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Pukka Pies Ltd
Flood Risk Assessment

Preface

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Contents

APPENDICES

Executive Summary

Pukka Pies Ltd in Syston has been surveyed and assessed for flood risk. Initial analysis of the Environment Agency flood map showed the site to lie within flood zone 3 with greater than 1% (1 in 100) probability of fluvial flooding in any given year from the nearby River Wreake and Barkby Brook.

Due to the presence of a railway embankment to the south of the site which effectively severs the site boundary from the Barkby Brook floodplain, the main risk of flooding to the site boundary is considered to be from the river Wreake.

Detailed modelled flood information for the River Wreake in the locality shows that the site boundary is susceptible to flooding from the 1% (1 in 100) return period and greater. The 1% (1 in 100) flood level within the site boundary is predicted to be 50.57mAOD, when the influence of climate change is accounted for, by means of a 20% increase to the river flow, this level only marginally increases up to 50.61mAOD. The 1%+20%CC (1 in 100 + 20%CC) flood level of 50.61mAOD has been utilised to determine the likely areas impacted on site as this is seen to be the required standard requested by numerous insurance, commercial and utility companies.

When this flood level is project across the site boundary it is insufficient to inundate the production building (with the exception of a low-level lift shaft in the south eastern corner), the packaging warehouse or the raw materials warehouse. Minor inundation to the onsite substation and gas supply room is expected but the lowest point of vulnerability within these buildings is sufficiently greater than the predicted flood level so that damage to the internal equipment is not expected.

The main areas inundated within the site boundary are the car park and external yard where flood depths are expected to amass up to 0.55m with depths of between 0.1 and 0.4m widespread.

The EA have confirmed that they do not own or operate any formal flood defences on the River Wreake in the close vicinity of the site.

The risk from pluvial (surface water) has been deemed largely very low on the EA surface water flood maps with only sections of the external yard to the south of the production building and site access road allocated a medium to low risk. This is considered accurate as the areas shown susceptible to surface water flooding are the lowest within the site boundary and hence would be prime locations for surface water build up. Inundation as a result of surface water accumulation or flow is not expected however as the topography falls away from the building floor levels on all perimeters which would prohibit significant build up around the building and flow of surface would be diverted away from the floor level.

The risk of flooding as a result of an uncontrolled release from an upstream reservoir has been deemed negligible as the extent of flooding does not encroach the site boundary.

Through the background research conducted as well as information from the EA, no instances of significant historical flooding were found in the locality which was confirmed by the client.

Following the site survey, no formal flood defences were observed to be currently installed at a property level.

Taking this into account Pukka Pies Ltd has been deemed at low risk of flood damage from fluvial flooding and very low risk from surface water flooding. Minor recommendations have therefore been made considering practical measures to prevent damage to any sections of the site susceptible to inundation and also plan for site evacuation during the unlikely occurrence of an extreme flood event.

Flood Risk Report

1.0 Introduction

Following instruction given to FCI by NFU Mutual, a flood risk assessment has been carried out at Pukka Pies Ltd in Syston in order to investigate into any flood risk that may exist at the premises. A site visit was carried out on the 31st of October 2019 with the client present. This report will discuss any flood risk that has been identified and give recommendations to mitigate if required.

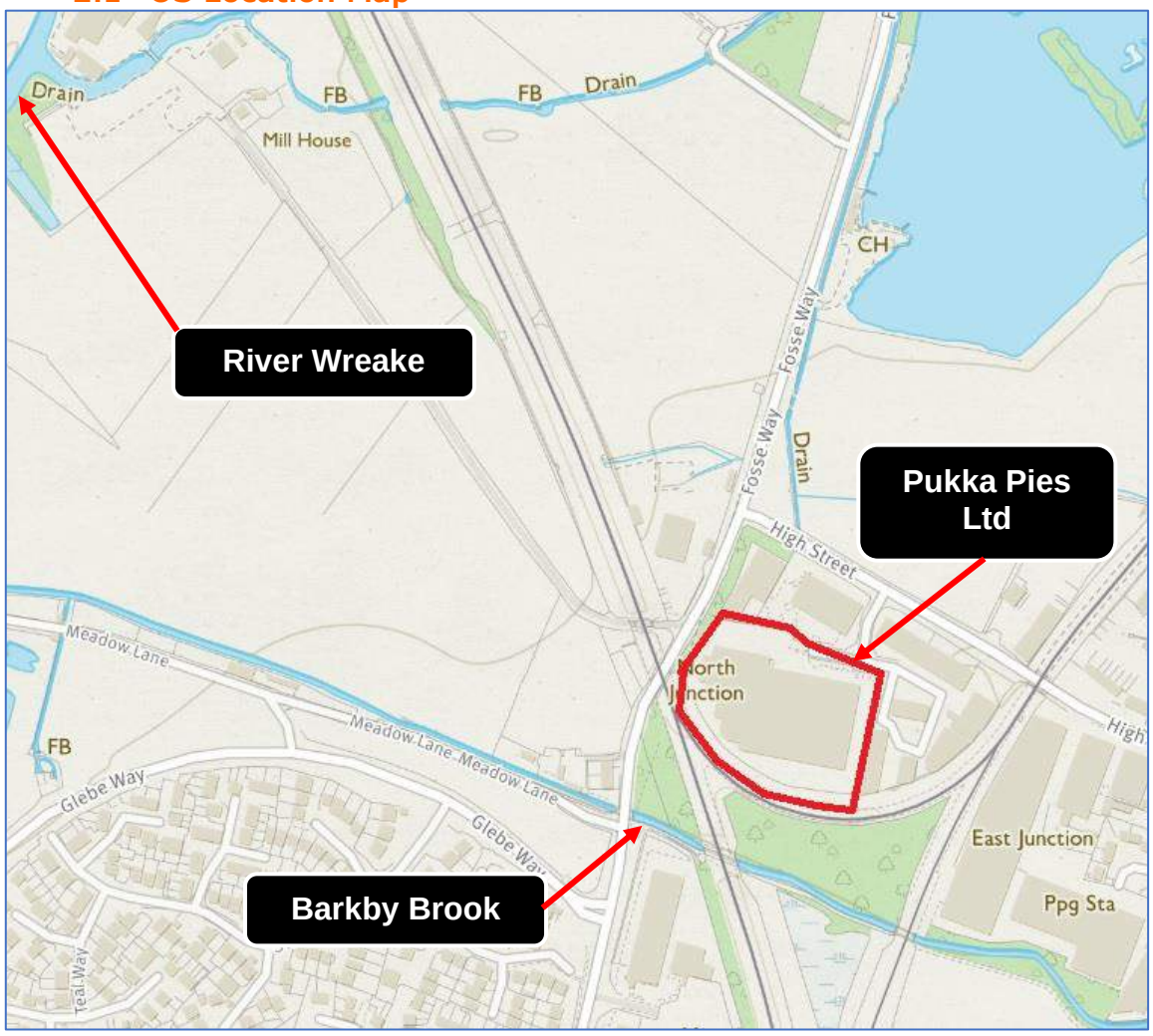
2.0 Site Information

Pukka Pies is located at grid reference SK 61991 11859 in Syston approximately 5 miles north west of Leicester city centre. Access into the grounds is gained from The Half Croft.

The nearest watercourse to the site is the Barkby Brook which lies 65m south of the site with the River Wreake lies approximately 670m to the north west. This can be seen on the following OS and aerial image.

The site is the main production facility for Pukka Pies Ltd and consists of one main production building with two smaller warehouses.

2.1 OS Location Map



(OS Copyright)

2.2 Aerial Image

(Google Copyright)

3.0 Survey Level Information

In order to better understand the topography of the site in relation to any flooding that may potentially exist, the client has provided a recently completed topographical survey of the entire site boundary. All levels that were surveyed can be seen in APPENDIX E. This report will use this information, as well as the following modelled flood level information to form its findings.

4.0 Flood Risk Assessment

4.1 Modelling Introduction

FCI set out to use the most accurate flood risk modelling information that is available which will cover flood risk from Fluvial (River), Pluvial (Surface Water) and Tidal (Coastal Flooding) and Artificial Sources (Reservoirs). Below, each potential flood risk will be discussed.

4.2 Fluvial Flooding

4.2.1 Flood Zone

Based on the Environment Agency flood map for planning, the site is shown to lie within flood zone 3 which equates to greater than 1% (1 in 100) chance of flooding in any given year from the nearby River Wreake and Barkby Brook. The EA flood map for planning can be seen in APPENDIX A.

It is considered that the risk of fluvial flooding to the site location arises from the River Wreake as Barkby Brook which runs to the south site is effectively severed from the site boundary by a railway embankment which prevents inundation on the northern side of the watercourse. Therefore, the focus with regard to fluvial flooding will be on the River Wreake as opposed to Barkby Brook.

4.2.2 Modelled Flood Levels

Following the searches conducted, the most up to date fluvial modelling information for the site was obtained from the Environment Agency.

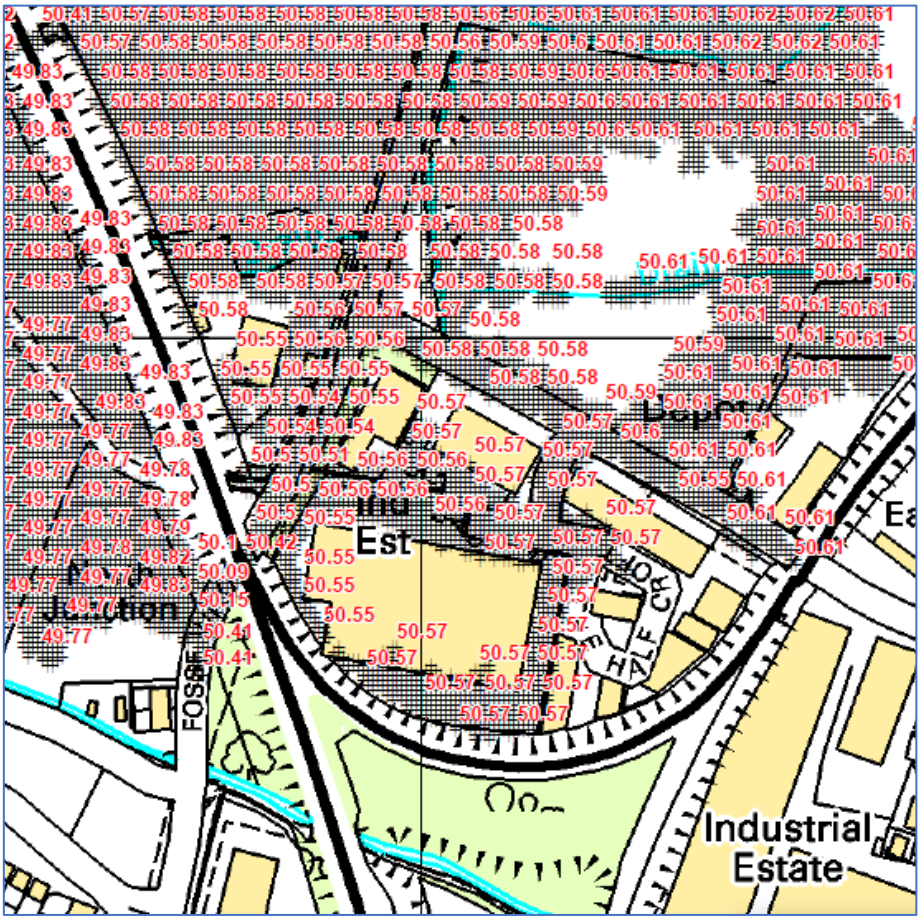
Following the searches conducted, the most up to date fluvial modelling information for the site was obtained from the Environment Agency. The River Wreake lies approximately 670m north west of the site for which 2D modelled flood levels for various return periods have been created. The modelled flood levels have been obtained from the River Wreake and Tributaries Flood Study completed by CH2MHill in May 2015.

Outputs have been derived for the 1% (1 in 100), 1%+CC (1 in 100 + CC) and 0.1% (1 in 1000) flood scenarios. There is currently no nationally agreed flood resilience level for residential and commercial properties, therefore this report will base its findings on the 1%+20%CC (1 in 100 + 20%CC) flood level as this is generally seen to be the recommended standard to defend against for numerous insurance, commercial and utility companies.

The predicted flood depths onsite from the return periods stated above will be individually discussed in the following sections.

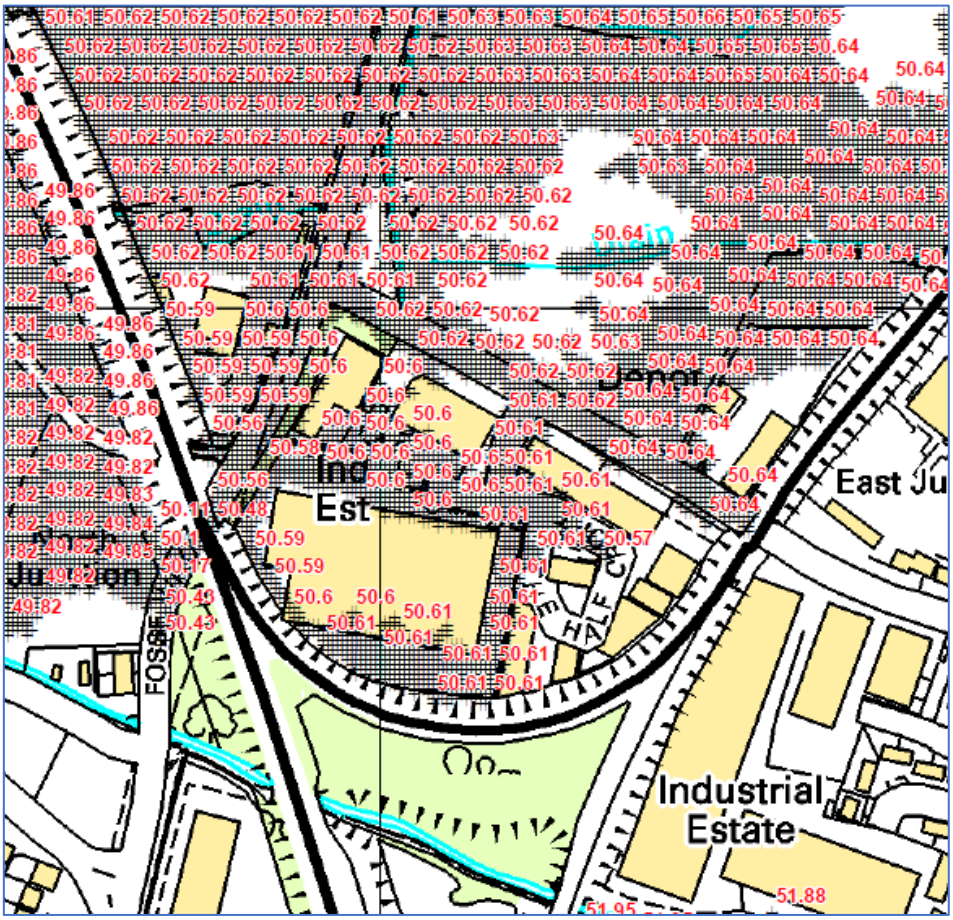
4.2.2.1 1% (1 in 100)

The 1% (1 in 100) flood level is deemed to be a maximum of 50.57mAOD as seen on the below extract. When the predicted flood level is projected across site, the maximum predicted flood depth is 0.51m at the lowest topographical point, 50.06mAOD near the site entrance. External ground levels on site generally vary between 50.20mAOD and 50.50mAOD and therefore widespread depths of between 0.07m and 0.37m can be expected.



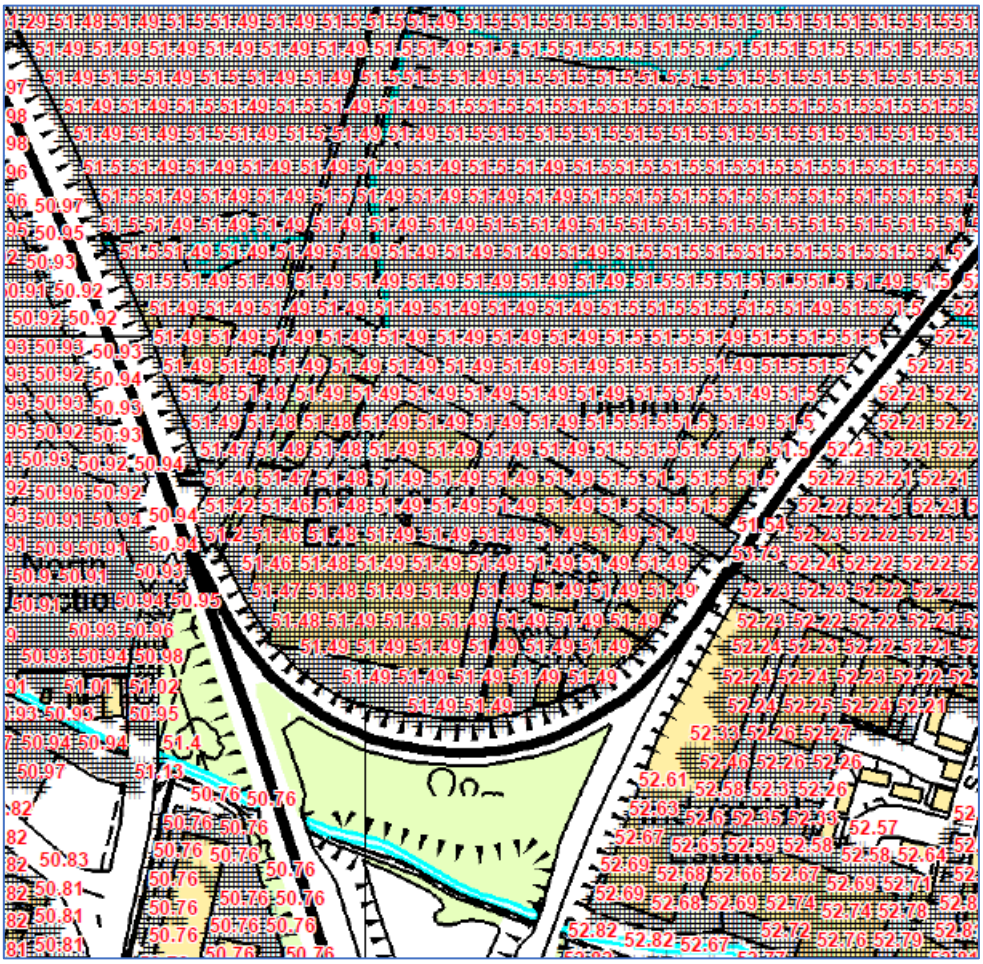
4.2.2.2 1%+20%CC (1 in 100 + 20%CC)

The 1%+20%CC (1 in 100 + 20%CC) flood level is deemed to be a maximum of 50.61mAOD as seen on the below extract. When the predicted flood level is projected across site, the maximum predicted flood depth is 0.55m at the lowest topographical point, 50.06mAOD near the site entrance. External ground levels on site generally vary between 50.20mAOD and 50.50mAOD and therefore widespread depths of between 0.11m and 0.41m can be expected.



4.2.2.3 0.1% (1 in 1000)

The extreme 0.1% (1 in 1000) flood level is deemed to be a maximum of 51.49mAOD as seen on the below extract. When the predicted flood level is projected across site, the maximum predicted flood depth is 1.43m at the lowest topographical point, 50.06mAOD near the site entrance. External ground levels on site generally vary between 50.20mAOD and 50.50mAOD and therefore widespread depths of between 0.99m and 1.29m can be expected.



4.2.3 River Wreake Flood Defences

The EA have confirmed that they do not own or operate any formal flood defences on the River Wreake in the close vicinity of the site.

4.3 Coastal/Tidal Flooding

Due to the geographical location of the site being over 35 miles from the nearest tidal body of water and over 50 metres above mean sea level (mAOD), the flood risk associated with coastal/tidal flooding can be considered negligible.

4.4 Surface Water Flooding

Based on the EA surface water flood maps, the site location is shown to be generally at very low risk of surface water flooding, equating to a less than 0.1% (1 in 1000) chance of flooding in any given year with only a small section on the southern perimeter and roadway entrance off the Half Croft allocated a medium to low risk. The EA surface water flood map can be seen in APPENDIX B.

This considered accurate based on the site topography which shows lowest points of the site to be around the main entrance off the Half Croft as well as the southern corner. It is considered that the risk of inundation to the buildings onsite as a result of surface water is very low as the topography falls away from the building floor levels on every perimeter therefore prohibiting significant accumulation as well as the risk of inundation from overland flow.

No further research was conducted into the surface water flood risk at the site as the risk is greatly outweighed by the fluvial flood risk from the River Wreake.

4.5 Reservoir Flooding

The site location is not shown to be susceptible to flooding during a reservoir breach from the Cropston and Thornton Reservoirs situated upstream of the site approximately 7km and 15km respectively. Based on the EA reservoir flood maps the extent of flooding from an uncontrolled release of water from either reservoir does not affect the site boundary, therefore the flood risk associated with reservoir breach is considered negligible. The EA reservoir flood map can be seen in APPENDIX C.

5.0 Site Flood Depths

Following on from the information gathered within this report the site location has been deemed susceptible to inundation from the 1%+20%CC (1 in 100 + 20%CC) return period from the River Wreake up to 0.55m in depth. The below section will therefore discuss the likely impacts of flooding in the occurrence of a 1%+20%CC (1 in 100 + 20%CC) flood event onsite.

5.1 Production Building

The main building onsite comprises the production facility, cold storage, refrigeration plant, transformer area, offices and canteen.

The lowest threshold level into the building in a lift shaft in the south eastern corner at a level of 50.35mAOD. When compared to the predicted flood level of 50.61mAOD, a maximum flood depth of 0.26m could be expected internally. Discussions with the client during the site survey confirmed that inundation to this area would not adversely affect the lift mechanism or motors which are located at high level and only a clean-up operation would be required.

The remainder of the floor level of the building has surveyed threshold levels of 50.70mAOD or greater, 0.09m above the predicted flood level, and therefore inundation during a 1%+20%CC (1 in 100 + 20%CC) flood event is considered unlikely.

Although inundation is not expected to the main building up to the 1%+20%CC (1 in 100 + 20%CC) return period, it should be noted that inundation up to 0.15m with the building is very unlikely to cause any significant damage to plant or machinery as the lowest vulnerable points were situated a minimum of 0.15m above internal floor level.

5.2 Packaging Warehouse

The packaging warehouse onsite is used predominantly for storage of food packaging such as foil dishes, cardboard boxes, plastic film and labels but does have a small office section on the western side consisting of a kitchen, office space and toilets.

The building floor level has a minimum threshold level of 50.74mAOD which is a minimum of 0.13m above the predicted 1%+20%CC (1 in 100 + 20%CC) flood level of 50.61mAOD. It is therefore considered that inundation to the packaging warehouse is unlikely up to the 1%+20%CC (1 in 100 + 20%CC) return period.

5.3 Raw Materials Warehouse

The raw materials warehouse is used as storage for raw food stocks such as margarine, meat, sauces and herbs and spices and does contain a cold storage room as compressor equipment housed externally on the western perimeter.

The building floor level has a minimum threshold level of 50.72mAOD which when compared to the predicted flood level of 50.61mOD is 0.11m greater. Therefore, inundation to the building is considered unlikely.

The compressor equipment is housed within brick extensions on the western perimeter where the ground levels are circa 50.57mAOD, 0.04m below the predicted flood level. It is considered that inundation up to this depth would not adversely affect any equipment within the structures with only a small clean-up operation required post flood.

5.4 Substation

There is a package substation located to the east of the main building which is owner by Western Power Distribution where the floor level is 50.30mAOD. The floor level of the substation is 0.31m lower than the predicted flood level of 50.61mAOD and therefore is considered susceptible to inundation, however, the lowest point of vulnerability of the internal equipment is a minimum of 0.5m above ground level, circa 50.80mAOD, and therefore damage to the equipment is not expected.

5.5 Gas Supply Building

The incoming gas supply to the site is housed within a small brick building between the main building and raw materials warehouse. The building has a minimum threshold level of 50.54mAOD and therefore could be inundated up to 0.07m in depth during a 1%+20%CC (1 in 100 + 20%CC) flood scenario. Most of the content of the building is sealed gas pipework with a telemetry box situated at 1.0m above floor level, circa 51.54mAOD, which is 0.93m greater than the predicted flood level. Therefore, damage as a result of inundation up to 0.07m in depth is not expected.

5.6 Diesel Tank

There is a diesel tank situated on the southern perimeter of the site where ground levels are around 50.34mAOD. Based on the predicted flood level of 50.61mAOD, flood depths of up to 0.27m are expected in this area. The lowest point of vulnerability of the diesel tank was measured to be 0.61m above ground level, circa 50.95mAOD, which is 0.34m greater than the predicted flood level, therefore damage as a result of flooding is not expected.

5.7 Refrigeration Containers

There are two refrigeration containers located on the eastern perimeter of the main building where ground levels are 50.25mAOD as a minimum. When compared to the predicted flood level of 50.61mAOD a maximum flood depth of 0.36m is forecast.

The floor level of the refrigeration containers was measured to be 0.42m above external ground level, circa 50.67mAOD, which is 0.06m greater than the predicted flood level and therefore inundation is considered unlikely.

5.8 Site Access & Egress

The access roads to the site are topographically lower than the site boundary and hence will flood first and to a greater depth.

The ground levels along The Half Croft are generally between 50.10mAOD and 50.50mAOD which would lead to flood depths of between 0.51m and 0.11m which would likely render access to the site via standard cars infeasible, however access may still be able to be gained via 4x4 or HGV.

Ground levels along High Street to the east have minimum levels of 50.23mAOD which could be subject to flood depths of up to 0.38m during a 1%+20%CC (1 in 100 + 20%CC) flood event which would also limit access to site from 4x4 or HGV.

The wider access road from the south, Fosse Way, enters an underpass below the railway embankment to the west of the main building where the road level was surveyed to be 49.67mAOD. Based on the predicted flood level of 50.48mAOD at this point on the floodplain, depths of up to 0.81m can be expected on Fosse Way during a 1%+20%CC (1 in 100 + 20%CC) flood event. This would render access via any land vehicle infeasible from this direction.

5.9 Vulnerable Asset Summary

Building	Minimum Threshold/Ground Level (mAOD)	1%+20%CC (1 in 100 + 20%CC) Flood Level (mAOD)	Flood depth (m)	Lowest Vulnerable Point (mAOD)	Flood Depth (m)
Production Building	50.70	50.61	-0.09	~50.85	-0.24
Packaging Warehouse	50.74	50.61	-0.13	~50.84	-0.23
Raw Materials Warehouse	50.72	50.61	-0.11	~50.82	-0.21
Substation	50.30	50.61	0.31	50.80	-0.19
Gas Supply Building	50.54	50.61	0.07	51.54	-0.93
Diesel Tank	50.34	50.61	0.27	50.95	-0.34
Refrigeration Container	50.67	50.61	-0.06	50.67	-0.06
Access Roads	49.67	50.48	0.81	49.67	0.81

**Lowest Vulnerable Point is taken as the lowest point at which if contacted by water would cause damage*

*** (-) indicates the height above the predicted flood level*

5.10 0.1% (1 in 1000) Flood Scenario

As noted in section 4.2.2.3 of this report the flood levels within the site boundary to drastically increase during a 0.1% (1 in 1000) to the point where all buildings and assets would suffer inundation. However, the 0.1% (1 in 1000) return period is considered to be an extreme occurrence and is only utilised when considering sites of critical national infrastructure (electricity substations, nuclear power plants etc.). Therefore, as the site location is utilised for commercial/industrial purposes, detailed evaluation to the 0.1% (1 in 1000) is not considered justified and is noted for information purposes.

6.0 Flood History

Through the background research conducted as well as data received from the EA, no records were found to show that the site or immediate locality had suffered any degree of

flooding from any source historically. Flood records however are not exhaustive and therefore this does not mean that flooding has not occurred in the area just that no instances have been recorded.

There is a river gauge on the River Wreake located approximately 710m north west of the site boundary where the highlest level on record is 49.85mAOD on the 11th April 1998. Based on the in-channel modelling of the river, this level corresponds closest to the 5% (1 in 20) return period and hence is considered a relatively high chance of occurrence. Further information with regard to out of channel flooding during this event was unable to be confirmed.

The client has confirmed that during their tenure at the site location no significant flood events have occurred onsite. They have confirmed that accumulation of surface water at low points on Fosse Way and High Street have has occurred historically but has not adversely affected site access or egress.

7.0 Existing Flood Alleviation Measures

As far as property level flood alleviation measures are concerned, no formal flood defences were observed during the site survey.

Existing flood defences on the River Wreake are discussed in section 4.2.3 of this report.

8.0 Recommendations

Following on from the information gathered within this report, the site location has been deemed a greater risk of inundation during a 1%+20%CC (1 in 100 + 20%CC) fluvial flood event from the nearby River Wreake although flood water ingress into the main building and storage warehouses onsite is not expected up to this return period.
Taking into account that the flood risk to property onsite is only applicable from a flood event greater than 1%+20%CC (1 in 100 + 20%CC) in magnitude, a low chance, the below recommendations will focus on practical measures to prevent damage to any sections of the site susceptible to inundation and also plan for site evacuation during the unlikely occurrence of an extreme flood event.

8.1 Main Building

As discussed above the only point of the main building considered susceptible to inundation is a lift in the south eastern corner up to a maximum depth of 0.26m.

Although this is considered by the client to not cause any significant damage or impaired operation, it is recommended that in the event of a flood warning being issued in the local area that the lift is raised above the level of the ground floor so that any clean-up operation is minimised.

8.2 Vehicles

Cars are mainly parked on the northern perimeter of the main building and southern perimeter of the packaging warehouse where predicted flood depths of between 0.2 and 0.5m are expected. Depths of flooding of up to 0.5m are likely to cause mechanical and aesthetical damage to all cars parked onsite.

Given than the access roads to the site are lower and will flood first, in the event of a flood warning being issued in the locality, all employees should be informed to evacuate site as quickly as possible to ensure vehicles can be safely driven offsite and to an area out of the predicted flood risk before flooding occurs at the site.

Goods vehicles are generally stored on the southern perimeter of the main building where flood depths are likely to amass up to 0.3m in depth at most. This is unlikely to cause

mechanical or aesthetical damage to these type of vehicles as they the door cill level is significantly greater than that of a standard car. However, it is recommended to move goods vehicles off site if a flood warning is issued to a separate storage facility out of the flood risk zone such as a warehouse unit or large car park area will need to be identified for use as temporary storage as well as provision for sufficient manpower to move the vehicles as efficiently as possible. Responsible parties at the site should conduct further research into local areas which are suitable to temporarily store vehicles such as supermarket/retail park car parks, park and ride facilities or local businesses outside of the flood risk which may have external yards which can be utilised. Permission for use will have to be sought prior to usage from the landowner/operator.

8.3 Emergency Response Planning

A flood plan can be created to educate all responsible parties and employees onsite of the precited flood risk. Flood plans can include the following:

- Turn off utilities (electric, gas, water) at the mains.
- Creating a safe route of access/egress (follow advice from the emergency services)
- Move vehicles to higher ground on or off site.
- Backup server data.
- Plan site reoccupation and clean up following a flood event.

Implementing a flood emergency response plan would allow for quick and efficient evacuation of the site in the event of a flood warning and minimise the risk of damage.

8.4 EA flood Warnings

The premises are located within an area where flood warnings are available from the Environment Agency. Step by step instructions on how to sign up for flood warnings can be found on the below link https://www.gov.uk/sign-up-for-flood-warnings.

Even though the flood risk to the site location is considered low, registering for flood warnings is still recommended as this will give a clear indication of an impending extreme flood event which could potentially result in a risk to life.

9.0 Conclusion

Pukka Pies Ltd in Syston is susceptible to fluvial flooding from the nearby River Wreake during a 1%+20%CC (1 in 100 + 20%CC) scenario although no inundation is expected to any of the main buildings onsite, with the exception of the lift shaft in the south eastern corner of the production facility.

Detailed 2D modelling has shown the extent of fluvial flooding from the River Wreake to inundate the external yard and car park area of the site up to 0.55m in depth, however, the floor levels of the production facility, packaging warehouse and raw materials warehouse are all above the predicted flood level up to the 1%+20%CC (1 in 100 + 20%CC) return period. Inundation is expected to the Western Power substation, gas supply room and compressors on the western perimeter of the raw material warehouse but the lowest point of vulnerability of the equipment within these buildings is sufficiently greater than the predicted flood level and therefore would not cause impaired operation.

Flood levels within the site boundary do drastically increase during a 0.1% (1 in 1000) flood event to the point where all buildings and assets would suffer inundation. However, the 0.1% (1 in 1000) return period is considered to be extreme and therefore has a low probability of occurrence.

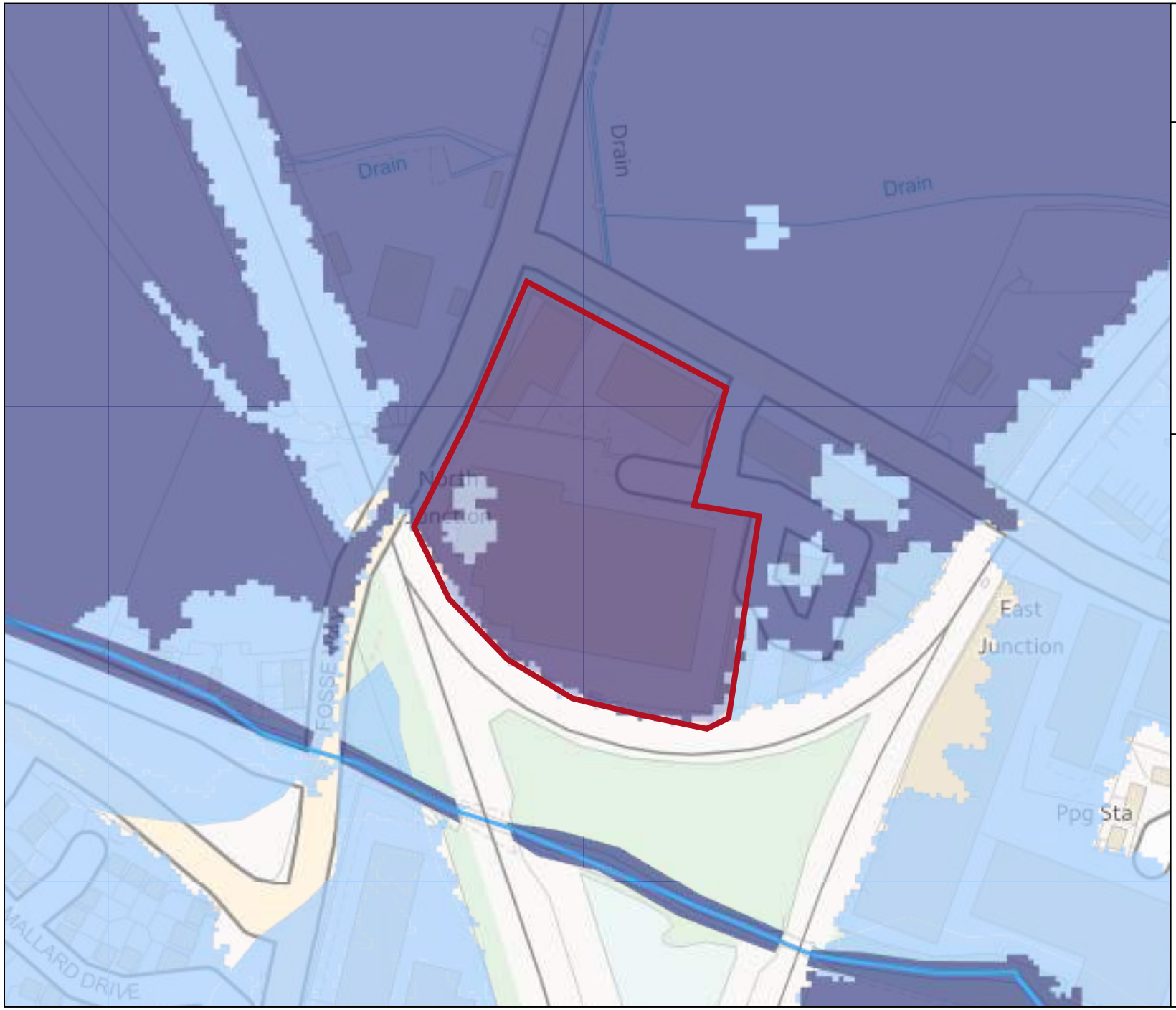
Surface water accumulation is considered possible in the lowest lying areas of the site, particularly along the site access road and in the external yard to the south of the production facility. However, as the topography falls away from the building floor levels onsite it is not expected that inundation will occur as a result of accumulation or overland flow of surface water.

Taking into account the information derived within this report, minor recommendations have been made considering practical measures to prevent damage to any sections of the site susceptible to inundation and also plan for site evacuation during the unlikely occurrence of an extreme flood event.

10.0 Glossary

Word	Definition
1D	Estimation of peak flow and elevation in the river channel only
2D	Estimation of flows and elevations across the floodplain as a result over the river channel overtopping
CC	Climate Change
Fluvial	Rivers
mAOD	Meters Above Ordnance Datum - a vertical datum used by ordnance survey as the basis for deriving altitudes on maps.
Pluvial	Rainfall or surface water
Return Period	Estimated likelihood of an event
Topography	The arrangement of the natural and artificial physical features of an area

APPENDIX A
EA Flood Map for Planning



Environment Agency

Flood map for planning

Your reference
Pukka

Location (easting/northing)
462002/311892

Scale
1:2500

Created
7 Nov 2019 9:28

- Selected area
- Flood zone 3
- Flood zone 3: areas benefitting from flood defences
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Flood storage area

0 20 40 60m

APPENDIX B
EA Surface Water Flood Map

APPENDIX C
EA Reservoir Flood Map

APPENDIX D
Site Photos

Photo 1 – Northern face of the production facility showing main entrance

Photo 2 – Flour silos on the western perimeter of the production building

Photo 3 – Boiler house on the western perimeter of the production building

Photo 4 – External yard area on the southern perimeter of the production building

Photo 5 – Raised floor of the loading bay on the southern perimeter of the production building

Photo 6 – Eastern face of the production building

Photo 7 – Car park area on the northern perimeter of the production building

Photo 8 – Pastry production line

Photo 9 – Large pressure cookers

Photo 10 – Pre-baking production lines

Photo 11 – Post-baking packaging area

Photo 12 – Refrigeration plant in the production building

Photo 13 – Transformer area within the production building

Photo 14 – Electrical switchgear within the production building

Photo 15 – Lower level lift shaft in the south eastern corner of the production building

Photo 16 – South western face of the packaging warehouse

Photo 17 – View of stock within the packaging warehouse

Photo 18 – Kitchen in the office section of the packaging building

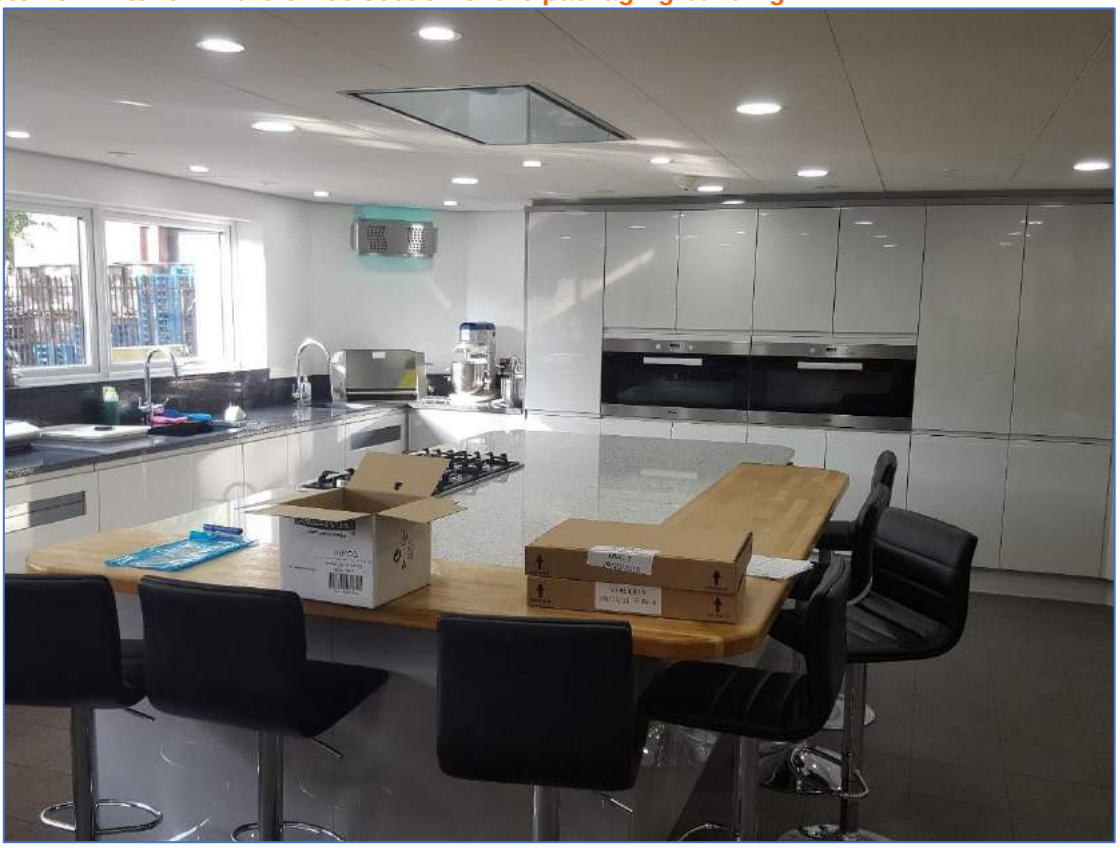


Photo 19 – Roller shutter doorway entrance to the raw materials warehouse

Photo 20 – Stock storage within the raw materials warehouse

Photo 21 – Substation on the eastern perimeter of the production building

Photo 22 – Electrical switchgear within the substation

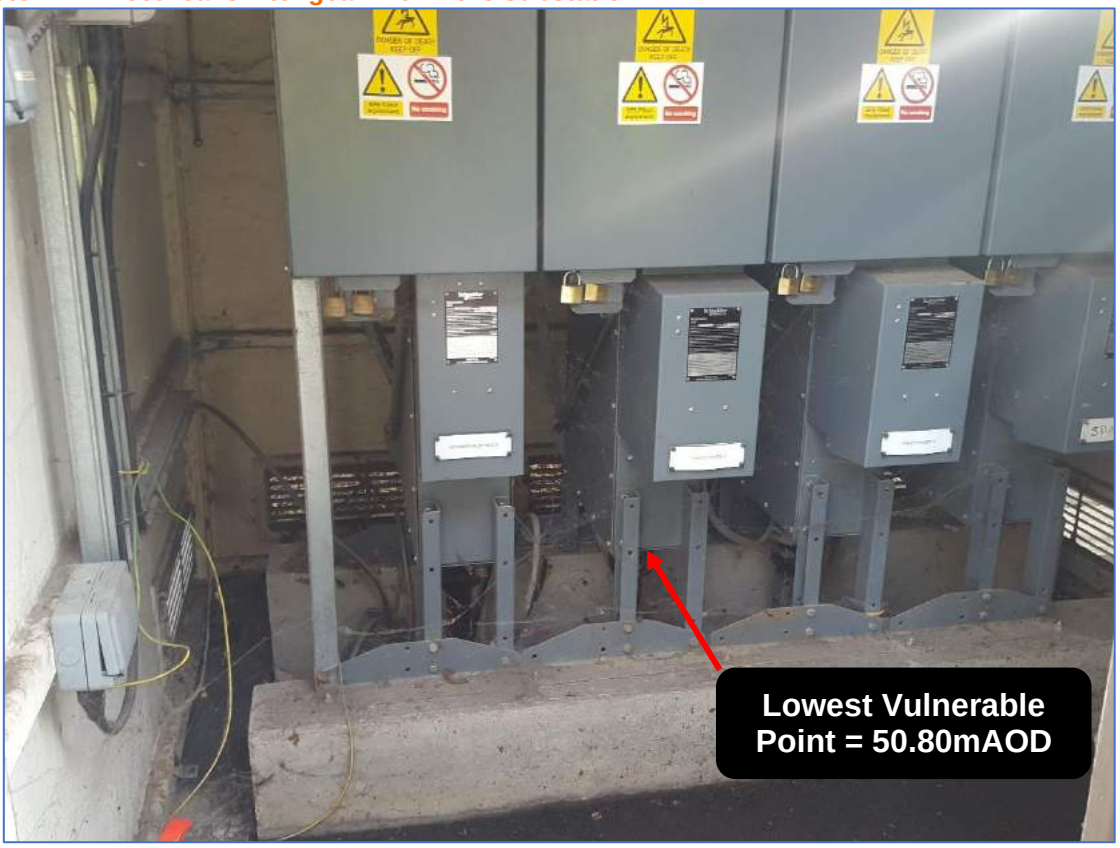


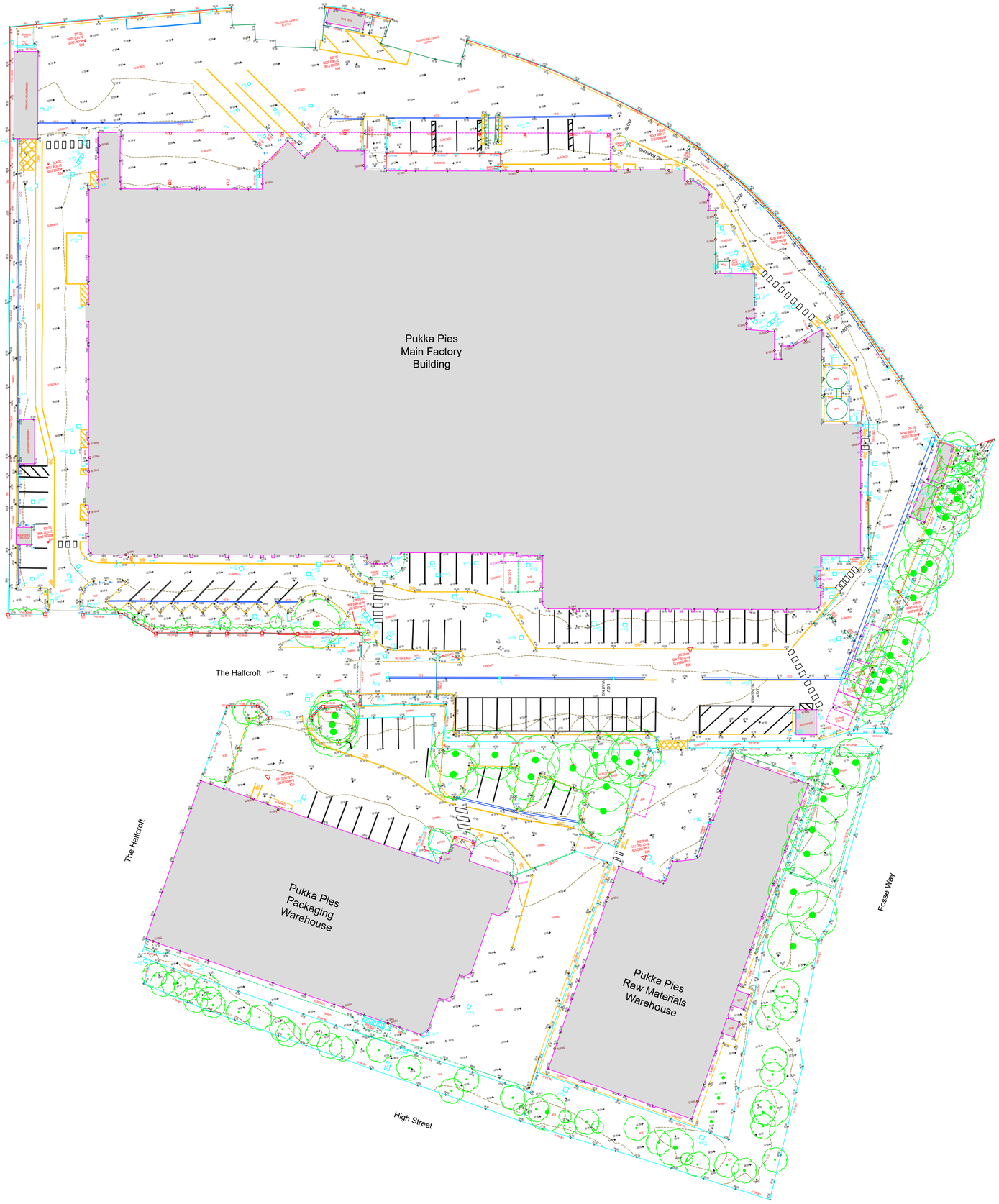
Photo 23 – Gas supply building

Photo 24 – Internal view of the gas supply building

Photo 25 – External refrigeration container

Photo 26 – Diesel tank on the southern perimeter of the production building

APPENDIX E
Site Topographic Survey



Topographical Survey Legend

BUILDINGS AND WALLS

- Building
- Building Open Sided
- Ruin (RUIN)
- Passage
- Wall with Height (Wall Ht 1.5m)
- Retaining Wall (R/W)

FENCE STYLES AND DESCRIPTIONS

Close Boarded	C/B
Corrugated Iron	C/I
Chestnut Paling	C/P
Chainlink	C/L
Handrail	H/R
Interwoven	IWN
Iron Railings	I/R
Lattice	L/T
Miscellaneous	Misc
Palisade	PAL
Post & Chain	P/C
Post & Rail	P/R
Post & Wire	P/W
Rigid Mesh	R/M
Wire mesh	W/M
Stile	
Gate	
Fence linestyle	

ROADS

- Kerbs
- Edge of Surfacing
- Pedestrian Crossing (PC)
- Track (TRACK)
- Footpath (FP)

STREET FURNITURE

Belisha Beacon	BB
Bus Stop	BS
Bollard	B
Cats Eye	CE
Coal Chute	CC
Closed Circuit TV	CCTV
Drain	DR
Electricity Pole	EP
Flood Light	FL
Flag Staff	FS
Lamp Post	LP
Letter Box	LB
Name Plate (street)	NP
Mooring Ring	MR
Mile Post or Mooring Post	MP
Service Marker	MK
Mile Stone	MS
Post	P
Parking Meter	PM
Reflector Post	RP
Rodding Eye	RE
Road Sign	RS
Speed Camera	S/CAM
Information Sign	SIGN
Stay	SY
Traffic Light	TL
Telegraph Pole	TP
Traffic Light Push Button Post	TLP
Traffic Light Control	TLC/P
Control Box	C/BOX
British Telecom Box	BT BOX
Electricity Box	EL BOX
Gas Box	GAS BOX

INSPECTION CHAMBERS AND PIPES

Inspection Cover	IC
Inspection Cover (Elec)	IC/EL
Manhole	MH
British Telecom Cover	BT
Inspection Cover (Comms)	IC/COM
Cable TV	CATV
Inspection Cover Traffic Signals	IC/TL
Gully	G
Kerb Outlet	KO
Vent Pipe	VP
Down Pipe	DP
Rain Water Pipe	RWP
Soil Pipe	SVP
Gas Pipe	G-PIPE
Unable to lift cover	UTL
Stop Tap	ST
Stop Valve	SV
Lamphole	LH
Hydrant	HYD
Earth Rod	ER
Gas Valve	GV
Water Meter	WM
Washout	WO
Rodding Eye	RE

GENERAL INFORMATION

Petrol Pump	PP
Basement Light	BL
Footbridge	FB
Dish Type Channel	D.CH
Slot Type Channel	S.CH
Grate Type Channel	G.CH
Tactile Paving	TAC
Crash Barrier	C/BR
Column	COL
Stanchion	STAN
Car Vacuum	VAC
Offset Fill	OF
Air Valve	AV
Trough	TR
Chimney	CHY
Telephone Call Box	TCB

OVERHEAD FEATURES

Electricity Pylon	E.PYLON
Electricity	ETL
Telephone	TTL

WATER FEATURES

- Canal
- Stream
- Ditch
- Weir
- Culvert
- Grip (Land Drain)
- Spring (SPR)

RELIEF AND VEGETATION

- Hedge
- Edge of wood/Bushes
- Stump (STUMP)
- Individual Tree
- Slopes with Height Greater than 1m
- Cliff Face
- Marsh
- Reeds

LEVEL AND HEIGHT INFORMATION

Standard Spot Height	+ 123.45
Precision Spot Height	+ 123.456
Bed Level	+ BL23.92
Water Level	+ WL24.92
Soffit Level	+ SL25.92
Threshold Level	+ TH26.98
Cover Level	+ CL26.45
Invert Level	+ IL25.15
Pipe Soffit Level	+ PSL5.00
Floor Level	+ FL6.00
Finished Floor Level	+ FFL6.00
Springing Level	+ AL7.00
Eave Level	+ EL7.00
Ridge Level	+ RL9.00
Roof Hip Level	+ RHL8.50
Flat Roof Level	+ FRL7.00
Top of Canopy Level	+ TOP/C7.00
Underside of Canopy Level	+ SOF/C6.50
Window Sill Level	+ WSL8.00
Window Head Level	+ WHL9.00
Springing Level	+ SPL8.50
Arch Level	+ AL7.00
Cable Level	+ CHT8.55
Top of Wall Level	+ TWL10.00
Underside of Beam Level	+ UBL9.55
General Height	+ HT9.00

SURVEY INFORMATION SIGNS

- Permanent Ground Marker
- O.S. Trig Station
- O.S. Bench Mark

GEOTECHNICAL INFORMATION

Borehole	BH
Trial Pit	TP
Monitor Pin	MON
Probe Hole	PH
Window Sample	WS

N

Client

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PUKKA PIES LIMITED, THE HALFCROFT ,
SYSTON, LEICESTER, LE 7 1LD

Project

FACTORY DRAWINGS

Drawing Title

FULL SITE PLAN
TOPOGRAPHICAL SURVEY

Date	May 2019	Scale	1:350 @ A1
Drawn	MHLS / CadMan	Checked	
Drawing No.	PP-19-130	Revision	

PP-19-130 - Pukka Pies - Full Site Plan - Topographical Survey - May 2019.dwg