includes Tables 2 and 3 to assist with flood risk vulnerability classifications and development suitability. This report provides the flood risk assessment element of both tests. It is the decision of the planning authority as to whether the tests can be fully passed.

March 2015 SUDS Guidance and PPG 2015 compliant.

6.2 Local Policy

Local Authorities consider flood risk through relevant environmental and climate change policies which enforce the requirements of the NPPF.

The Strategic Flood Risk Assessment (SFRA) is a key source of flood risk specific information for the area. The SFRA provides a more detailed review of flood risks and recommendations for ensuring developments can be constructed and operated safely in accordance with the NPPF.

7.0 Site Status and Environmental Setting

7.1 Site Location and Status

The planning application boundary is 1.1 hectares. The site is 100% impermeable comprising an existing commercial unit, car parking, access areas, storage areas and ancillary uses. The site is bounded by surrounding commercial properties.

Liver Industrial Estate (road) access / egress in FZ1 is to the southwest of the site.

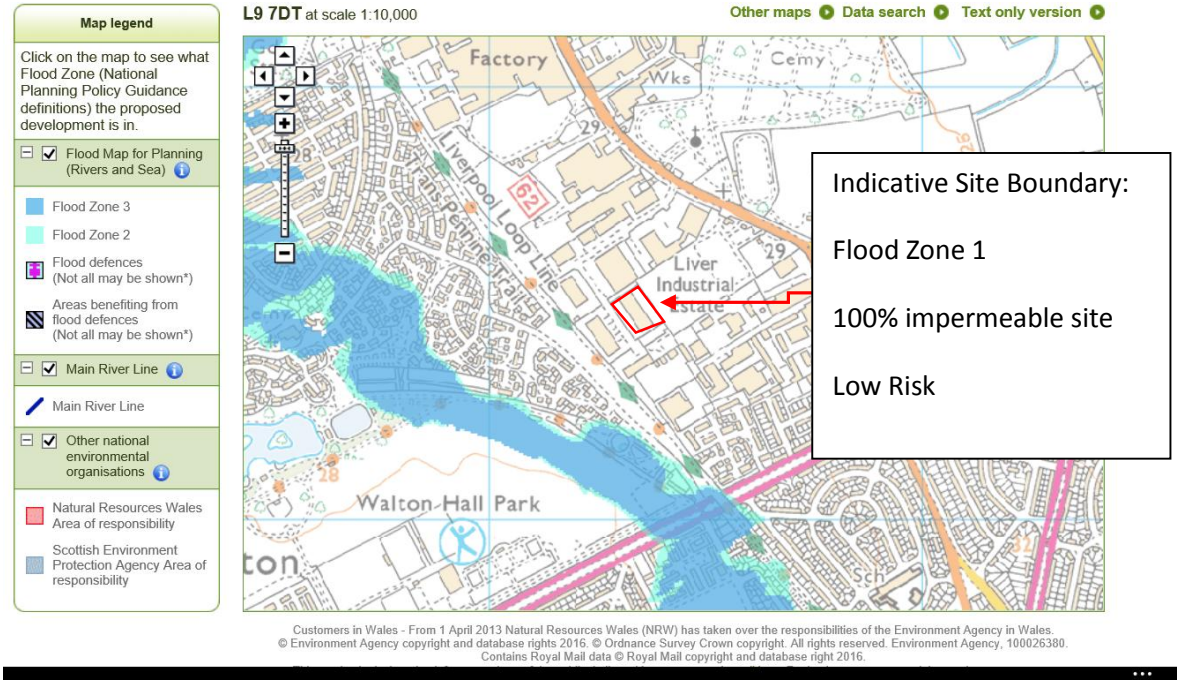
There is scrubland to the north east and commercial plots to the southeast and northwest.

Site is in EA FZ1 surrounded by FZ1.

7.2 Existing Flood Risk

Flood Sources	**Site Status**	**Comment on flood risk posed to / from the development**
Fluvial / Tidal	Site is in Flood Zone 1 No watercourses within 200m and no direct fluvial flood flowpaths	Proposed development is Less Vulnerable and appropriate in accordance without the need to pass the Exception Test. Water Entry Strategy hence site will flood as normal
Groundwater	SFRA indicates site not in area of groundwater flooding	The proposed development will not increase the risk of groundwater flooding. Low Risk

Artificial Sources	Vacant plot to northeast has large areas of ponded water / informal ponds within 20m No likely pathway to site No other artificial sources with potential pathways for flooding at the site within 250m	The proposed development will not include any works which could increase the risk of flooding from these sources Low Risk
Surface Water / Sewer Flooding	Site is not located in a critical surface water risk zone but in general surface water hazard area Rear of property is in a linear area of potential EA surface water hazard Site is 100% existing hardstanding Condition, depth and location of surrounding infrastructure uncertain	No increase in impermeable areas Low Risk posed to and from the scheme
Climate Change	Included in the flood modelling extents	Development will not increase the peak flow and volume of discharge from the site Low risk posed to and from the development



SURFACE WATER HAZARD

The EA surface water mapping indicate a linear section of low-medium hazard of surface water flooding to the rear of the site.

Based on the design principles below, the scheme will not have an impact on this surface water hazard area since there is to be no increase in impermeable areas.

DESIGN RESPONSE AND FLOOD DATA SUMMARY

- Buildings as standard industrial units designed to allow Water Entry & Flood resilient as appropriate
- No unacceptable increase in footprint given FZ1
- No increase in impermeable areas
- **Reduce flood risk overall:** reduction in impermeable areas / new planting areas incorporated in west new parking layout SUDS are feasible to manage surface water
- Access points as existing are in appropriate location for quickest access to FZ1 /away from surface water hazard to rear of property

Strategic Flood Risk Assessment

The SFRA mapping is out of date and also does not have site specific mapping, but is referred to where appropriate in the above sections.

Preliminary Flood Risk Assessment

A PFRA with specific data and mapping relevant to the site was not available.

Flood History

From available information including the SFRA & PFRA and EA data, the site has not been inundated by historic flood events.

8.0 Assessment of Proposed Development

8.1 Proposed Development

The proposed development comprises:

- Continued use as a commercial / retail area
- Erection of rear extension of 2 storeys
- New access & turning circle arrangements at front access (southwest of site) adjacent Liver Industrial Estate (road)
- New planting areas within new car park arrangement
- No increase in impermeable areas in fact increase permeable / SUDS areas

Potential if required:

- New permeable car parking areas with lined granular sub-base for attenuation and peak storage or infiltration (to be confirmed)

Flood Design Response:

As an appropriate response the scheme is designed with:

1) a "**water entry strategy**" to minimise structural damage in the event of a flood and also ensure no change in flood storage and no impact on flooding FROM the proposed scheme

2) **robust resilient construction techniques** in order to minimise the damage caused by water entry and also to reduce the time taken to return the property to use after a flood

The site will continue to flood as existing, and given it is in FZ1, no further compensation is considered necessary.

8.2 Preliminary Drainage Strategy

There will be no increase in impermeable areas; the development will:

a) continue to discharge water in a controlled manner

The drainage strategy where necessary will be based on the following guidelines, to be incorporated as appropriate to the scheme and as existing:

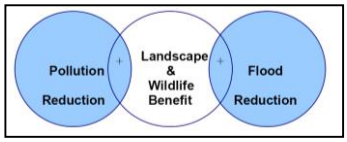
- Separate foul and surface
- As required, capacity based on the 1 in 100 year storm including for climate change
- SUDS to be incorporated (see following section)

If new permeable lined areas are incorporated, this can reduce the discharge and volumes of surface water entering the adjacent sewers and can manage surface water within the site.

8.3 Sustainable Drainage Systems (SUDS)

Concept SUDS Strategy

The following diagram indicates the philosophy behind the proposed SUDS strategy, and is taken from the EA's SUDS guidance:



(Source: Environment Agency, 2009)

Table 3 indicates the SUDS Hierarchy Appraisal for the site and proposed development:

Table 3: Site Specific SUDS Appraisal

SUDS Hierarchy	SUDS Technique	Potential Benefits			Site Specific	
		Flood Reduction	Pollution Reduction	Landscape & Wildlife Benefit	?	Scheme Specific SUDS Suitability Appraisal and Comment
Most Sustainable ↕ Least Sustainable	Living Roofs	•	•	•	*	Possible to incorporate on site (eg: Blue, Green and Brown roofs). Structure dependent, however available ground based permeable areas for storage exceed required storage volume requirements
	Ponds / Basins	•	•	•	x	Not considered necessary and also not possible to incorporate on site given nature of site and operations
	Swales	•	•	•	x	Not considered necessary and also not possible to incorporate on site given nature of site and operations
	Infiltration Techniques	•	•		*	Possible to incorporate on site subject to confirmation of the physical and chemical properties of the ground and detailed drainage strategy
	Permeable Surfaces, Lined Storage or Infiltration	•	•		✓	New grassed / plnated areas in new car park layout Additional not likely suitable given constrained site and nature of operation but possible to incorporate on site; infiltration subject to confirmation of the physical and chemical properties of the ground and detailed drainage strategy
	Tanked Systems	•			*	Not considered necessary

Key:
Potentially suitable at the site: * Incorporated in the scheme: ✓ Not suitable / possible at the site:

8.4 Evacuation

The site, access & egress and surrounding areas are all in FZ1. No further evacuation / refuge strategy are required.

8.5 Annual Monitoring

Tenants should contact the EA on an annual basis to confirm the flood status of the property.

If the flood status has changed, the evacuation and refuge plan should be reviewed and updated by suitable flood risk consultants as appropriate.

8.6 Surface Water Runoff – Flood Risk from the Development

In accordance with the NPPF/PPG 2015, this FRA also considers the risks posed from the development to surrounding areas.

There will not be an increase in impermeable areas; there will be a betterment with incorporation of new planting areas.

Given the small scale of the proposed development it is considered the development will have no impact on surrounding infrastructure. There will not be any significant increase in overland flow from the site.

8.7 Climate Change

The impact of climate change in accordance with the NPPF is likely to be an increase in the rainfall intensity in the future, which will increase peak storm flows to sewer.

The drainage strategy can include an accommodation of climate change as per industry standard.

The EA data incorporated likely increases in flood levels including an accommodation for climate change.

8.8 Flood Risk Vulnerability

According to the NPPF retained Flood Risk Vulnerability Classification the proposed commercial use would be classified as “Less Vulnerable.”

The NPPF also retained Flood Risk Vulnerability and Flood Zone “Compatibility” Classification; this states that a “Less Vulnerable” development in Flood Zone FZ1 does not require the Exception Test (retained by NPPF/PPG 2015) to be passed.

Based on the data reviewed to date, the flood risk assessment recommends the scheme can be constructed and operated safely in flood risk terms without increasing flood risk elsewhere.

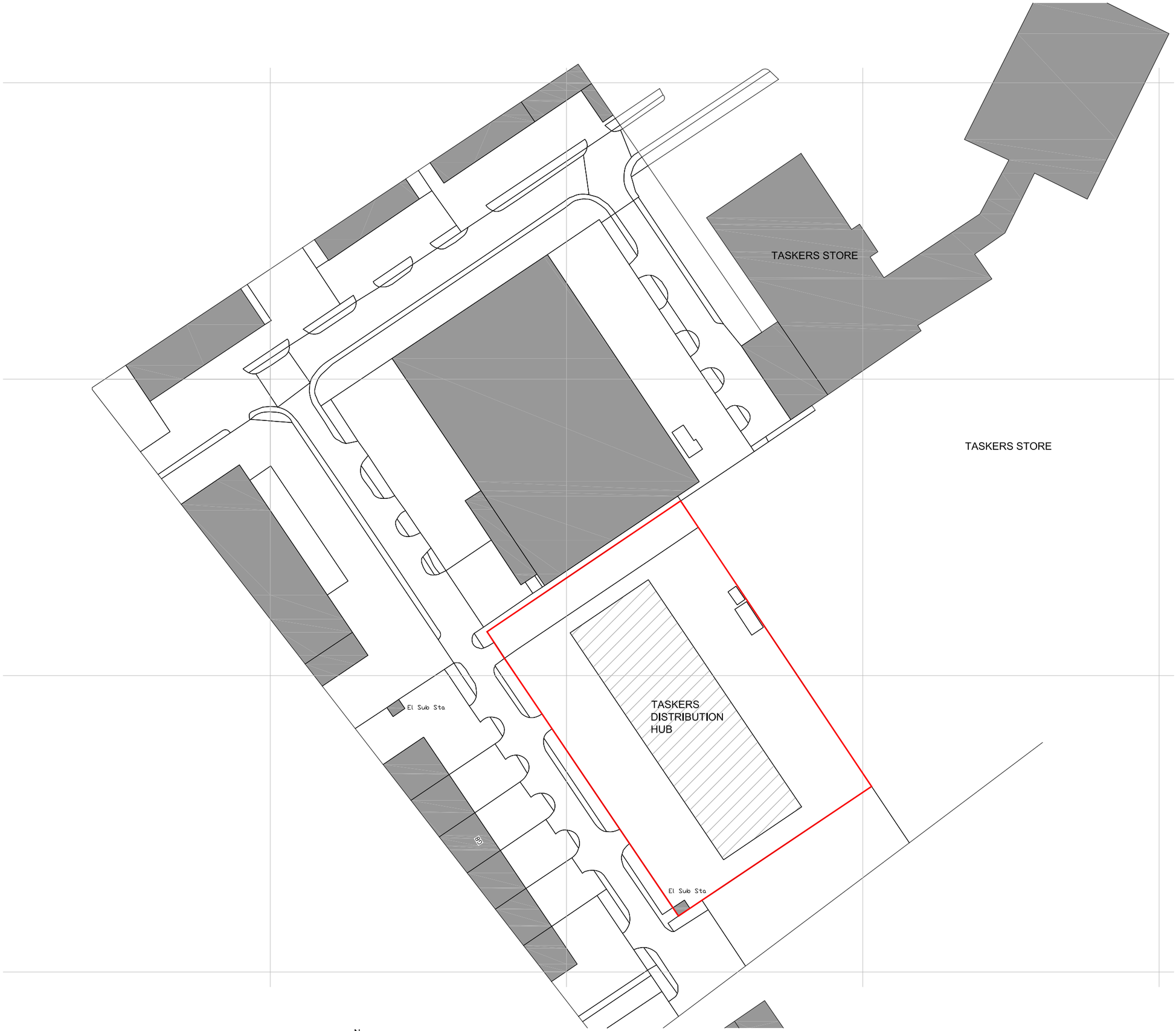
9.0 Conclusion

The site is considered to be generally at a low risk from all sources of flooding including the residual surface water risk and is located in and surrounded by EA FZ1.

Based on the likely flooding risk, it is considered that the proposed development can be constructed and continue to operate safely in flood risk terms, without increasing flood risk elsewhere and is therefore appropriate development in accordance with the NPPF / PPG 2015.

11.0 Appendices

A. Site Location & Existing Layout
B. Proposed GA



SITE LOCATION PLAN
1:250

0 5 10 20 30 40 50
METERS

N

PURPOSE OF ISSUE	CONCEPT

All dimensions shall be verified by the Contractor(s) on site prior to work commencing and relevant orders being placed.
Do not scale from this drawing and only work to written dimensions.
Any discrepencies to be brought to the attention of the Contract Administrator for instructions prior to proceeding.

DATE	REV	COMMENTS

dv ARCHITECTS

Unit 4
Botanic Estate
198 Edge Lane
Fairfield
Liverpool
L7 9PL

Tel: 0151 228 4666
Fax: 0151 228 8666

PROJECT:	DATE:	DRAWN BY:	CHECKED BY:
TASKERS PLC STORAGE AND RECEIPT HUB	JUN_15	GW	GW
DRAWING:	SCALE:	DRAWING NO:	REV:
SITE LOCATION PLAN	1:1250@A3	1422_SK_0001	

FRA Taskers Trading, Unit B, Liver Industrial Estate, Long Lane, Aintree, Liverpool L9 7DT
AppA Location Plan

PURPOSE OF ISSUE	CONCEPT

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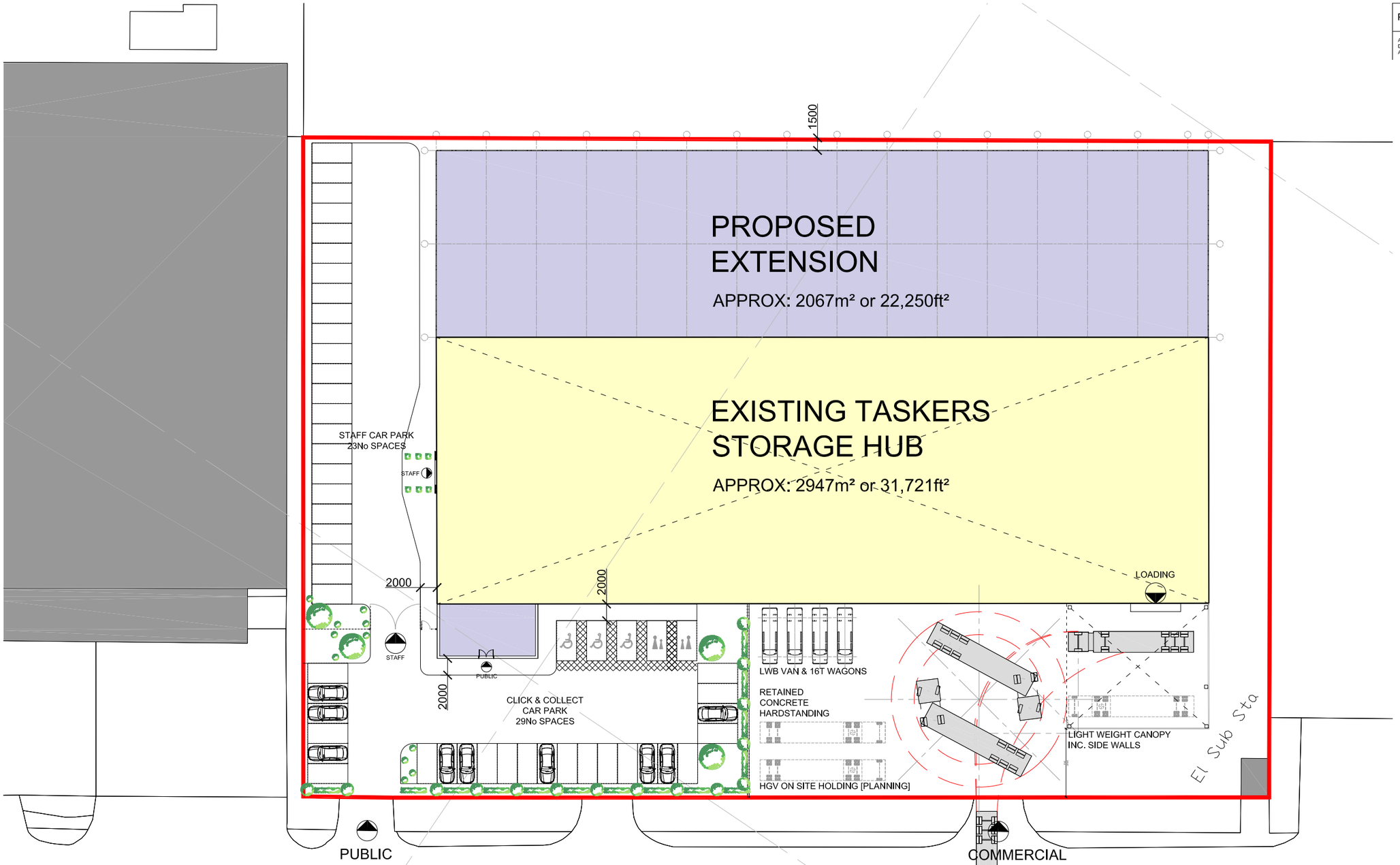

DATE	REV	COMMENTS
25.06.15	1	AMENDED INLINE WITH CLIENT COMMENTS, STAFF PARKING INCREASED, SALES EXTENSION INCREASED, REAR EXTENSION INCREASED ALLOWING FOR 1500mm SERVICE CORRIDOR.

PROPOSED GA PLAN
1:500

0 1 2 3 4 5 10 20 25
METERS

dv ARCHITECTS
Unit 4
Botanic Estate
198 Edge Lane
Fairfield
Liverpool
L7 9PL
Tel: 0151 228 4666
Fax: 0151 228 8666

PROJECT:	DATE:	DRAWN BY:	CHECKED BY:
TASKERS PLC STORAGE AND RECEIPT HUB	JUN_15	GW	GW
DRAWING:	SCALE:	DRAWING NO:	REV:
PROPOSED GA SITE PLAN	1:500	1422_SK_0100	1