BUTLINS SKYLINE LTD

CROUCH WATERFALL

LEVEL 2 FLOOD RISK ASSESSMENT AND DRAINAGE STRATEGY REPORT for

BUTLINS SKEGNESS TEMPORARY BUILDING

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Contents

1.0 INTRODUCTION

1.1 Commission

Crouch Waterfall has been commissioned by Butlin's Skyline Ltd to undertake Flood Risk Assessment and Drainage Strategy (FRA) for the proposed development of a temporary building to house a stage venue for guests at the resort.

1.2 Background

This FRA has been prepared to support the planning application for the Butlin's Skegness site, which will henceforward be referred to as the 'wider site'. The wider site contains a holiday centre which Butlin's Skyline Ltd has operated in Skegness since 1936. The Butlin's Skegness Resort is currently fully developed for residential and leisure use.

The area of land situated to the east of the main cluster of recreational buildings, immediately east of the large tent building called the 'Pavilion' and currently occupied by a large landscaped space has been selected as the development site and will hereafter be referred to as the "Site". It is situated within East Lindsay District Council which itself is situated within Lincolnshire County Council. The wider site comprises land owned and controlled by Butlin's Skyline Ltd. A topographical survey of the Site is contained within Appendix A.

According to Environment Agency flood zone map, which is contained within Appendix B, most of the wider site is located within Flood Zone 3a for flooding from sea. However, this does not take into account the tidal flood defences along the site boundary. Therefore, despite the fact that the site total size is smaller than 1 hectare, a site-specific FRA is required to be submitted as part of the planning application.

2.0 FLOOD RISK ASSESSMENT METHODOLOGY

2.1 Source-Pathway-Receptor Model

Crouch Waterfall's approach to an FRA is based on the Source-Pathway-Receptor model. The Source-Pathway-Receptor model firstly identifies the causes or 'sources' of flooding to and from a development. The identification is based on a review of available information such as mapping, local conditions and consideration of the effects of climate change. The nature and likely extent of flooding arising from any one source is considered, e.g. whether such flooding is likely to be localised or widespread. As well as flooding from more obvious sources such as rivers and the sea, FRAs include an assessment of other sources of flooding as required in the NPPF including groundwater flooding, flooding from overland flow flooding and flooding from artificial sources.

The presence of a flood source does not always imply a risk. For example, the presence of a sewer does not necessarily increase the risk of flooding unless the sewer is local to the site and ground levels encourage surcharged water to accumulate. The exposure pathway or 'flooding mechanism' determines whether there is a risk of exposure to a flood source.

The identification of flooding pathways is typically undertaken by considering the local and site topography, the proximity of the flood source to the receptor and the potential flood conveyance routes local to the site. For more detailed assessments hydrological or hydraulic modelling may be required to quantify the flood risk and identify specific pathways, for the particular flood source.

If a flooding mechanism is considered not to be present, then the risk from the flood source is considered to be negligible.

2.2 Assessment of Flood Risk to Receptors

If a flood source and flooding pathway are identified, the assessment of the flood risk to the receptor is determined by combining the probability of the flood event occurring with the severity of impact (or consequences) if the flood event were to occur. Receptors include any people or buildings within the range of the flood source, which are connected to the source by a pathway.

The probability of a flood event occurring is usually determined from historical records of events, available modelling information and the design standard and condition of any infrastructure associated with the flood source. For more detailed assessments, hydrological or hydraulic modelling may be used to determine the frequency of flood events occurring, for a particular flood source.

The potential severity of the impact is determined by considering a combination of the type of flood source, the flood mechanisms identified, the layout and design of the proposed receptor and the vulnerability of the receptor.
The Crouch Waterfall FRA approach involves a desk-based review of available information to establish:

- Likely flooding sources;
- Potential flooding pathways (mechanisms of flooding);
- Probability of a flood event occurring; and,
- Severity of impact of a flood event for the site.

In summary, for there to be a flood risk all the elements of the Source-Pathway-Receptor model must be present. Furthermore, effective mitigation can be provided to reduce the magnitude of flood risk by removing one element of the model. For example, by removing the pathway, defending against the flood source, incorporating flood management or flood resilient measures into building receptors, or providing safe access and egress and flood evacuation plans for human receptors.

2.3 Aims and Objectives

The aim of this report is to provide Butlin's Skyline Ltd with a Level 2 FRA and DS, to identify the flood risk associated with each potential flood source and where required, identify appropriate measures that could be used to mitigate any significant risk as well as provide a strategy to implement a suitable drainage solution to complement the FRA.

In order to achieve the above, the following objectives will be met:

- Identify all potential sources of flooding and determine whether potential pathways exist which may cause a flood risk to the proposed development;
- Determine whether the proposed development will increase flood risk elsewhere;
- Establish existing surface water runoff rates;
- Determine the surface water management requirements for the Site in keeping with the principles of current planning policy;
- Propose mitigation measures to reduce the flood risk posed to, or arising from the Site post-development;
- Provide a suitable surface water drainage strategy to meet the requirements of the NPPF and Local Policy.

3.0 SITE DESCRIPTION

3.1 Site Location

The Site is located within the eastern section of the wider site and it immediately east of the tent building known as the 'Pavilion'. It is located on an existing section of landscaped space owned and managed by Butlin's Skyline Ltd.

The postcode to the wider site is PE25 1NJ. An aerial photograph of the wider site is shown in Figure 3-1.

Figure 0-1 Aerial Photograph (© Google 2020)
The red hatch represents the development area for the Site.

3.2 Topography

The topographic survey of the Site, included within Appendix A, shows that the Site is located at ground levels that vary between 3.05mAOD and 3.50mAOD, and is relatively flat, with a predominant gradual fall of approximately 1:200 towards the north west over the central section. To the south east, an asphalt surfaced car park exists and includes levels with a central high point of approximately 3.50mAOD and edge levels of approximately 3.35mAOD. This car park contains approximately 50 car park spaces arranged in 3 equal rows together with a central access route.

The remainder of the Site comprises mainly lawn area with a few gravel paths, all of which generally fall to the north west.

The lawn surface forming the majority of the Site is surrounded by an asphalt road surface along its whole perimeter which varies in levels but generally ties in with the lawn surface level before climbing in all directions over the asphalt surface towards the surrounding buildings. The exception to this is on the eastern side of the Site where levels from the lawn continue to fall away from the lawn across the asphalt road surface towards the nearby buildings.

To the west of the site, on the opposite side of the asphalt road surface from the lawn, the ground levels rise to form the start of the sea defence structure, with a further road surface shown on the topographical survey as having surface levels of approximately 4.1mAOD.

3.3 Site Geology and Hydrogeology

A site-specific ground investigation has yet to be undertaken for the Site. However, details of the existing ground conditions have been obtained from various sources described below:

With reference to the British Geological Survey (BSG) geological mapping for the area [http://mapapps.bgs.ac.uk/geologyofbritain/home.html – accessed Nov 2020], the Site is underlain by superficial Tidal Flat Deposits (clay and silt) underlain by the Welton Chalk Formation (Chalk). See Appendix D for map extracts.

As the Site is occupied by a large landscaped area, the top part of the surface will be typically made up of a mixture of 100-250mm of topsoil and made ground.

Given the proximity of the sea and the nature of the geological deposits stated above, ground water is likely to be at relative shallow depths.

Soakaway tests have not been undertaken for the Site. The superficial and bedrock deposits description from the BGS maps indicate that the underlying strata are likely to be suitable for infiltration due to the presence of permeable strata. However, the low-lying nature of the site suggests that groundwater is likely to be a barrier to the used of infiltration system for surface water disposal on Site.

3.4 Identification of Watercourses and Water Bodies

Appendix B contains extracts of the maps available on the Environment Agency website showing details of the watercourses and water bodies associated with the wider site. The map shows that there are no Environment Agency Main Rivers in the vicinity of the Site. The existing watercourses are all local watercourses expected to be managed by the Local Authority. The closest of these local water courses is located approximately 500m west of the Site.

The Site lies at a distance of approximately 50m from the sea at its closest point and is separated from it by a sea defence wall.

3.5 Existing Surface and Foul Water Drainage

The wider site operates a network of foul water drainage pipes that store and pump foul water to the Anglian Water sewers. Surface water from the wider site is discharged to a private drainage network. No surface or foul water infrastructure exists to serve the existing Site as it is comprised of a landscaped section of land without need for positive drainage features.

Private drainage infrastructure may exist below the existing Site footprint which may need to be diverted to make way for the proposed development. Further consideration to this matter is given in Section 7.

3.6 Strategic Flood Risk Assessment

The East Lindsey Strategic Flood Risk Assessment [March 2017] states:

"The Flamborough Head to Gibraltar Point Shoreline Management Plan (SMP) along with the Humber Estuary, and the Wash (SMPs) provide detailed assessments of coastal processes and issues for the full length of the Lincolnshire Coast. These consider how those processes might change between the present day and 2115 and set out what management policies will be appropriate for flood management in the future to respond to anticipated climate change. In broad terms the policies of the SMPs presently promote a 'holding the line' i.e. maintain current lines of defence.
The intensively developed stretch between Mablethorpe and Skegness is an eroding coastline and the North Sea is held back by hardened defences which are supplemented by a beach nourishment programme (Lincshore). This scheme aims to protect against a 1 in 200 year (0.5% in any year) tidal flood by increasing the level of the beach and reducing the risk of waves

reaching the main defences and going over the seawalls. It protects the clay foreshore against further erosion and prevents rapid deterioration of the defences."

Based on the above, the proposed development is considered to be appropriate its proposed location and expected lifespan of 3 years given that the flood defences will be maintain at their current levels in the foreseeable future.

"Avoid inappropriate development in areas at risk of flooding by directing development away from areas at highest risk but where development is necessary, making it safe without increasing flood risk elsewhere."

The proposed development is to be located adjacent to where guests are already present on the wider site and where they will be able to use the venue. Given that the guests are already present, the proposed development cannot be constructed elsewhere without it being redundant and by ensuring that the surface water drainage design provides sufficient capacity to match the existing drainage regime, then flood risk to surrounding areas will not be increased.

3.7 Current Flood Risk Management

The Site is within Flood Zone 3a and benefits from the presence of sea defences immediately to the east which protect the Site from the sea and tidal flooding. The flood defences are maintained by the Environment Agency.

4.0 Proposed Development

The existing Site will be redeveloped as a temporary building which will be used to house large social events. The structure will be installed to operate a maximum of 3 years.

The proposed temporary building will measure approximately 40m wide and 65m long. It will be wholly located within the existing landscaped area and will not encroach on the existing building to the north, west and south nor will it affect the existing private roads around the Site. The building will include a suspended floor with ramps where required to provide access from surrounding existing ground levels.

The proposed development will not result in an increase in the number of guests at the wider site. The building will be used by guests already present on the wider site.

An outline schematic of the proposed development is shown on a sketch contained within Appendix F.

4.1 Proposed Site Topography

The existing topography will generally be retained. However, some existing levels will be altered to accommodate the access and egress routes to the proposed structure. Local changes to the topography may be required for the construction of suitable drainage features for the proposed development.

4.2 Proposed Foul Drainage Strategy

The existing Site does not include any foul water drainage infrastructure that serves the Site itself. The guests using the proposed temporary building will be those already at the resort which has been operating at reduced capacity compared to pre-COVID conditions. Therefore, there will not be any increase in the overall foul water discharge rate and volume from the wider site. The proposed building will include two accessible toilets for those needing this service within the building whereas all other guests and staff will use the existing toilets located in the surrounding buildings.

The proposed toilets will be connected to the nearest suitable private foul water drains, all in line with Building Regulations part H.

4.3 Proposed Surface Water Drainage Strategy

The proposed surface water drainage strategy is dealt with within chapter 7 of this report – Flood Risk from the Development.

5.0 Planning Policy

5.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how they are expected to be applied. This document replaces the previous national planning policy document relevant to flood risk 'Planning Policy Statement: Development and Flood Risk'.

The policy aims to avoid inappropriate development by directing it away from the areas that are at highest risk. Where development is necessary within the floodplain, it must be demonstrated to be safe without increasing flood risk elsewhere.

Planning policy states that a site-specific FRA is required for development proposals that are located within Flood Zone 2 and 3. A site-specific FRA is also required for development proposals greater than a hectare located in Flood Zone 1.

A site-specific FRA should identify and assess the risks of all sources of flooding to and from the development and demonstrate how these flood risks will be managed so that the development remains safe for its lifetime, taking climate change into account.

5.2 Flood zone definition

The Technical Guidance to the National Planning Policy Framework (NPPF) defines the flood risk zones that are published by the Environment Agency, which are as follows:

- Flood Zone 1 - the low probability zone which is defined as having a less than 0.1% (or 1 in 1000 year) probability of flooding each year;
- Flood Zone 2 – the medium probability zone which is defined as having between 0.1% and 1% (or between 1 in 1000 and 1 in 100 year) probability of fluvial flooding or between 0.1% and 0.5% (or between 1 in 1000 and 1 in 200 year) probability for flooding from the sea each year;
- Flood Zone 3a – the high probability zone which is defined as having a 1% or greater (or 1 in 100 or greater) probability of fluvial flooding, or a 0.5% or greater (1 in 200 or greater) probability of flooding from the sea each year;
- Flood Zone 3b – Functional Floodplain which is defined as land where water has to flow or be stored in times of flood.

5.3 Sequential Test and Vulnerability Classification

The NPPF aims are to ensure that flood risk is taken into account at all stages of the planning process to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas of highest risk. On a district wide scale this is achieved through the application of the Sequential Test by the Local Planning Authority (LPA). The Sequential Test encourages LPAs to steer development to areas of lowest flood risk on a borough / district wide level and only develop in flood risk areas where absolutely necessary. The LPA should apply the Sequential Test based on information presented in their Strategic Flood Risk Assessment (SFRA).

Given the temporary nature of the building and its proposed use as a leisure venue for patrons of the Butlin's site, the Sequential Test is assessed as being passed on the basis that the building can only serve its purpose in its proposed location and will not increase the risk to the users as they will already be on site.

The NPPF Sequential Test evaluates the risk of flooding, based on Environment Agency Flood Zones, against the vulnerability of the proposed development.

According to the Technical Guidance of the NPPF, the proposed development is classified as Less Vulnerable since the proposed temporary building meets the description below:

Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'More Vulnerable' class; and assembly and leisure.

Flood Risk Vulnerability classification (see Table D2)		Essential Infrastructure	Water compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone (see Table D.1)	Zone 1	✔	✔	✔	✔	✔
	Zone 2	✔	✔	Exception Test required	✔	✔
	Zone 3a	Exception Test required	✔	✗	Exception Test required	✔
	Zone 3b 'Functional Flood plain'	Exception Test required	✔	✗	✗	✗

Table 5-1 – Flood Risk Vulnerability and Flood Zone Compatibility

Less Vulnerable developments are appropriate in Flood Zone 1, 2 and 3a. Less Vulnerable developments are not appropriate for Flood Zone 3b areas. Therefore, the development classification (Less Vulnerable) is considered to be suitable for this Flood Zone (3a).

6.0 FLOOD RISK – TO THE DEVELOPMENT

This section incorporates an assessment of flood risk from the all potential flood sources as required by the NPPF.

6.1 Flood Risk from Tidal Sources

Tidal sources of flooding include seas and estuaries. Flooding from these sources can occur through overtopping of defences, breaching of defences and wave action.

6.2 Flooding from Tidal Sources Risk Assessment

The Environment Agency Flood Map for Planning (Appendix B), indicates that the Site is in a high probability flood zone (Flood Zone 3) for flooding from sea. However, this does not take into account the tidal flood defences along the site boundary.

The wider site is protected by sea flood defence against a flood of 0.5% Annual Exceedance Probability (AEP). Due to the presence of flood defences, the site is not expected to be flooded from the sea. The SFRA confirms that the flood defences will be maintained for the foreseeable future.

In the case of wave overtopping or a breach in the sea defence wall, occupants of the proposed temporary building will be evacuated to other areas that are elevated above the expected flood level. A Flood Emergency Plan has been developed in order to define the evacuation procedure. A copy of this document is included within Appendix G and it remains valid as the proposed development will not result in a change to the population on Site. The Site operator is signed up to the Environment Agency Flood Line Warnings Direct service and maintains open lines of communication with the Environment Agency in regard to the ongoing matters associated with the operation of the site.

With the existing sea defence standard taken into consideration and the procedures in place in case of breach or overtopping, the risk of tidal flooding has been assessed to be low during the life time of the development.

6.3 Flood Risk from Fluvial Sources

Flooding from fluvial sources can occur through inundation of floodplains from watercourses; inundation of areas outside the floodplain due to the influence of bridges, embankments and other features that artificially raise water levels; overtopping of defences; breaching of defences; blockages of culverts; and blockages of flood channels, or flood corridors.

A local watercourse is situated within the wider site, approximately 500m to the west of the Site. The watercourse is understood to be an Internal Drainage Board watercourse that includes a managed operation.

6.4 Flooding from Fluvial Sources Risk Assessment

The watercourse is located at a significant distance from the Site and is therefore not understood to pose a flood risk.

Therefore, the probability of fluvial flooding extending into the Site is considered to be low.

6.5 Flood Risk from Pluvial Flooding

Pluvial flooding occurs when rainfall cannot infiltrate the surface, or when intensity exceeds the infiltration capacity of the ground. Pluvial flooding can be evident in many forms and can range from deep ponding of surface water in low lying areas with poor drainage to fast flow via overland routes in heavily urbanised or steep catchments.

The Site comprises a large landscaped area surrounded by buildings and roads. The Environment Agency surface water Flood mapping suggests that surface water flooding is not likely for the site. A copy of the Environment Agency mapping for surface water flooding is included within Appendix B. The existing site levels shown on the topographical survey suggest

that runoff from the surrounding areas may reach the building footprint from the road around the Site, from the north, south and east.

6.6 Pluvial Flooding Risk Assessment

A source of pluvial flooding exists from the road surface around the proposed building. However, the road is drained as part of the existing site surface water drainage network and is not likely to generate large overland flows given the scale of the impermeable surface. In addition, the proposed building will be constructed at a finished level to suit the existing levels with a suspended floor arrangement, meaning that the floor will be set above existing ground levels in all locations. Therefore, any residual runoff from the road surface not captured by the local drainage system is not likely to adversely affect the proposed building.

The risk of flooding from pluvial sources is therefore considered to be low.

6.7 Flood Risk from Sewers

Sewer flooding occurs when the sewer capacity becomes exceeded or where a blockage occurs causing the sewer to surcharge and flood.

Drainage records obtained from the Client do not show any drainage infrastructure within the footprint of the proposed building.

6.8 Flooding from Sewers Risk Assessment

Discussions with the Client has revealed that significant sewer flooding has not been recorded in the vicinity of the Site. In addition, the proposed development is located in an area of the wider site that is away from the expected discharge points for the wider site drainage system (foul and surface). Therefore, it is unlikely that major sewers are found in the vicinity. In addition, the majority of the local drainage network is expected to be to the north west of the proposed building, from which point the existing ground levels appear to fall away from the site.

The risk of flooding from sewers is therefore considered to be low.

6.9 Flood Risk from Groundwater

Groundwater flooding can occur when groundwater levels rise above the surface of the site and infiltrate into the site via the ground surface.

The underlying strata are expected to be permeable, based on the BGS mapping search results.

6.10 Flooding from Groundwater Risk Assessment

While the nature of the ground conditions on Site suggest that groundwater could occur on Site, records do not indicate that such events have occurred. In addition, the wider site includes area set at lower ground level compared to the proposed Site immediately to the west of the Site, suggesting that any ground water flooding that might occur would fall away from the Site.

Therefore, the overall flood risk from groundwater on the Site is considered to be low.

6.11 Flood Risk from Artificial Sources

Artificial flood sources include raised channels such as canals or storage features such as ponds and reservoirs.

There are no large ponds or other notable artificial sources near the site.

6.12 Flooding from Artificial Sources Risk Assessment

Appendix B includes an extract of a map from the Environment Agency which confirms that the Site does not suffer from risk of flooding from reservoirs.

6.13 Summary of Flood Risk Sources to the Development

Following an assessment of flooding from all sources to the development it has been assessed that:

- With the existing sea defence standard taken into consideration and the procedures in place in case of breach or overtopping, the risk of tidal flooding has been assessed to be low during the life time of the development;
- The probability of fluvial flooding extending into the Site is considered to be low;
- The risk of flooding from pluvial sources is therefore considered to be low;
- The risk of flooding from sewers is considered to be low.
- The flood risk from groundwater on the Site is considered to be low.
- There is no risk of flooding from artificial sources to the Site.

7.0 FLOOD RISK – FROM THE DEVELOPMENT

7.1 Planning Policy

The National Planning Policy Framework (NPPF) sets out the Government's policies for planning and flood risk with the primary objective of reducing flood risk to and arising from development, now and into the future.

Technical Guidance to the NPPF describes the sources of flood risk that should be considered for development and outlines how flood risk from a development should be considered in terms of reducing surface water runoff generated by new development.

In general, site development reduces the permeability of the site, increasing the volume and rate of water to be piped off the site via an existing sewer, potentially increasing flood risk to downstream areas. Therefore, appropriate drainage arrangements are required for new developments to ensure that flood risk to others is not increased.

According to the NPPF the surface water arrangements for any development site should be such that the volumes and peak flow rates of surface water leaving a developed site are no greater than the rates prior to the proposed development, unless specific off-site arrangements are made and result in the same net effect. In addition, surface water arising from a development site should, as far as is practicable, be managed in a sustainable manner to mimic the surface water flows arising from the site prior to the proposed development, while reducing the flood risk to the site itself and elsewhere, taking climate change into account.

7.2 Proposed Outline Drainage Strategy

The existing Site is a landscaped area which does not contain any existing drainage features. The proposed development comprises the construction of a temporary building on this landscaped area. Therefore, the proposed development will increase the impermeable area of the Site. The inclusion of attenuation features and a surface water drainage network capable of managing the surface water runoff will be needed in order to ensure that flood risk to the downstream catchments is not increased for storms up to the design event.

7.3 SuDS Features

SuDS features will be implemented with due regard to CIRIA publication C697 – The SuDS Manual and the Environment Agency SuDS hierarchy, which is duplicated in Table 7-2. The selection of appropriate SuDS features has been undertaken by considering the local ground conditions and land use as required by the local planning authority.

TABLE 7-2 ENVIRONMENT AGENCY SUDS HIEARCHY

Suds Feature	Rank
Living/Green Roofs	1
Constructed Wetlands/Retention Pond	2
Detention Basins	3
Filter Strips and Swales	4
Soakaways	5
Infiltration Trenches	6
Gravelled Areas	7

Porous Paving	8
Oversized pipes	9

7.3.1 Infiltration devices

The ground conditions on the wider site are such that infiltration devices are unlikely to be appropriate due to the likely high ground water levels. Tests will be conducted on site at the earliest opportunity to verify this assumption.

7.3.2 Permeable surfacing and filter trenches, ponds and swales

The proposed development is located is an area that comprises a landscaped surface. The proposed temporary building will take up most of the space on the Site. However, sufficient space will remain for the construction of a surface attenuation feature such as a dry detention basin. The basin will be connected to the proposed building via a series of filter drains that will be installed around the building to capture runoff from the roof and direct it to the basin while keeping the runoff as shallow as possible in the ground. This will ensure that the connection to the outfall can be reached without pumping. However, the client is very concerned about the open water features on the site due to the presence of many children. Risk assessment may indicate that such features need to be protected or be underground, in which case, the detention basin will be replaced with an underground cellular storage tank.

7.3.3 Oversized pipes and cellular storage crates

Whilst they are very effective at providing large volumes storage for minimal land use, oversized pipes and cellular storage crates do not provide any water treatment benefit to the runoff. These features are therefore unlikely to be used for the proposed development unless it is found that space for the proposed dry detention basin is not available due to underground services or that the use of the basin is inappropriate for the area available.

7.4 Proposed Surface Water Discharge Rates

7.4.1 Greenfield Runoff Rate

The Greenfield rates have been calculated below to determine the discharge rates that would need to be met, should the authorities require the implementation of these parameters.

Using the ICP SuDS calculator within the Source Control module of Microdrainage software, the greenfield rate has been calculated using the following parameters (See Appendix G for calculation details):

- SAAR: 600 mm (average annual rainfall)
- Soil Type: 0.4
- Area: 0.327ha
- Region 5

This yields the following results:

- 1 year event: 0.8 l/s
- Qbar: 0.9 l/s
- 30 year event: 2.2 l/s
- 100 year event: 3.3 l/s

The area referred to above (0.327ha) is the area of the Site that comprises the proposed temporary building and an allowance of 3m around the perimeter for drained hardstanding areas.

7.4.2 Proposed discharge rate

The 1 year and Qbar greenfield rates are too low to be achieved with modern flow control devices without excessive risk of flooding through blockages. Therefore, the proposed surface water drainage network for the Site will therefore be limited to 2 l/s in line with the smallest advisable flow control device rate. This will marginally exceed the 1 year and Qbar event flow rates but provide betterment compared to the 30 and 100 year greenfield events.

This limits will ensure that the proposed development discharge rate does not exceed the existing downstream network capacity and therefore will not increase the risk of flooding to downstream catchments. The use of filter drains and a dry detention basin will further reduce the discharge by providing an element of runoff delay and volume reduction through evaporation and minor infiltration.

7.5 Attenuation Storage

In order to define a volume of attenuation for the proposed Site, discussions with the Local Water Authority and the Local Planning Authority will be required to assess the design storm that will be imposed on the development. For standard developments, the design storm is defined by the lifespan of the proposed development. In the case of this development, the proposed building will be constructed to last no more than 3 years.

Therefore, the table below has been used to define the volume of attenuation that will be required for various design storms based on a maximum discharge rate of 2 l/s. This data is based on FEH rainfall and the use of Microdrainage Source Control software.

TABLE 7-3 ATTENUATION VOLUMES FOR DESIGN STORMS

Design Storm (years)	Required volume of storage (m^3)
2	43-68
10	84-114
30	118-155
100	164-218
100 + 40% climate change	252-325

It is anticipated that, given the temporary nature of the proposed building, the design storm is unlikely to be larger than the 10 year event. However, consultation with the relevant authorities will be required to ensure this is acceptable.

To adequately mobilise the attenuation storage mentioned above, the surface water drainage network will include a flow control device at the downstream end of the attenuation device. These will limit the forward flow of surface water within the network, hence maximising the use of the attenuation at source and reducing the flowrate off site.

7.6 Surface Water Outfall

The proposed surface water network will be designed to outfall to the nearby private drains. A survey of the nearby drains will be conducted to identify a suitable point of connection which is likely to be to the north west of the Site. It is expected that the connection will be made in a manner to allow a gravity connection and therefore avoid the need for pumping. Existing ground levels shown on the topographical survey support this assessment and ensure that an outfall to the north west of the site will facilitate a connection to existing drainage even if this is shallow.

7.7 Exceedance Flow Paths Design

The proposed development will not change the location and level of the existing ground level significantly and therefore will not alter the existing regime of exceedance flow path. However, careful consideration will be given to the level and location of the filter drains that will serve the proposed building in a way to ensure that they also operate in a manner to capture exceedance flows where possible.

The proposed drainage features will be constructed in a manner to provide a form of cut off drain to the flow generated from the building footprint and direct as much of the flow back into the drainage network as possible. This will be assessed at detailed design stage to ensure that existing buildings, especially to the west of the Site are not adversely affected.

7.8 Surface Water Treatment – Quality of Runoff

The proposed development will result in the construction of a temporary building that include primarily roof runoff, with a small area of hardstanding in the form of a footpath around the building. Therefore, the runoff from these areas will not include significant forms of pollution. Nevertheless, filter drains will be installed to capture runoff from the drained areas and will offer the first form of treatment to the flow. The filter drains will deliver runoff to a dry detention basin that will offer the second form of treatment prior to discharge to the watercourse.

From the above review of SuDS features that can be practically implemented into the design, the following mitigation indices have been attributed to each SuDS feature which is to be integrated in the Proposed Development, as shown in Table 7-4 below (extract reproduced from Table 26.3 in the SuDS Manual):

TABLE 7-4 SUDS MITIGATION INDICES TO BE IMPLEMENTED AT THE PROPOSED DEVELOPMENT FOR DISCHARGES TO SURFACE WATER SEWERS

Types of SuDS Component	Total Suspended Solids	Metals	Hydrocarbons
Filter Drains	0.4	0.4	0.4
Detention Basin	0.5	0.5	0.6

Using Table 26.2 in the SuDS Manual, the Table 7-5 can be constructed to show the expected pollution hazard indices for each source of surface water runoff proposed:

TABLE 7-5 POLLUTION HAZARD INDICES FOR EACH LAND USE

Land Use	Total Suspended Solids	Metals	Hydrocarbons
Footpath	0.5	0.4	0.4
Roof	0.3	0.2	0.05

Overall, the above is considered acceptable as the mitigation indices shown in **Table 7.**4 are greater than or equal to the pollution indices shown in **Table 7.5**.

7.9 Surface Water Drainage Adoption and Maintenance

Attenuation will be provided in the form of filter drains and a dry detention basin and will be situated on private land, serving a single curtilage; therefore, it is likely to be maintained by the Client or by an appointed management company. It is not anticipated that any of the surface water drainage infrastructure on the Site will be offered for adoption.

The maintenance of the private infrastructure will be provided in line with the guidance offered within the SuDS Manual and, in particular, will include the following:

Table 7-6: Maintenance Requirements for filter drains (Extract from CIRIA C753)

TABLE 16.1 Operation and maintenance requirements for filter drains

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Remove litter (including leaf litter) and debris from filter drain surface, access chambers and pre-treatment devices	Monthly (or as required)
	Inspect filter drain surface, inlet/outlet pipework and control systems for blockages, clogging, standing water and structural damage	Monthly
	Inspect pre-treatment systems, inlets and perforated pipework for silt accumulation, and establish appropriate silt removal frequencies	Six monthly
	Remove sediment from pre-treatment devices	Six monthly, or as required
Occasional maintenance	Remove or control tree roots where they are encroaching the sides of the filter drain, using recommended methods (eg NJUG, 2007 or BS 3998:2010)	As required
	At locations with high pollution loads, remove surface geotextile and replace, and wash or replace overlying filter medium	Five yearly, or as required
	Clear perforated pipework of blockages	As required

Table 7-7: Maintenance Requirements for detention basins (Extract from CIRIA C753)

TABLE 22.1 Operation and maintenance requirements for detention basins

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Remove litter and debris	Monthly
	Cut grass – for spillways and access routes	Monthly (during growing season), or as required
	Cut grass – meadow grass in and around basin	Half yearly (spring – before nesting season, and autumn)
	Manage other vegetation and remove nuisance plants	Monthly (at start, then as required)
	Inspect inlets, outlets and overflows for blockages, and clear if required.	Monthly
	Inspect banksides, structures, pipework etc for evidence of physical damage	Monthly
	Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies.	Monthly (for first year), then annually or as required
	Check any penstocks and other mechanical devices	Annually
	Tidy all dead growth before start of growing season	Annually
	Remove sediment from inlets, outlet and forebay	Annually (or as required)
	Manage wetland plants in outlet pool – where provided	Annually (as set out in Chapter 23)
Occasional maintenance	Reseed areas of poor vegetation growth	As required
	Prune and trim any trees and remove cuttings	Every 2 years, or as required
	Remove sediment from inlets, outlets, forebay and main basin when required	Every 5 years, or as required (likely to be minimal requirements where effective upstream source control is provided)
Remedial actions	Repair erosion or other damage by reseeding or re-turfing	As required
	Realignment of rip-rap	As required
	Repair/rehabilitation of inlets, outlets and overflows	As required
	Relevel uneven surfaces and reinstate design levels	As required

8.0 CONCLUSION

A FRA has been completed in accordance with the NPPF through achieving the objectives set out in Section 2.3. A summary of the main outcomes of the FRA and DS in relation to the objectives are summarised below.

8.1 Planning Policy

The proposed development has a vulnerability classification of 'less vulnerable' and is situated within the Environment Agency's Flood Zone 3a. According to the NPPF, less vulnerable developments are permitted in Flood Zone 3a without the application of the Exception Test.

8.2 Flood Risk – To the Development

Following an assessment of flooding from all sources to the development it has been assessed that:

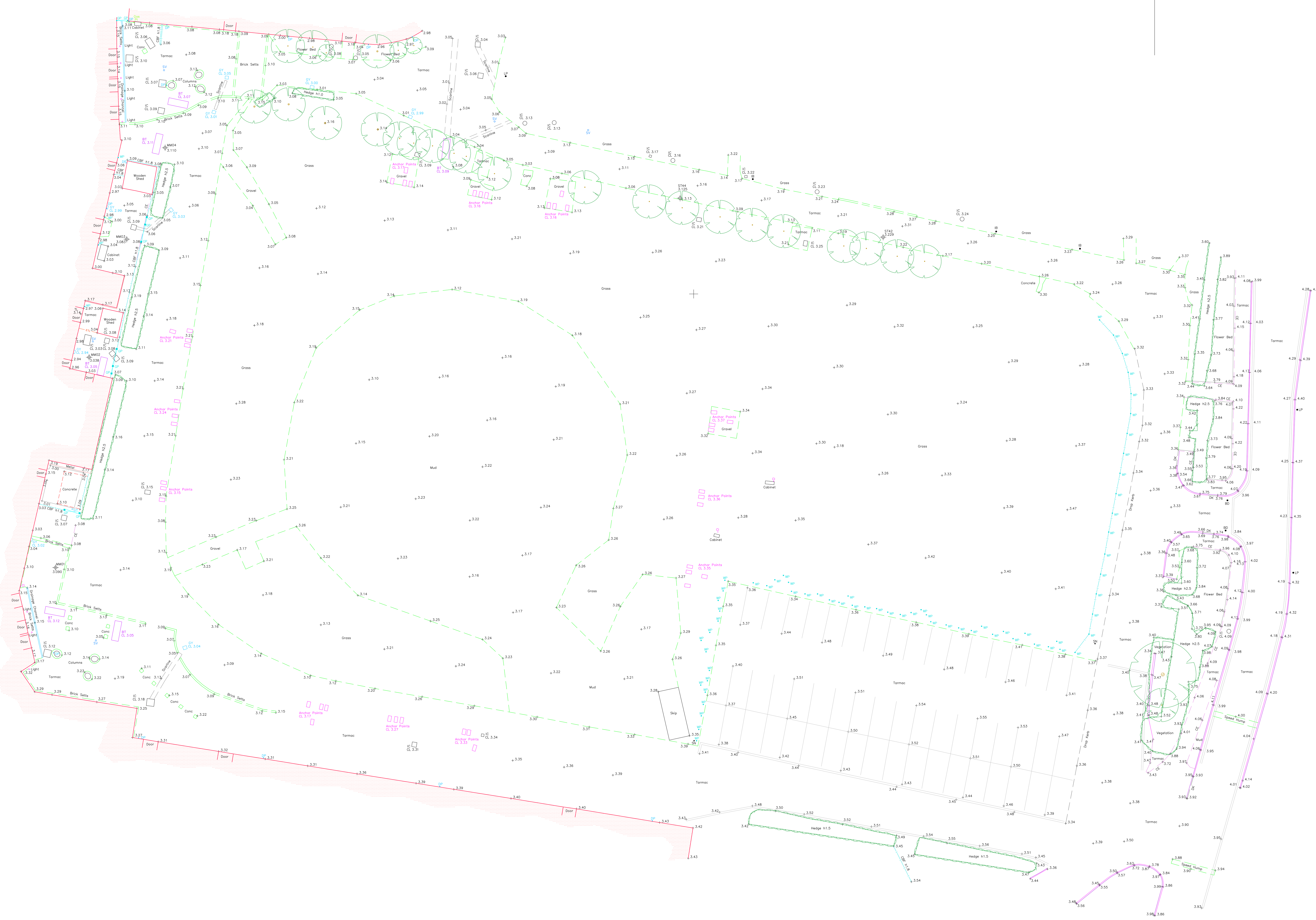
- With the existing sea defence standard taken into consideration and the procedures in place in case of breach or overtopping, the risk of tidal flooding has been assessed to be low during the life time of the development;
- The probability of fluvial flooding extending into the Site is considered to be low;
- The risk of flooding from pluvial sources is therefore considered to be low;
- The risk of flooding from sewers is considered to be low.
- The flood risk from groundwater on the Site is considered to be low.
- There is no risk of flooding from artificial sources to the Site.

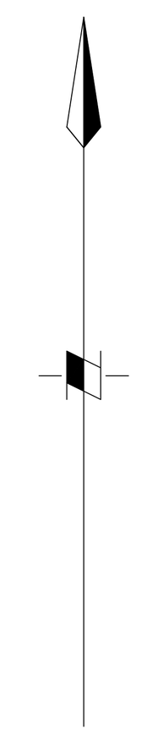
8.3 Flood Risk – From the Development

Following an assessment of flooding from the development the following conclusions can be drawn:

- The proposed development will result in an increase in impermeable area;
- Surface water runoff from the proposed development will be discharged to the nearest private drain in line with the Discharge Hierarchy within Building Regulations Part H, as it will not be practical to discharge runoff to ground or to a watercourse;
- A new surface water drainage network will be required, which will incorporate Sustainable Drainage Systems to restrict the peak discharge rate to 2 l/s, approximate equal to the 30 year event greenfield rate and matching the smallest practical flow controlled rate achievable without undue risk of blockages. The design rainfall event will be agreed with the Local Water Authority and the Local Planning Authority but is anticipated to be no more than the 10 year event;
- Proposed attenuation will likely include filter drains and a dry detention basin located within the Site near the proposed building.

1.0 Appendix A – Topographical Survey





LEVEL INFORMATION

Heights in Metres

Datum Derived From: GPS Derived

O.S.B.M. Location: N/A

Value: N/A

Active Station Locations: Leica Smartnet

Conversions Used: OSTN02;_OSGM02

COORDINATE INFORMATION

Values in Metres

All Coordinates are: ARBITRARY BASED ON NATIONAL GRID

Scale Factor: 1.000000

SURVEY STATION SCHEDULE

STN	TYPE	EASTINGS	NORTHINGS	LEVEL
ST42	PKN	557322.732	367406.812	3.229
ST44	PKN	557298.373	367411.494	3.125
MM01	PKN	557223.446	367367.172	3.090
MM02	PKN	557227.476	367392.404	3.038
MM03	PKN	557231.988	367406.565	3.083
MM04	PKN	557236.589	367417.542	3.110

ABBREVIATIONS

General

(A)	Approximate	IC	Inspection Cover
AIF	Angle Iron Fence	IL	Invert Level
(AR)	Assumed Route	IRF	Iron Rail Fence
Avg	Average	IWF	Inter Woven Fence
BD	Bollard	KO	Kerb Outlet
Bin	Litter Bin	Ldr	Ladder
Bld	Building	LP	Lamp Post
BLW	Block Wall	MH	Manhole
BS	Bush	MHR	Metal Hand Rail
BT	British Telecom Inspection Chamber	MK	Marker
BW	Brick Wall	MP	Metal Post
BWF	Barbed Wire Fence	MPRF	Metal Post & Rail Fence
Cab	Cabinet	o/h	Overhead
CB	Crash Barrier	o/l	Outline
CBF	Close Boarded Fence	OSBM	Ordnance Survey Bench Mark
CDC	Concrete Drainage Channel	PalF	Pallisade Fence
CE	Concrete Edging	Pav	Paviors
ChP	Chestnut Paling	PI	Pipe Into Ground
CI	Cable Into Ground	Plt	Pavement Light
CIF	Corrugated Iron Fence	(R)	Records
CL	Cover Level	RE	Rodding Eye
CLF	Chain Link Fence	RS	Road Sign
CM	Cable Marker	RSJ	Rolled Steel Joist
Col	Column	RW	Retaining Wall
Conc	Concrete	SD	Slot Drain
CP	Concrete Post	SE	Stone Edging
CPS	Concrete Paving Slabs	SecF	Security Fence
CT	Cable TV Inspection Chamber	Shb	Shrubs
CW	Concrete Wall	SL	Soffit Level
d	Depth	Slt	Spotlight
Dil	Dilapidated	SN	Sign
DK	Drop Kerb	SV	Stop Valve
DP	Rainwater Down Pipe	SVMK	Stop Valve Marker
DSW	Dry Stone Wall	SW	Stone Wall
Ea	Earth	SWIC	Storm Water Inspection Chamber
EIC	Electricity Inspection Chamber	SY	Stay
EM	Electricity Meter	Tar	Tarmac
EP	Electricity Pole	ThL	Threshold Level
ER	Earth Rod	TL	Traffic Light
ETL	Electricity Transmission Lines	TMIC	Traffic Management IC
F	Fence	TP	Telegraph Pole
FH	Fire Hydrant	TPS	Tactile Paving Slabs
FHMK	Fire Hydrant Marker	TTL	Telephone Transmission Line
FL	Floor Level	u/g	Underground
Flb	Flowerbed	UTL	Unable To Lift
Flt	Floodlight	Veg	Vegetation
FP	Footpath	VP	Vent Pipe
FWIC	Foul Water Inspection Chamber	VT	Vent
GM	Gas Meter	W	Wall
GMK	Gas Marker	WE	Wood Edging
GP	Gate Post	WL	Water Level
Gr	Grass	WM	Water Meter
GV	Gas Valve	WMF	Wire Mesh Fence
Gvl	Gravel	WMK	Water Meter Marker
GY	Gully	WO	Wash Out
h	Height	WP	Wooden Post
Hc	Hardcore	WPR	Wooden Post & Rail Fence
IB	Illuminated Bollard		

Station Abreviations

HN	Hilti Nail	PKN	Parker Kalon Nail
PGM	Permanent Ground Marker	WP	Wooden Peg

NOTES

SCALE

Information has been gathered for the quoted scale.
Any enlargement should be verified on site.

DRAINAGE

Pipe sizes and connections are determined from surface level inspection and service records where available.

UNDERGROUND SERVICES

Any underground services shown on this survey are from information on service enquiries and tracing with Electrolocation equipment. Some underground services may be undetectable, e.g. non-conductive pipes or cables and therefore NOT SHOWN

CONTOURS

Any contours depicted on this drawing have been interpolated from surveyed points, levels and features.
The contour line positions have been generated by ground modelling software and are INDICATIVE only.

SHEET DIAGRAM

Rev.	Date	Amendments

THE SURVEY ASSOCIATION

LEWIS BROWN
Chartered Land Surveyors

RICS

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Chelston Business Park
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Tel. 01823 667200
Fax. 01823 663266

www.lewisbrown.co.uk
Email. survey@lewisbrown.co.uk

Lewis Brown Limited Registered in England No. 4193534

CLIENT:

INSPIRED PARTNERSHIP LTD.
ASH HOUSE
COOK WAY
TAUNTON, SOMERSET
TA2 6BJ

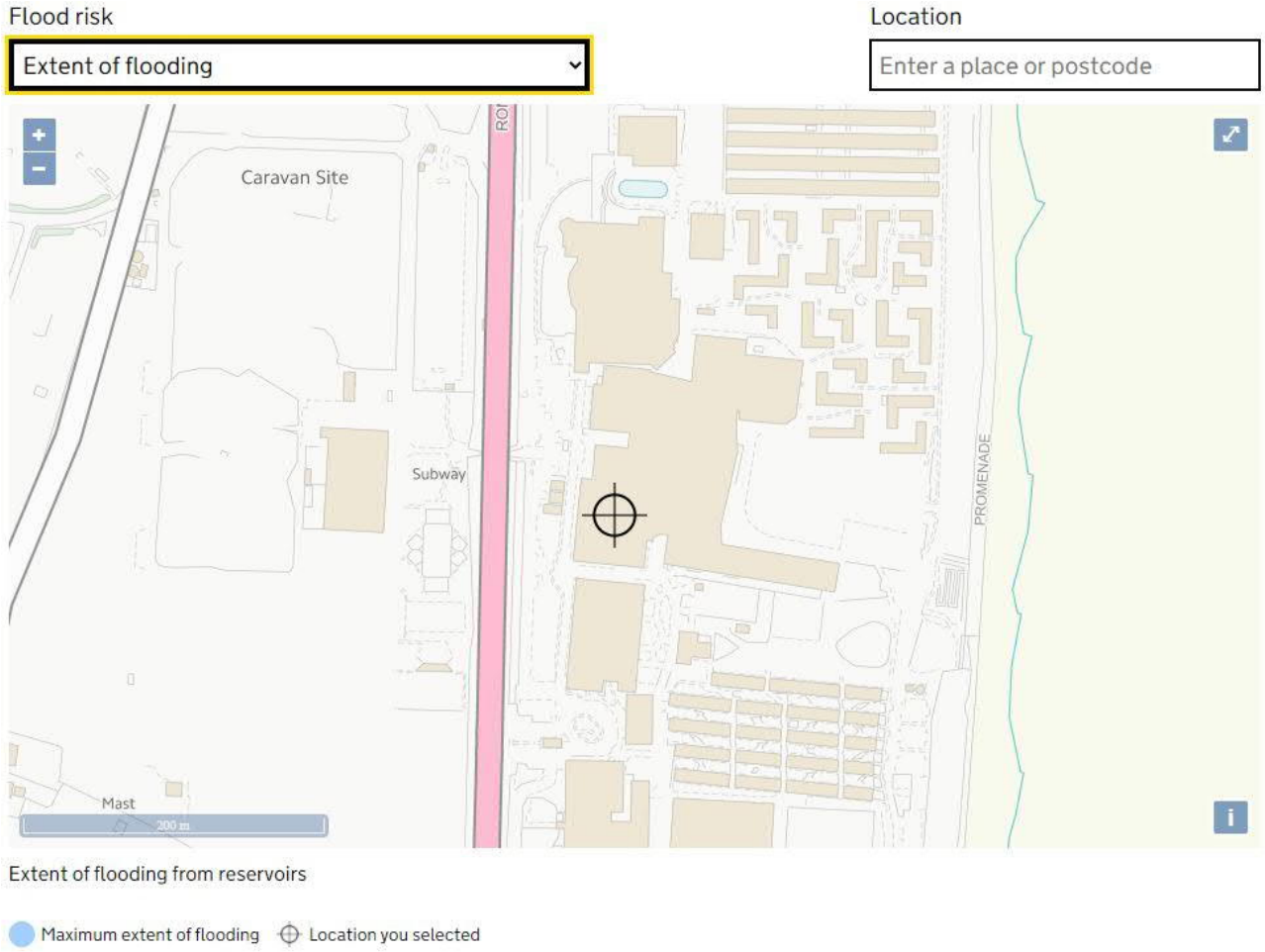
TITLE:

BUTLIN'S
SKEGNESS
LINCONSHIRE

TOPOGRAPHICAL SURVEY

Drawing Number:		Revision:
B20296_2D_SX		
Scale:	Sheet:	Survey Date:
1:200	A0 1 of 1	November 2020
Drawn:	Checked:	Project Number:
MM	RDJB	B20296

2.0 Appendix B – Environment Agency Maps


Flood risk
Extent of flooding
Location
Enter a place or postcode
Caravan Site
Subway
PROMENADE
Mast
200 m
Extent of flooding from reservoirs
Maximum extent of flooding
Location you selected

Main River Map: Rationalising Main River Network

11/15/2020, 12:09:01 PM

1:10,000

0 0.07 0.15 0.3 mi

0 0.13 0.25 0.5 km

Environment Agency

Flood map for planning

Your reference	Location (easting/northing)	Created
<Unspecified>	**557281/367383**	**22 Nov 2020 8:47**

Your selected location is in flood zone 3, an area with a high probability of flooding.

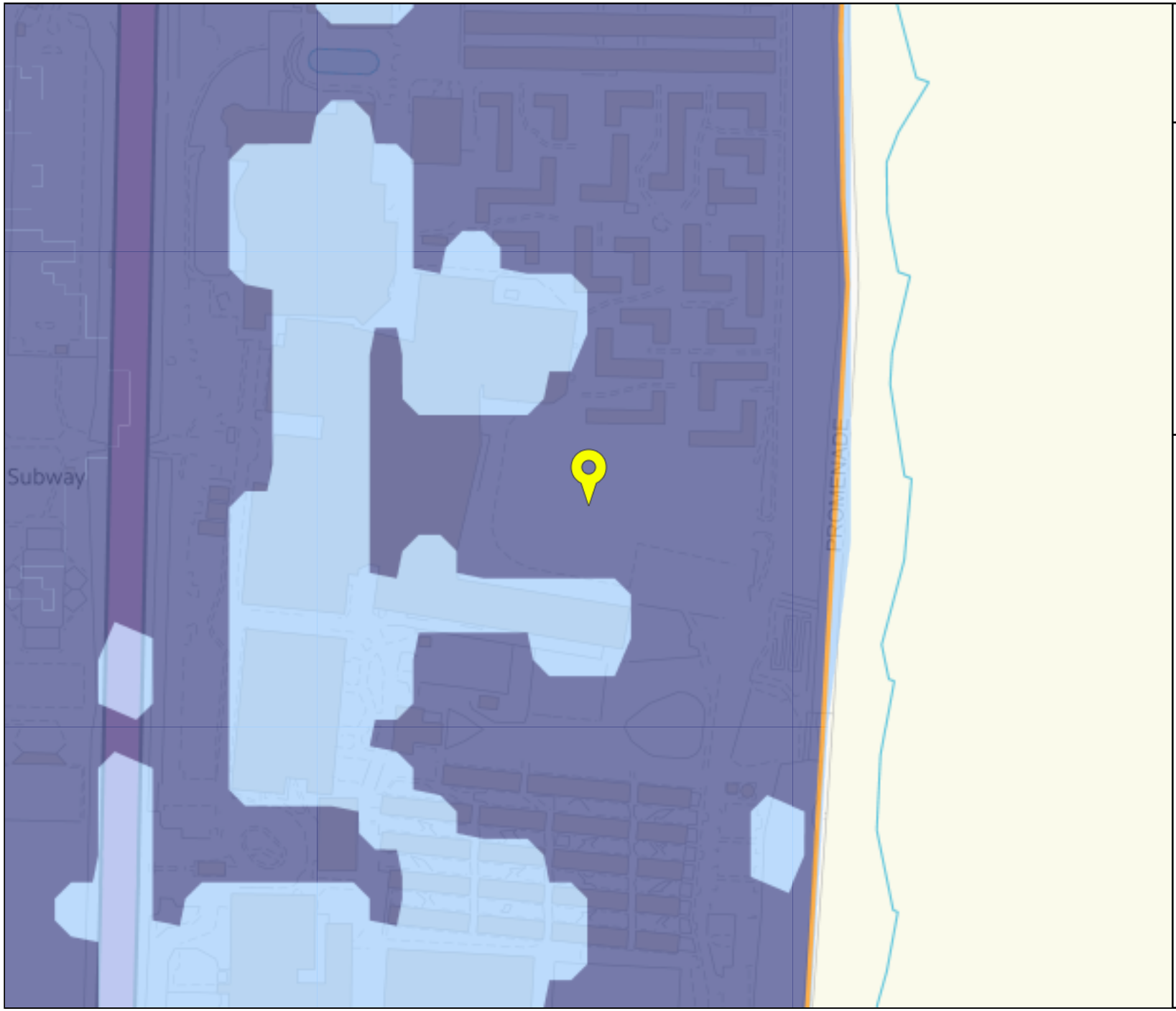
This means:

- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see www.gov.uk/guidance/flood-risk-assessment-standing-advice)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.



Environment Agency

Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
557281/367383

Scale
1:2500

Created
22 Nov 2020 8:47

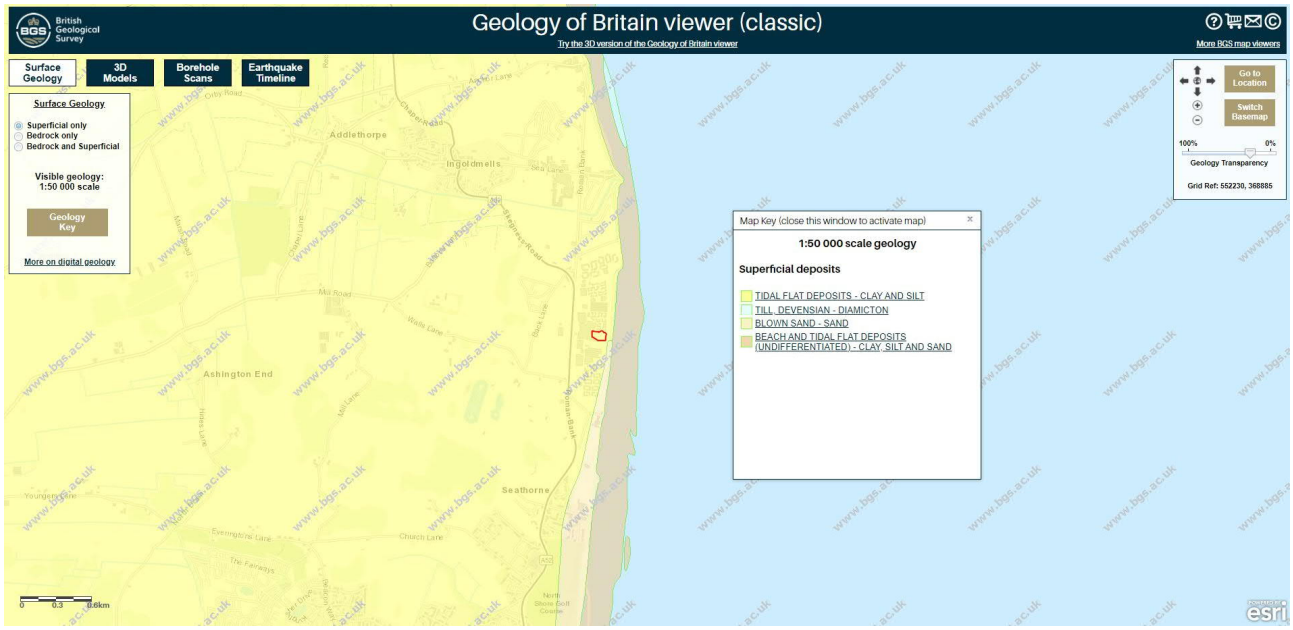
- Selected point
- Flood zone 3
- Flood zone 3: areas benefitting from flood defences
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Flood storage area

0 20 40 60m

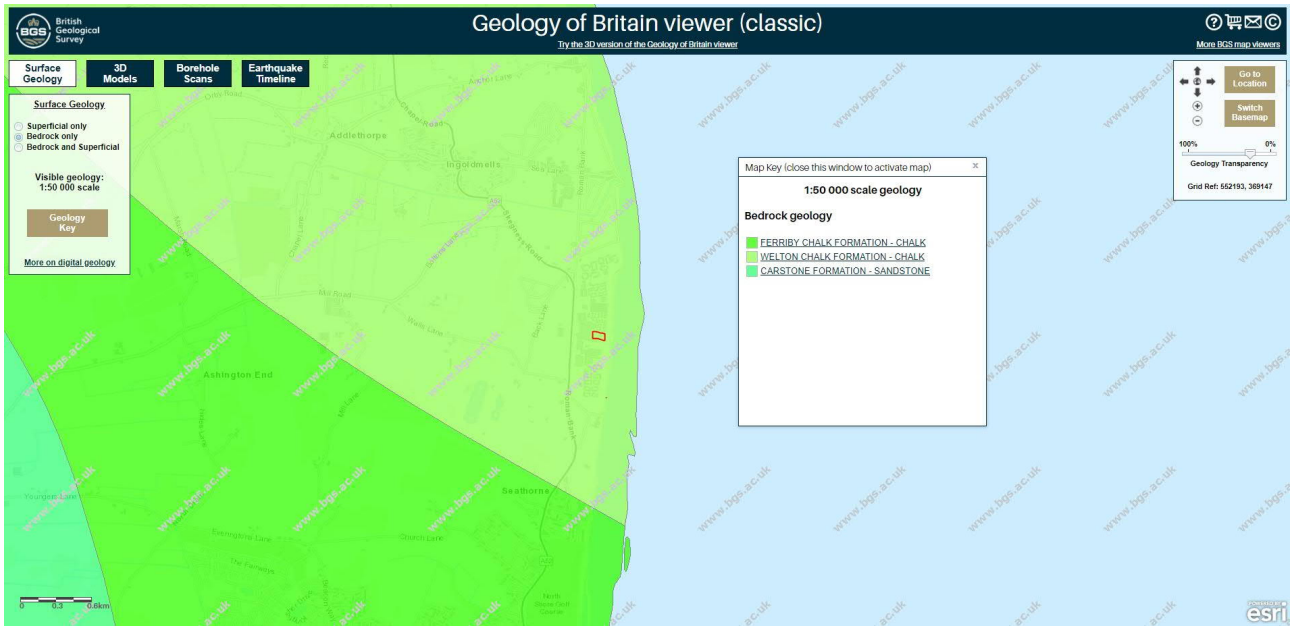
3.0 Appendix C – Not used

4.0 Appendix D – Geology Map Records

Superficial Deposits:



Bedrock Deposits:



5.0 Appendix E – Not used

6.0 Appendix F – Drawings

PROJECT NOTES:

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SAFETY, HEALTH, AND ENVIRONMENT INFORMATION

Based on the use of experienced and competent contractors working to an approved method statement unusual residual hazards / risks are identified as per the following symbols:

- We use this symbol to give warning of significant hazards or information which is unusual
- We use this symbol to encourage a particular action
- We use this symbol when we want you to avoid something or refrain from a particular action
- We use this symbol when we want to convey some relevant CDM information

The design team have highlighted unusual and significant risks only that may not be obvious to a competent contractor. They are to assist with risk reduction only and are not necessarily comprehensive.

PROJECT NOTES:

Trackway/ Foundation design to be confirmed.

HERAS FENCING

HERAS BRACING

REV	DATE	DESCRIPTION	BY	CHKD
D	24/11/20	UPDATED	MS	CL
C	13/11/20	UPDATED	MS	CL
B	03/11/20	UPDATED	MS	CL
A	26/10/20	FIRST ISSUE	MS	CL

SCALE

1:1250 @ A1; 1:2500 @ A3

0 25 50 75 100m

N

DRAWING STATUS

DRAFT ONLY

CLIENT

BOURNE LEISURE

PROJECT

2015 BUTLINS SEASON 2021

DRAWING TITLE

SITE PLAN

TEMPORARY VENUE - SKEGNESS

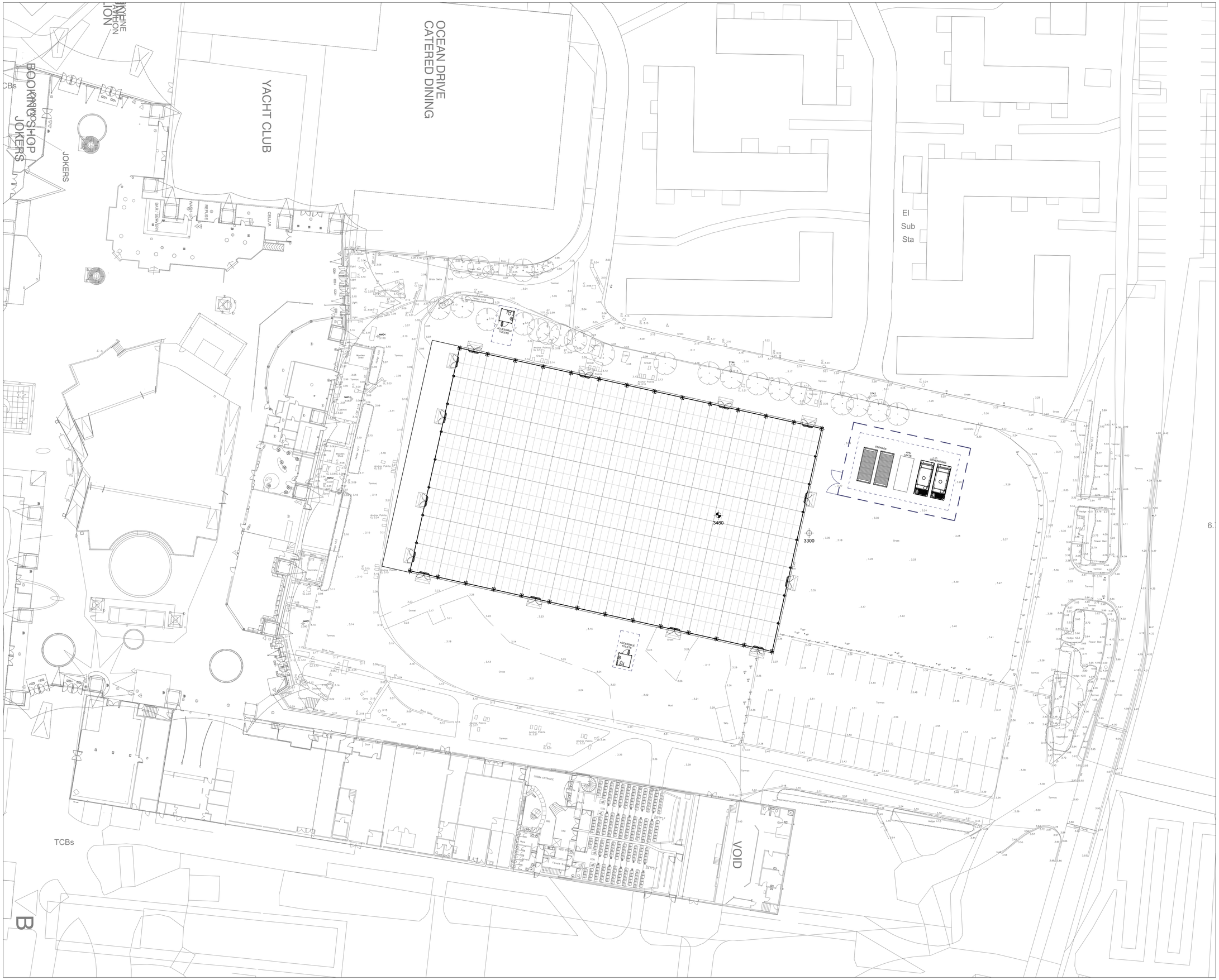
SCALE @ A1	DRAWN	DATE	CHECKED	DATE
1:1250	MS	24/11/20	CL	24/11/20

WOO Architects

Unit 5, The Piano Works, 113 - 117 Farringdon Road, London, EC1R 3BX
studio: +44 (0)207 965 7566 www.wilsonowensowens.com

DRAWING NO. 2015-WOO-SKG-00-DR-A-001

REVISION D



This drawing is only to be used for the purpose identified in the status entry on this drawing. No responsibility is accepted for any other use or by any party not expressly identified in the issue sheet.
This drawing is not to be used for construction unless expressly noted.
No responsibility is accepted for errors and/ or omissions arising from the adoption of this drawn information by others.

Report any dimensional discrepancies, errors, or omissions prior to commencing on site.
All dimensions to be checked on site.
Do not scale dimensions off drawings.

PROJECT NOTES:

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SAFETY, HEALTH, AND ENVIRONMENT INFORMATION

Based on the use of experienced and competent contractors working to an approved method statement unusual residual hazards / risks are identified as per the following symbols:

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The design team have highlighted unusual and significant risks only that may not be obvious to a competent contractor. They are to assist with risk reduction only and are not necessarily comprehensive.

PROJECT NOTES:

Trackway/ Foundation design to be confirmed.

HERAS FENCING

HERAS BRACING

REV	DATE	DESCRIPTION	BY	CHKD
D	24/11/20	UPDATED	MS	CL
C	13/11/20	UPDATED	MS	CL
B	03/11/20	UPDATED	MS	CL
A	26/10/20	FIRST ISSUE	MS	CL

SCALE
1:300 @ A1; 1:600 @ A3
0 6 12 18 24m

N

DRAWING STATUS
DRAFT ONLY

CLIENT
BOURNE LEISURE

PROJECT
2015 BUTLINS SEASON 2021

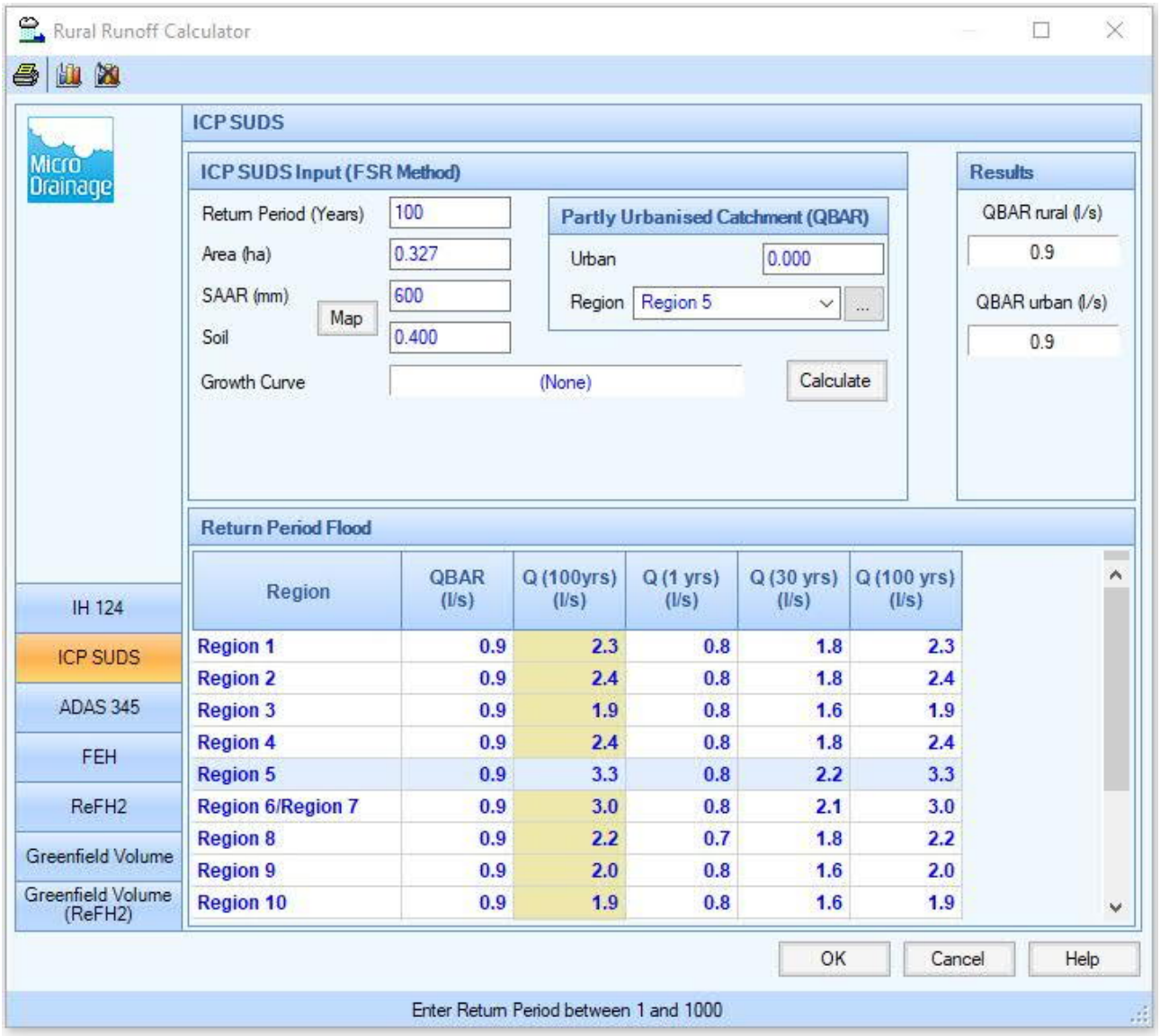
DRAWING TITLE
BLOCK PLAN
TEMPORARY VENUE - SKEGNESS

SCALE @ A1	DRAWN	DATE	CHECKED	DATE
1:300	MS	24/11/20	CL	24/11/20

WOO Architects
Unit 5, The Piano Works, 113 - 117 Farringdon Road, London, EC1R 3BX
studio: +44 (0)207 965 7566 www.wilsonowensowens.com

DRAWING NO. 2015-WOO-SKG-00-DR-A-100
REVISION D

7.0 Appendix G – Flood Evacuation Plan and Calculations



Region	QBAR (l/s)	Q (100yrs) (l/s)	Q (1 yrs) (l/s)	Q (30 yrs) (l/s)	Q (100 yrs) (l/s)
Region 1	0.9	2.3	0.8	1.8	2.3
Region 2	0.9	2.4	0.8	1.8	2.4
Region 3	0.9	1.9	0.8	1.6	1.9
Region 4	0.9	2.4	0.8	1.8	2.4
Region 5	0.9	3.3	0.8	2.2	3.3
Region 6/Region 7	0.9	3.0	0.8	2.1	3.0
Region 8	0.9	2.2	0.7	1.8	2.2
Region 9	0.9	2.0	0.8	1.6	2.0
Region 10	0.9	1.9	0.8	1.6	1.9

Person responsible for activating evacuation plan	Alex Saul / Allan Carr	Emergency contact number	01754 614455

FLOOD EVACUATION PLAN

Site name	Butlins Skegness	Address	Roman Bank, Skegness, Lincolnshire, PE25 1NJ
		Telephone	01754 762311
Floodline quickdial number	0345 988 1188	Which flood warnings are you registered to receive?	Environment Agency direct flood warning
Local flood warning trigger *i.e. when water reaches bottom of the bridge, sound siren*	Environment Agency text message to Area H&S Manager and Resort Director		
Evacuation Assembly Point(s)	Caravan Village – Crazy Horse		

Copies of Flood Evacuation Plan to be sent to :
- General Manager
- Regional Health & Safety Manager or Resort Health & Safety Technician
- Resort Heads of Department
- …..

CONTENTS

1 Actions to be taken during a flood

A. When to activate your flood evacuation plan

The following information should be put into action when your trigger is reached. This trigger would be a flood warning from the Environment Agency (EA), Natural Resources Wales (NRW), or Scottish Environmental Protection Agency (SEPA) or the trigger you have set yourself for your site. ***Note that the actions listed below are examples. If these are not appropriate you must tailor the actions to suit your site and add in your own in the blank rows.***

Identify the actions you will take before activating your flood evacuation plan

	Action	Trigger	Section	Action completed
1	Observe conditions on site to verify flood warning / trigger.	Flood Watch received. River overtopping/ exceptionally high tide	Site map	
2	Verify weather forecast and check expected river level and rainfall conditions.			
3	If registered for flood warnings call Floodline 0845 988 1188 and use your quickdial number to listen to additional information.			
4	Look at your site map to determine which areas are likely to be affected and when.		Site map	
	ACTIVATE FLOOD EVACUATION PLAN			

1 Actions to be taken during a flood B. Evacuate staff and guests

Identify the actions you will take to safely evacuate staff and guests during a flood. The ones below are examples, so please delete and add your own in as required.

	Action	Trigger	Section	Action completed
1	Contact and gather together all available staff/volunteers.		3B	
2	Assess health and safety risks. **At no time should staff carry out anything that could put their life at risk.**			
3	Allocate tasks/responsibilities to staff/volunteers. Issue high visibility vests/jackets and any equipment required by staff/volunteers.		3B Site map	
4	Alert guests (verbally/siren/loudhailer). If you think there is enough time, tell guests to remove their touring caravans and tents from flood risk areas. **Assess each situation to check that it is safe to proceed and that there is no risk to life.**		1C Site map	
5	Obtain list of guests and evacuate site in order of priority (as you have listed in section 1C *'Locations at risk and flood actions'*).	Flood Warning received. River rising and overtopping bank.	1C	
6	Contact emergency services, as appropriate. If pollution is also taking place, contact the Pollution Hotline		3A	
7	Staff/volunteers to report back to confirm evacuation complete and that guests are safe and at evacuation assembly point.		3B	
8	Check welfare at evacuation assembly point. Carry out roll call.			
9	Determine if any guests are missing. Be able to supply emergency services with visitor list if requested.			
10	Consider contacting local authority regarding moving guests to a rest centre if necessary.		3A	
11	Commence recovery actions when you are sure no further flooding is expected.	All Clear received. River levels have fallen, no further rain expected.	2A and 2B	

1 Actions to be taken during a flood

C. Locations at risk and flood actions

Look at the flood risk map of your site. Divide the flood risk area of your site into different uses, such as camping area, tourers and statics, site office and shower block etc. Identify the flood actions for each use. Consider the risk to guests on site and to where they will be evacuated. Indicate on the map where an Evacuation Assembly Point will be.

Priority	Use	Action by site staff / volunteers	Equipment required	Time required	Risk to life	Evacuation action
1	Accommodation Teams (Pairs)	Evacuate accommodation in order of priority. Empty accommodation is to have evacuation notice displayed.	Torches & Hi-vis vests			Advise guests to make their way to Crazy Horse (Evacuation Assembly Point).
2	Shops Team	Ensure shops are evacuated, doors closed and shutters dropped.				Advise guests to make their way to Crazy Horse (Evacuation Assembly Point).
3	Tech Services	Locate and evacuate contractors from site. Sandbag building doors and manhole covers	200 Sandbags, Rock Salt used if necessary			
4	Tech Services	Isolate Electricity and Gas from the mains supply to site				
5	Caravan Village	Evacuate site when instructed to by evacuation coordinator.				
6	Resort Safety	Open all exit gates. Ensure Crazy Horse is unlocked. Close flood barrier between main site and caravan village. Direct emergency services and traffic. Final Sweep of accommodation villages	Torches, Megaphones & Hi-vis vests			
7	Bars & Ents Team	Ensure all venues are evacuated, doors and shutters closed. Assist in the movement of guests.				

1 Actions to be taken during a flood D. Key locations

Service cut-off	Description of location
Electricity	Main Intake – Bankside, Caravan Village, Roman Bank
Gas	1.North End of the Funfair next to the perimeter fence – Feeds Starfish Quay, Resort Safety & Royal Arthur. 2.By Main Gate next to perimeter fence – Feeds Jaks, Spa, Front Room, Newsbreak, Green Baize, Coral Beach, FEC, Guest Services, Ents, Rock & Sole, BK, Team Accom, Centre Stage, Spar, Bull Eye Bay, Cinema, The Deck, Splash, Beachcomber and Firehouse. 3.Skyline, main resort next to caravan village tunnel – Feeds Hotshots. 4.Next to tunnel caravan side – Feeds Crazy Horse building. 5.South, opposite Tech Services car park – Feeds Admin building, Tech Services building, Accom Stores, Nursery, Team Diner building, Gold Reception, The Keys and Lakeside 6.Back of Splash on Resorts main road, right hand side of tunnel – Feeds Splash
Water	1.Northern bore hole and tank (opposite Mermaid Court, The Keys) 2.Beachcomber plant room bore hole and pump. 3.South tank pump house (opposite Pelican Court, Starfish). 4.Roman Village tanks (near Sandhills gate)

1 Actions to be taken during a flood E. Protective actions/Hazardous materials

Hazardous materials on site which should be considered during a flood - *Answer the following if applicable.*

Materials	Description of location	How to protect from a flood (i.e. move, cover, tie down)
Chemicals (including cleaning products)	Every department uses some sort of chemical product. All stored off the floor in dedicated lockers.	
Oil based products (gasoline, oil, cooking oil etc.)	Bunded diesel tank in Tech Services yard.	
Gas cylinders	All gas cylinders apart from those in dedicated fenced compounds are secured to wall with chains.	

1 Actions to be taken during a flood

F. Protective actions/Important items

Identify stock, equipment and possessions that may need special protective measures, and describe the actions you will take to prevent their damage in the event of a flood. We have suggested items and ways to protect them, but make sure you follow through on your plans.

Items to consider

Static caravans	Touring caravans	Chairs / stools	Paper files
Machinery	Food	Tables / heavy furniture	Databases
Vehicles	Fittings	Soft furnishings	Computers
Electrical items	Movable goods	Staff files	Computer files

Ways to protect items

- Move to safer location
- Buy flood protection products
- Raise above ground level
- Make a copy and store in safe location
- Buy a new flood resistant item

Item	Protective action	New location (if applicable)	Done
Resort Vehicles	Moved	Higher ground – Roman Bank or Caravan Village	
Computer Data	Back up data tapes to be removed off site.		

1 Actions to be taken during a flood G. Resources required

Note basic building materials required. If materials are not needed, write in 'not appropriate'.

Materials	Used for	Items to protect / where to use	Storage Location	Done
Sand and sandbags (unfilled), shovel, plastic sheeting	Creating flood barriers	Doorways to offices and Skyline. Weighing down manhole covers to prevent pollution.	Gardeners Yard and around site	
Tools - hammer, nails, saw	Boarding up doors, windows and openings, creating shelves	not appropriate		
Wood - plywood, blocks of wood	Boarding up doors, windows and openings, creating shelves	not appropriate		
Sturdy plastic sheeting	Sandbag barriers, pulling up around furniture and appliances	not appropriate		
Plastic bags	Putting around legs of tables and chairs	not appropriate		
Pallets	Raising stored stock above flood level	Venue kitchens, Shops store rooms and Stores	Stores Yard and around site.	
Emergency power generator	Essential electrical appliances	not appropriate		
Signage, barriers, tape	Stop guests and team from entering /accessing any areas that are flooded or dangerous	Fencing off areas once they have been evacuated – villages etc. Placed at access points to dangerous/flooded areas on site when they arise.	Resort Safety and around site.	

2 Actions to be taken after a flood

A. Recovery and clean-up

The recovery and clean-up period following a flood often involves more effort than required during it. Identify the actions you will take after a flood.

	Action	Trigger	Section	Action completed
1	Verify weather forecast.	All Clear No further rain expected		
2	Contact staff/volunteers available to assist in recovery.		3B	
3	Take photographs or video flood damage to site. List the damage caused to property and belongings.			
4	Contact insurance company.			
5				
6				
7				
8				
9				
10				

2 Actions to be taken after a flood B. Suppliers and external links

Identify back-up plans for disruption of deliveries, or arrangements for short-notice cancellation with suppliers. Also include contacts for alternative accommodation for guests.

Supplier	Supplier contact and telephone	Contingency plan	Alternative delivery address

List companies / reputable contractors whose help you may need after a flood. Get contracts in place, or know who to call for assistance. If help is not needed or you plan to do the work yourself, leave this section blank.

Service	Company name	Contact	Telephone / mobile	Contract agreed
Electrical Equipment Generators	Energyst (Preferred Supplier) Power Protection Planning (PPP) Generators	Adam Aspell 24Hr Booking Line Adrian Jarratt	01902 797000 / 07702212427 08457 697450 07801 049359	
Gas Contractors	BMM Ltd PJ Plumbing (Caravans Gas) Commercial Catering Solutions (Catering Gas)	Kevin Myers Office Phil Groves Stephen Trigg	07917 685584 01642 240708 07931 451051 07703 136452 / 01775 630382	
Electricity	Western Power GH Electric (Preferred Supplier) SPEC Ben Etches (Caravans) EIS	 Gary Hewlett Sophie Olenczyn Ben Etches Jamie Coulson	0800 0568090 07810 111076 01924871558 07825 325502 01603 821035 / 07508858445	

3 Contact lists

A. Important contacts

	Company name	Contact name	Telephone (office hours)	Telephone (out of hours)
Floodline	EA/NRW/SEPA		0845 988 1188	0845 988 1188
Pollution Incident Emergency Number	EA/NRW/SEPA		0800 80 70 60	0800 80 70 60
Local Environment Agency office / Local Natural Resources Wales Office / Local SEPA office	Environment Agency		0370 850 6506	
Electricity provider	Western Power		0800 0568090	0800 6783 105
Gas provider	Gazpom Transco Emergency (Mains)		0845 2300011 0800 111999	
Water and Sewerage Company	Anglian Water	Karen Barker	0800 145145 03457 626784/ 07872041496	0800145145
Telephone Provider				
Insurance company and policy number	Royal & Sun Alliance RTT201771		01737 783600	
Local Authority	East Lindsey District Council		01507 601111	01507 601111
Local radio station	BBC Lincolnshire 94.9FM Lincs FM 102.2FM		01522 511411 01522 549900	
Travel/weather info				
Police	Lincolnshire Police		01522 532222	
Fire and Rescue Service				
Ambulance Service				
Electrician	On Site	Russ Parker	07519 244913	
Plumber	On Site	Steve Collins	07747832956	
Senior Gas Engineers	On Site	David Speed	01754 768181	

3 Contacts lists B. Staff / volunteer contact list

Staff / volunteers that can help during a flood. Jobs designated to these people could include overall coordinator of evacuation process, people allocated to staff and visitor safety (including one specific for vulnerable people). Ensure those doing manual work are physically able and reasonably fit.

By registering these volunteers on Floodline Warnings Direct, they can also receive flood warnings.

Name	Job title	Telephone / mobile	Emergency contact	Responsibility	Help agreed
Alex Saul	Resort Director		07590 051170	Evacuation Coordinator	
Allan Carr	Resort Safety Mgr	01507 490802	07834516319		
Rob Bruton	General Manager	01754 763628	07715071059		
Sophie Gregory	Accom Mgr	07803139401			
Nicola Harvey	Tech Services Mgr		01507 451245		
Russ Parker	Tech Services Mgr	07519244913			
Carole Tumber	Catering Manager	01754 898302	07979645383		
Nicky Bruton	Guest Services Mgr	01754 763628	07900955365		
Catherine Power	Shops Manager	07961104604			
Tracy Willis	Bars Manager	07725795849			
Helen Cropley	Entertainments Mgr	07763634787			
Karen O'dare	H&S Regional Mgr	07764 860935			
Tom Ward	H&S Technician	01754 820607	07881 246006		
Paul Gray	IT Support	01754 762298	07714836873		