

# Birmingham 2022 – Victoria Park Entrance

---

Flood Risk Assessment & Drainage  
Strategy



Document Ref: 5200949-ATK-B2022-VIC-RPT-C-0107

---

Date January 2022



# Notice

This document and its contents have been prepared and are intended solely as information for **Birmingham Organising Committee for the 2022 Commonwealth Games Ltd** and use in relation to a full planning application for temporary access and other supporting facilities as part of the games overlay at Victoria Park.

Atkins Limited assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

## Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
P01	First issue.	MN	PJB	CB	SR	28/01/2022
P02	Minor text updates following client review.	MN	PJB	CB	SR	01/02/2022

## Client signoff

Client	Birmingham Organising Committee for the 2022 Commonwealth Games Ltd.
Project	a full planning application for temporary access and other supporting facilities as part of the games overlay at Victoria Park.
Job number	5193052
Client signature / date	

# Contents

Chapter	Page
<b>Acronyms</b>	<b>1</b>
<b>Executive Summary</b>	<b>2</b>
<b>1. Introduction</b>	<b>3</b>
<b>2. Background Information</b>	<b>4</b>
2.1. Environment Agency	4
2.2. Warwickshire County Council	4
2.3. Severn Trent Water	4
<b>3. Site Description</b>	<b>5</b>
3.1. Location	5
3.2. Topography	5
3.3. Land Use	5
3.4. Ground Conditions	6
3.5. Water Environment	6
<b>4. Development Proposals</b>	<b>8</b>
4.1. Description	8
4.2. Sequential Test	8
<b>5. Flood Risk Assessment</b>	<b>9</b>
5.1. Flooding History	9
5.2. Identification of Flooding Sources	9
5.3. Risk Assessment	11
5.4. Flood Risk Management	12
5.5. Residual Risks	12
<b>6. Surface Water Drainage Strategy</b>	<b>14</b>
6.1. Existing Drainage Regime	14
6.2. Impact of the Proposed Overlay on the Existing Drainage Regime	14
6.3. Proposed Strategy	14
<b>7. Conclusions &amp; Recommendations</b>	<b>15</b>
7.1. Conclusions	15
7.2. Recommendations	15
<b>Glossary</b>	<b>16</b>
<b>Appendix A. Correspondence</b>	<b>18</b>
<b>Appendix B. Drawings</b>	<b>19</b>

## Acronyms

AEP	Annual Exceedance Probability
AOD	Above Ordnance Datum
EA	Environment Agency
LLFA	Lead Local Flood Authority
NPPF	National Planning Policy Framework
OC	Organising Committee
SFRA	Strategic Flood Risk Assessment
STW	Severn Trent Water
WCC	Warwickshire County Council



## Executive Summary

Atkins Ltd has been commissioned by the Birmingham Organising Committee for the 2022 Commonwealth Games to secure full planning permission for the use of Victoria Park for the Lawn Bowls event for the Games. This Flood Risk Assessment and Drainage Strategy report has been prepared to accompany the planning application. The Birmingham 2022 Commonwealth Games will be held in venues across Birmingham and the West Midlands from 28 July until 8 August 2022. The venues being used for the Games stretch from Coventry and Royal Leamington Spa in the east to Cannock Chase Forest in the north west of the region.

In order to deliver the events at each venue, there will be a requirement for a series of overlay (temporary) structures at each of the venues for the duration of the games. The overlay includes all the temporary infrastructure required to support a particular facility or venue, including but not limited to temporary seating, tents, cabins, staging, power, fencing, flooring, lighting and signage. A combination of adaptation of new/ existing venues and fully temporary venues will be used. The Organising Committee and their contractors will plan, design and deliver the overlay for all competition/training venues and non-competition venues.

The proposed description of development for the application is as follows:

*“Temporary use of an area of Royal Leamington Spa Victoria Park for the purposes of hosting the Lawn Bowls and Para Lawn Bowls event for the Birmingham 2022 Commonwealth Games; erection of temporary structures, including vehicle trackway, solar panels and security fencing to the site boundary.”*

The flood risk is considered to be low and will not adversely affect the developability nor the delivery of the Scheme.

There are considered to be no issues with surface water drainage that adversely impact upon the Scheme on the Site or its deliverability.



# 1. Introduction

Atkins has been commissioned by Birmingham Organising Committee for the 2022 Commonwealth Games Ltd. to prepare a Flood Risk Assessment and Drainage Strategy to support a full planning application for a temporary access and other supporting facilities (the “Scheme”) at Victoria Park, Leamington Spa (the “Site”) giving access to the lawn bowls games venue.

This Flood Risk Assessment and Drainage Strategy has been prepared in accordance with the National Planning Policy Framework<sup>1</sup> and associated Planning Practice Guidance<sup>2</sup>. The scope of this Assessment has been established through consultation with the Environment Agency (EA), the Lead Local Flood Authority (LLFA), Warwickshire County Council, and Severn Trent Water.

---

<sup>1</sup> National Planning Policy Framework, Department for Communities & Local Government, February 2019

<sup>2</sup> Planning Practice Guidance, Department for Communities & Local Government, March 2014

## 2. Background Information

### 2.1. Environment Agency

A pre-planning enquiry was submitted to the EA. A Product 4 data pack was received providing modelled flood levels for the Site. This information is included in full in **Appendix A**.

### 2.2. Warwickshire County Council

An enquiry was submitted to Warwickshire County Council, the LLFA. The response received is summarised below and included in full in **Appendix A**.

- Refer to the Surface Water Management Plan, Local Flood Risk Management Strategy and Strategic Flood Risk Assessment which are available on-line<sup>3</sup>.
- Consult the planning standing advice document<sup>4</sup> which outlines the requirements when completing a FRA.

### 2.3. Severn Trent Water

A Developer Enquiry was submitted to Severn Trent Water. A response is currently awaited to this enquiry.

---

<sup>3</sup> <https://www.warwickshire.gov.uk/flooding>

<sup>4</sup> <https://www.warwickshire.gov.uk/floodpreappadvice>

## 3. Site Description

### 3.1. Location

The Site is located within Victoria Park, Leamington Spa, Warwickshire. The Site is located on the southern edge of the Park, immediately north of the A452 Park Drive. It is bounded to the north and west by Victoria Park with the River Leam to the north. A residential area is located to the east.

A site location plan is shown in Figure 3-1.

**Figure 3-1 - Site location plan (Not to scale)**



### 3.2. Topography

The Site has a total area of approximately 0.8ha.

According to LiDAR data, the ground profile across the Site is uniform with a slight fall to the north and west. Ground levels fall from approximately 51.3m AOD at the eastern end of the Site to approximately 49.75m AOD in the north-western corner.

There are no significant changes in level within the Site nor any retaining structures.

### 3.3. Land Use

#### 3.3.1. Historic

Old Ordnance Survey maps dating from 1889 show that the Site and the remainder of Victoria Park as being occupied by a cricket field. The residential development to the east was also already present at this time. The land to the south of the Site was occupied by a substantial railway junction and goods yard. The cricket field became a public park, Victoria Park, in 1905 with the tennis courts and bowling greens north of the site being constructed by 1925. Buildings associated with the bowling greens to the north-east of the Site had been constructed by 1939. Over this time, the railway junction and goods yard to the south had continued to expand.

Mapping from 1952 shows the Site to be in the form it is today. The extents of the railway junction and goods yard progressively reduced over the following years until the 1980's when it reached its current layout.

### 3.3.2. Current

The Site is part of the wider Victoria Park which is grassed. Part of the perimeter footpath around the park runs through the southern section of the Site. There are a number of mature trees within the Site, primarily located along the southern boundary.

## 3.4. Ground Conditions

To date, no intrusive ground investigations have been undertaken at the S Site. The content of this section has been informed by data obtained from public domain, on-line sources.

### 3.4.1. Soils

According to Soilscales<sup>5</sup>, the soils present at the Site primarily comprise *freely draining slightly acid loamy soils*. The British Geological Survey GeoIndex<sup>6</sup> indicates that Made Ground is present within the Site. No information is available regarding its thickness or composition.

### 3.4.2. Geology

#### 3.4.2.1. Superficial Deposits

The British Geological Survey GeoIndex<sup>6</sup> shows the superficial deposits underlying the Site to be River Terrace deposits comprising sand and gravel.

#### 3.4.2.2. Bedrock

The British Geological Survey GeoIndex<sup>6</sup> shows the bedrock underlying the Site to be the Tarporley Siltstone Formation comprising of siltstone, mudstone and sandstone.

### 3.4.3. Contamination

As there is a potential for Made Ground to be present beneath the Site, it is possible that contamination may be present as the source of this material is unknown. The contamination status of the ground within the Site would need to be confirmed by further intrusive investigations and testing.

## 3.5. Water Environment

### 3.5.1. Drainage

#### 3.5.1.1. Private Drainage

There is no evidence of any private drainage systems being present within the Site. The nearest private drainage systems are associated with the bowling green pavilion and surrounding areas to the north-east which are served by private surface and foul water drainage systems.

#### 3.5.1.2. Land Drainage

There is no evidence available of any land drainage systems being present within the Site. Any land drainage systems must be protected from damage to ensure that they remain operational and effective.

---

<sup>5</sup> Soilscales, [www.landis.org.uk/soilscales](http://www.landis.org.uk/soilscales)

<sup>6</sup> GeoIndex, <https://mapapps2.bgs.ac.uk/geoindex>

#### 3.5.1.3. Public Sewerage

Sewer records supplied by Severn Trent Water, included in **Appendix A**, show that there is a 600mm diameter combined sewer running in an easterly direction along the northern boundary of the Site. This sewer outfalls into a 1950mm diameter sewer that runs from north of the River Leam to the west of the Site. The 600mm diameter sewer is located at a depth of approximately 5.0m.

#### 3.5.2. Watercourses

There are no watercourses within the Site.

The River Leam, designated a Main River, is located between approximately 100m and 200m to the north-west and north of the Site.

#### 3.5.3. Waterbodies

There are no waterbodies located within or close to the Site.

The Grand Union Canal is located approximately 450m to the south of the Site. It has a water level of approximately 53.5m AOD. It does not run on an embankment and is not impounded by a manmade structure in the vicinity of the Site.

#### 3.5.4. Groundwater

According to Environment Agency mapping, the Site is not located within a groundwater Source Protection Zone.

Both the superficial deposits and bedrock underlying the Site are designated a *Secondary A<sup>7</sup>* aquifers. Both aquifers are classified as having *Medium-High* vulnerability to pollution.

---

<sup>7</sup> Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

## 4. Development Proposals

### 4.1. Description

The Scheme comprises erection of temporary structures, including vehicle trackway, solar panels and security fencing to the Site boundary associated with the temporary use of an area of Royal Leamington Spa Victoria Park for the purposes of hosting the Lawn Bowls and Para Lawn Bowls event for the Birmingham 2022 Commonwealth Games.

This facility is anticipated to be in place from June to August 2022.

The temporary games overlay for Victoria Park is illustrated on drawing number VIC-LBO-930 in **Appendix B**.

### 4.2. Sequential Test

The purpose of the Sequential Test is to direct development towards areas of the lowest flood risk. The Environment Agency Flood Map shows that the Site is located within Flood Zones 1 (low risk; <0.1% annual exceedance probability (AEP)) and 2 (medium risk; 0.1-1% AEP). According to the Planning Practice Guidance<sup>2</sup>, Table 2, the temporary games overlay is classified as *Less Vulnerable*.

The Planning Practice Guidance<sup>2</sup>, Table 3 shows that *Less Vulnerable* developments within Flood Zone 2 are considered appropriate. The temporary games overlay facilities must be located at the Site hence there are no suitable alternative sites that could be considered; therefore, the Scheme is deemed to pass the Sequential Test.

## 5. Flood Risk Assessment

### 5.1. Flooding History

In January of 1992, The Strategic Flood Risk Assessment<sup>8</sup> and information supplied by the EA state the flooding occurred from the River Leam in the vicinity of the Site in January 1985, April 1998 and January 1992. Based on available information relating the flood extents, none of these flood events encroached into the Site.

### 5.2. Identification of Flooding Sources

The Planning Practice Guidance<sup>2</sup> requires that the risk of flooding for the Site from different sources be considered and, where necessary, an assessment undertaken. Table 5-1 shows the results of this process.

**Table 5-1 - Identification of flooding sources**

Source	Potential risk/further assessment	Reason
Fluvial (river)	Yes	The Environment Agency Flood Map, included in Figure 5-1, shows the Site to be located within Flood Zones 1 (low risk; <0.1% AEP) and 2 (medium risk; 0.1-1% AEP)
Coastal, tidal and estuarine	No	The Site is remote from coastal, tidal and estuarine waters.
Surface water	Yes	The Environment Agency Surface Water Flood Map, included in Figure 5-2, shows areas at the eastern end of the Site to be at risk of surface water flooding.
Groundwater	Yes	The Warwickshire County Council Level 1 Strategic Flood Risk Assessment <sup>8</sup> identifies the Site as being located within an area susceptible to groundwater flooding (>75% susceptibility).
Sewers	Yes	The Strategic Flood Risk Assessment <sup>8</sup> shows that there have been 10 to 20 sewer flooding incidents within the postcode area where the Site is located.
Artificial sources	Yes	The Environment Agency Reservoir Flood Map, included in Figure 5-3, shows that the Site is located within an area potentially at risk in the event of a reservoir failure.

<sup>8</sup> Warwickshire County Council Level 1 Strategic Flood Risk Assessment, September 2013, URS

Figure 5-1 - Environment Agency Flood Map

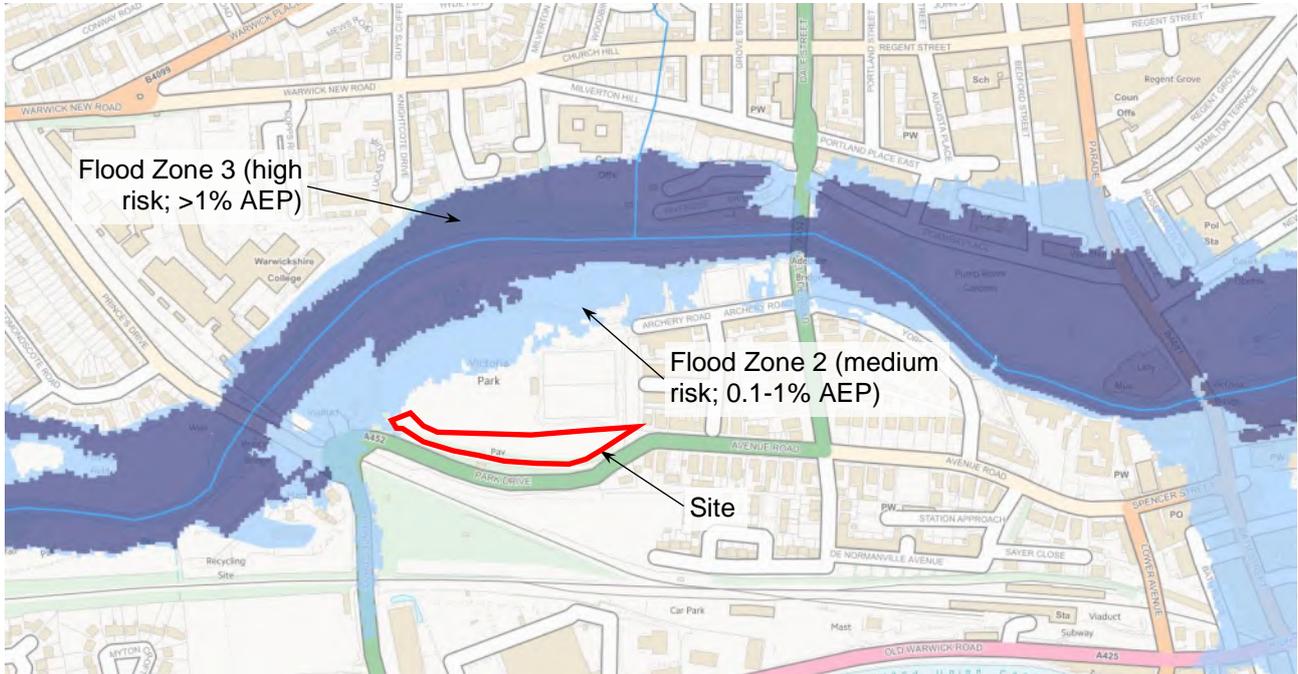


Figure 5-2 Environment Agency Surface Water Flood Map

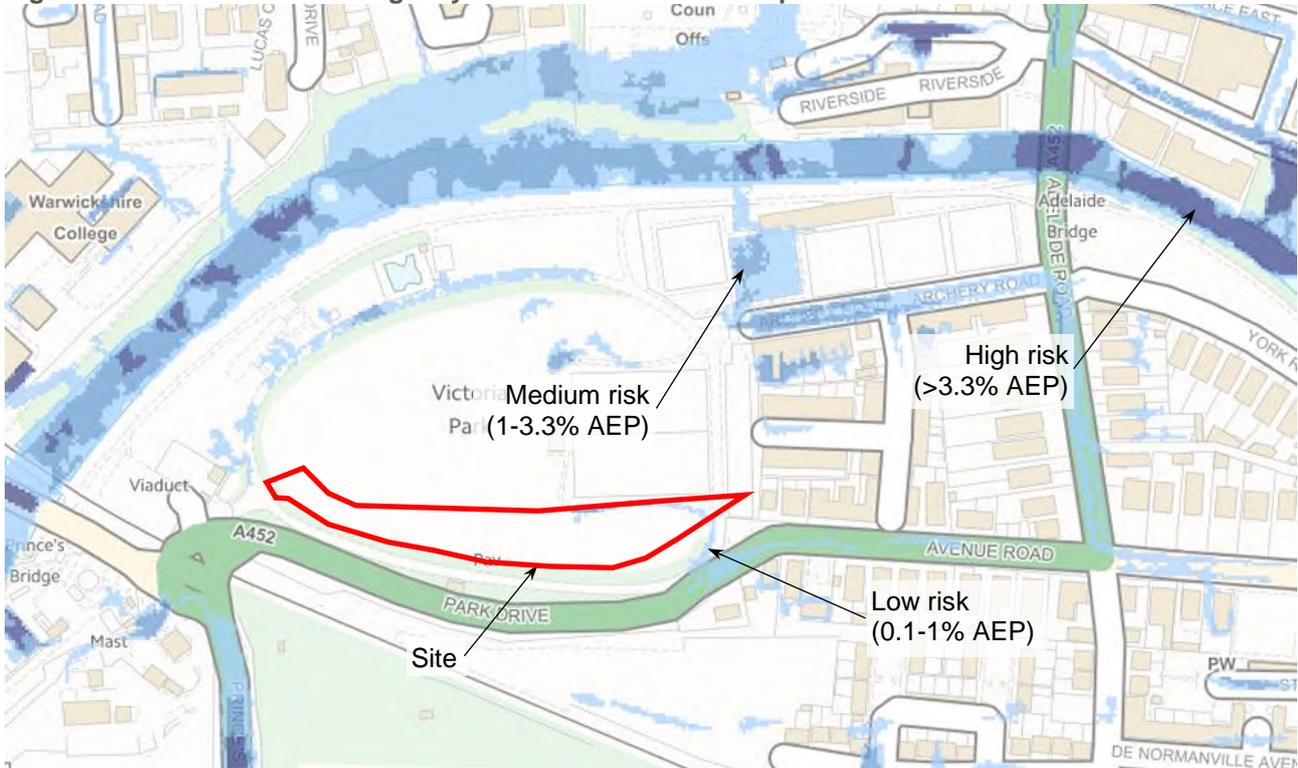
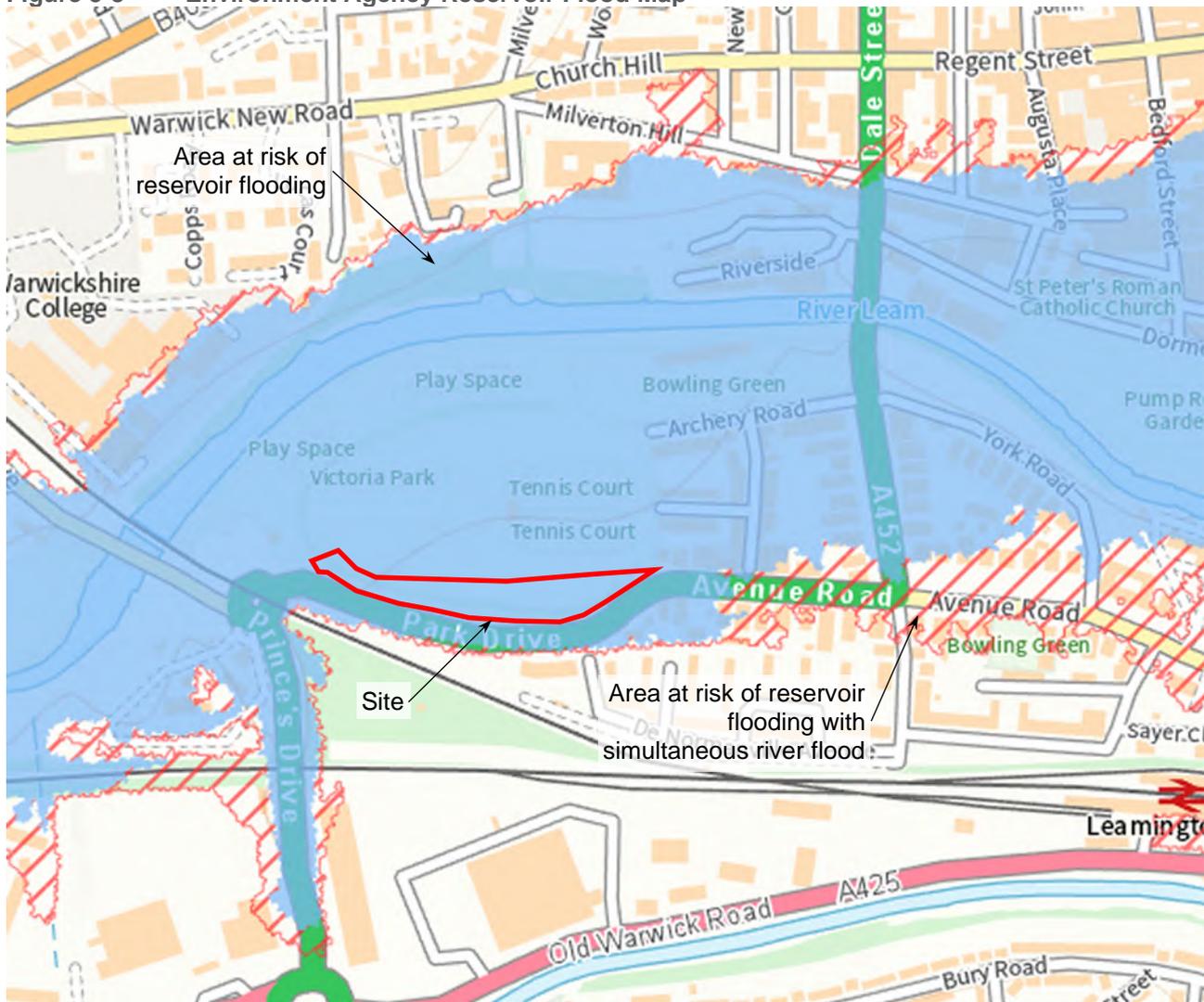


Figure 5-3 Environment Agency Reservoir Flood Map



On the basis of the above, the risk assessment section below will establish the risks associated with fluvial, surface water, groundwater, sewers and artificial flooding sources. The risks associated with tidal flooding are considered to be minimal and are therefore not considered further in the risk assessment.

### 5.3. Risk Assessment

#### 5.3.1. Fluvial (River) Flooding

A comparison between the Environment Agency Flood Map, shown in Figure 5-1, and the boundary of the Site shows that the majority of the Site is located within Flood Zone 1 (low risk; <0.1% AEP). The vehicular entrance is located within Flood Zone 2 (medium risk; 0.1-1% AEP) with the remainder within Flood Zone 1. The access to the Site would only be affected during a flood event exceeding the 1% AEP event. This has a 0.25% (1 in 400) probability of occurrence during the 3 months in which the temporary games overlay facilities will be present. On this basis, the risk of fluvial flooding is considered to be low and does not require specific mitigation.

#### 5.3.2. Surface Water Flooding

The Surface Water Flood Map, included in Figure 5-2, shows that the majority of the Site is at very low risk of surface water flooding. The mapping shows that there is an overland flow path extending approximately 100m

into the eastern part of the Site originating from Park Drive. The flooding is generally concentrated along the northern boundary of the Site. Available information suggests that this flow route may start to become active for rainfall events exceeding 3.3% AEP and is likely to be established for events that exceed 1% AEP. A comparison with the Scheme layout plan shows that only a small section of the temporary access track would be affected by this surface water flooding.

On the basis of the above, the risks associated with surface water flooding are considered to be low. The flood risk management measures described in section 5.4 will provide resilience against surface water flooding should a significant rainfall event occur.

### 5.3.3. Groundwater Flooding

The high risk of groundwater emergence that has been identified at the Site is a result of its location at the bottom of a valley adjacent to the River Leam. Groundwater is most likely to emerge at the lowest points in the topography which often coincides with the location of a river.

In the event that groundwater does emerge, it will tend to flow over the ground surface towards the River Leam. There are no significant isolated depressions within the Site where the groundwater could accumulate and not be able to drain away; therefore, the impact of any groundwater emergence is anticipated to be minimal hence the risk of flooding is considered to be low.

### 5.3.4. Sewer Flooding

Historic sewer flooding records map indicates that the site is situated in a postcode area that has recorded 10 to 20 instances of sewer flooding.

In the event of a sewer flooding event associated with one of the public sewers located within or close to the Site, the topography of the area is such that the flood water would tend to be directed to the north and north-east away from the Site. As a consequence, the risk of sewer flooding affecting the Site is considered to be low.

### 5.3.5. Flooding From Artificial Sources

The Site is potentially at risk of flooding in the event of a failure at Draycote Water, located approximately 15km upstream. The depth of flooding at the Site in the event of a reservoir failure is shown on Environment Agency mapping to be greater than 2.0m.

The likelihood of such an event occurring is very low due to the maintenance and regulatory regime that is applied to reservoirs. Should a failure occur, the priority would be the protection of life rather than the overlay facilities hence the evacuation of the population of the Site to safe areas is necessary. The closest area outside of the area potentially affected is the residential area to the south of Avenue Road to the south of Victoria Park. Based on available information, the maximum distance individuals would need to travel to reach either of these areas is approximately 200m. On this basis, the risk is considered to be very low and any consequences can be managed.

## 5.4. Flood Risk Management

The temporary games overlay will incorporate the following flood risk management measures to mitigate the risks identified above:

- Temporary cabins or similar facilities containing sensitive equipment should have floor levels at least 0.3m above external ground levels.
- Electrical and data distribution to facilities should ensure that all connections are at high level.

## 5.5. Residual Risks

Residual risks are those risks that remain once the flood risk management measures described above have been implemented in accordance with the requirements of the Environment Agency and Lead Local Flood Authority. These are typically associated with extreme events (greater than the 1% AEP plus climate change event) that overwhelm drainage systems and exceed the parameters used to design any mitigation measures.



The principal residual risks that will affect this Site are:

- An extreme flood event on the River Leam exceeding the 0.1% AEP event.
- An extreme rainfall event either on the Site directly or higher land to the south that results in drainage systems being overwhelmed causing surface water flooding.

If it becomes necessary to evacuate the Site or for emergency services to gain access during an extreme event, safe access for both vehicles and pedestrians can be achieved onto Avenue Road to the south.

## 6. Surface Water Drainage Strategy

### 6.1. Existing Drainage Regime

As described in Section 3.5, the Site is not served by any positive surface water drainage systems. All rainfall that lands on the Site will either infiltrate into the ground or flow over the ground surface in a generally northerly direction towards the River Leam.

### 6.2. Impact of the Proposed Overlay on the Existing Drainage Regime

As the Scheme is temporary, the drainage strategy for the site will mimic the existing drainage regime for the Site with run-off being allowed to flow onto and over the existing ground surface and ultimately enter the River Leam.

Any proposed external hard surfacing areas on grassed areas will be formed using aluminium temporary trackway plates that will shed water onto adjacent areas. Where other structures are proposed on grassed areas, it is anticipated that in a rainfall event, runoff will be directed onto the surrounding ground whereupon it will drain as per existing conditions.

### 6.3. Proposed Strategy

Surface water runoff from the Scheme is intended to be managed by allowing runoff to flow onto adjacent grassed areas before it drains away as per existing conditions.

The proposed temporary surfacing for the access road will be designed to shed water onto the adjacent grassed areas whereupon it will drain either by infiltration or overland flow towards the River Leam, as per the existing situation. As a consequence, the rainfall volumes and run-off flow rates to the River Leam will not be affected by the Scheme.

## 7. Conclusions & Recommendations

### 7.1. Conclusions

The flood risk is considered to be low and will not adversely affect the Scheme provided that the proposed flood risk management measures described in section 5.4 are incorporated into the design.

There are considered to be no issues with surface water drainage that adversely impact on the potential development on the site or its deliverability.

It is proposed that surface water runoff from the Scheme be managed through means of allowing runoff to flow onto adjacent areas and drain via natural processes into the ground or overland into the River Leam.

The above proposals are subject to approval by the Lead Local Flood Authority.

### 7.2. Recommendations

This Flood Risk Assessment is suitable for submitting in support of a full planning application for the Scheme.

The design of the Scheme and its drainage systems must comply with the parameters defined in this document.

# Glossary

Archaeological Constraint Area	Areas where there is a high potential of significant archaeological remains surviving.
Area of Outstanding Natural Beauty	Designated exceptional landscape whose distinctive character and natural beauty are precious enough to be safeguarded in the national interest.
Conservation Areas	Designation to protect the special architectural and historic interest of a place
EIA Screening	When the local planning authority determines whether a project requires an environmental impact assessment.
Green Belt	A policy used to retain areas of largely undeveloped, wild or agricultural land surrounding or neighbouring urban areas.
Flood Zone	Zones used in the planning process as a starting point in determining how likely somewhere is to flood.
Historic Environment Records	Sources of and signposts to information relating to landscapes, buildings, monuments, sites, places, areas and archaeological finds.
Listed Building	Protection given to a building of special architectural or historical interest.
Local Wildlife Site	Areas deemed to be the most valuable wildlife areas selected using determined criteria and surveys.
National Nature Reserve	Key places for wildlife and natural features established to protect significant areas of habitat and geological formations.
Overlay	The series of temporary components at the host venues that are necessary for the purposes of hosting the Commonwealth Games.
Planning Conditions	Planning conditions are conditions that are attached to a planning permission that must be discharged by a defined point in time depending on the nature of the condition.
Planning Consent	Planning consent and planning permission are used interchangeably.
Outline Application	An outline planning application is made to establish whether the principle of the development is acceptable to the Local Planning Authority (LPA).
S106 Obligations	A Section 106 is a legal agreement between an applicant seeking planning permission and the local planning authority, which is used to mitigate the impact of the development on the local infrastructure and capacity.

Site of Importance for Nature Conservation (SINC)	A designation used by local authorities for sites of substantive local nature conservation and geological value.
Sustainability	Meeting the needs of the current generation whilst preserving the needs of future generations.
Permitted Development Rights	Permitted development rights are an automatic grant of planning permission which allow certain development to be carried out without having to obtain planning permission.
Potential Site of Importance	Sites that have the potential to be considered for designation as a Site of Importance for Nature Conservation.
Prior Approval	Prior approval is a formal submission to the LPA to confirm that specific parts of a proposed development is acceptable before commencing the development.
Registered Park and Garden	Parks and Gardens listed on the register designed to celebrate designed landscapes of note and encourage appropriate protection
Reserved Matters	Reserved matters applications are made after the receipt of outline planning permission to provide and gain permission for the details of the proposed development.
Site of Special Scientific Interest	Any area of land which, in its opinion, is of special interest by reason of any of its flora, fauna, geological, geomorphological or physiographical features.
Special Area of Conservation	Important high-quality conservation sites that will make a significant contribution to conserving specific habitats and species.
Tree Preservation Order	Designation to protect specific trees, groups of trees or woodlands in the interest of amenity.
Validation	LPA's require each planning application to be assessed as 'valid' before it may be considered. LPA's provide a validation checklist that should be used to reduce the risk of an application being deemed invalid. The lists primarily detail all information that is reasonably needed to assess the merits and impacts of the proposed development.



# Appendix A. Correspondence

## Product 4 (Detailed Flood Risk Data) for Victoria Park, Leamington Spa

Reference number: 190366

Date of issue: 11 December 2020

### Model Information

The following information and attached maps contain a summary of the modelled information relevant to the area of interest. The information provided is based on the best available data as of the date of issue.

Model Name	Release Date
River Leam, Itchen, Southam, Witnash Brook, Pingle Brook SFRM	2010

### Flood Map for Planning (Rivers and Sea)

The Flood Map for Planning (Rivers and Sea) indicates the area at risk of flooding, **assuming no flood defences exist**, for a flood event with a 0.5% chance of occurring in any year for flooding from the sea, or a 1% chance of occurring in any year for fluvial (river) flooding (Flood Zone 3). It also shows the extent of the Extreme Flood Outlines (Flood Zone 2) which represents the extent of a flood event with a 0.1% chance of occurring in any year, or the highest recorded historic extent if greater. The Flood Zones refer to the land at risk of flooding and **do not** refer to individual properties. It is possible for properties to be built at a level above the floodplain but still fall within the risk area.

This Flood Map only indicates the extent and likelihood of flooding from rivers or the sea. It should also be remembered that flooding may occur from other sources such as surface water, sewers, road drainage, etc.

To find out which flood zone a location is in please use: <https://flood-map-for-planning.service.gov.uk/>

### Definition of flood zones

- **Zone 1** - The area is within the lowest probability of flooding from rivers and the sea, where the chance of flooding in any one year is less than 0.1% (i.e. a 1000 to 1 chance).
- **Zone 2** - The area which falls between the extent of a flood with an annual probability of 0.1% (i.e. a 1000 to 1 chance) fluvial and tidal, or greatest recorded historic flood,

whichever is greater, and the extent of a flood with an annual probability of 1% (i.e. a 100 to 1 chance) fluvial / 0.5% (i.e. a 200 to 1 chance) tidal. (Land shown in light blue on the Flood Map).

- **Zone 3** - The chance of flooding in any one year is greater than or equal to 1% (i.e. a 100 to 1 chance) for river flooding and greater than or equal to 0.5% (i.e. a 200 to 1 chance) for coastal and tidal flooding.

Note: The Flood Zones shown on the Environment Agency's Flood Map for Planning (Rivers and Sea) do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding. Reference should therefore also be made to the [Strategic Flood Risk Assessment](#) when considering location and potential future flood risks to developments and land uses.

## Node Data/ Modelled Levels

The attached map(s) show a selection of 1Dmodel node points near to your site. The fluvial levels for these node points are shown below.

### Fluvial Flood Levels (m AOD)

The modelled levels are given in m AOD (N), m AOD indicates metres Above Ordnance Datum (Newlyn).

The information is taken from the model referenced above and does not include the updated climate change figures.

Node Label	MODEL	EASTING	NORTHING	Annual Exceedance Probability -Maximum Water Levels (mAOD) Defended								
				20% (1 in 5)	10% (1 in 10)	5% (1 in 20)	2% (1 in 50)	1.33% (1 in 75)	1% (1 in 100)	1% (Climate Change)	0.6% (1 in 200)	0.1% (1 in 1000)
L1292.8_350	River Leam, Itchen, Southam, Wiltash Brook, Pingle Brook SFRM 2010	431065	265655	49.16	49.19	49.23	49.29	49.34	49.37	49.51	49.47	50.09
L1506.6_349	River Leam, Itchen, Southam, Wiltash Brook, Pingle Brook SFRM 2010	431314	265672	49.19	49.23	49.26	49.33	49.38	49.42	49.57	49.54	50.21
L1691.0-U_348	River Leam, Itchen, Southam, Wiltash Brook, Pingle Brook SFRM 2010	431474	265676	49.30	49.36	49.43	49.55	49.63	49.70	49.95	49.95	51.43

Node Label	MODEL	EASTING	NORTHING	Annual Exceedance Probability - Maximum Water Levels (mAOD) Undefended	
				1% (1 in 100)	0.1% (1 in 1000)
L1292.8_350	River Leam, Itchen, Southam, Wiltash Brook, Pingle Brook SFRM 2010	431065	265655	49.37	50.09
L1506.6_349	River Leam, Itchen, Southam, Wiltash Brook, Pingle Brook SFRM 2010	431314	265672	49.42	50.21
L1691.0-U_348	River Leam, Itchen, Southam, Wiltash Brook, Pingle Brook SFRM 2010	431474	265676	49.70	51.43

## Climate Change

In February 2016 the '[Flood Risk Assessments: Climate Change Allowances](#)' were published on GOV.UK. This is in replacement of previous climate change allowances for planning applications. The data provided in this product does not include the new allowances. You will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding. The fluvial climate change factors are now more complex and a single uplift percentage across England cannot be justified.

The Environment Agency will incorporate the new allowances into future modelling studies. For now, it remains the applicant's responsibility to demonstrate through their proposal and flood risk assessments that new developments will be safe in flood risk terms for its lifetime.

## Recorded Flood Outlines

Following an examination of our records of historical flooding we do hold records of flooding for this area, please find tabulated information below for these recorded flood events.

Flood Event Code	Flood Event Date	Recorded Level/s (if applicable)	Source of Flooding	Cause of Flooding
20115	01/01/1985	N/A	Main River	Channel capacity Exceeded (No Raised defences)
13196	01/04/1998	N/A	Main River	Channel capacity Exceeded (No Raised defences)

The corresponding recorded flood outline/s can be accessed here:

<https://data.gov.uk/dataset/recorded-flood-outlines1>

The Recorded Flood Outlines take into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding. It includes flood extents that may have been affected by overtopping, breaches or blockages. Any flood extents shown do not necessarily indicate that properties were flooded internally. It is also possible that the pattern of flooding in this area has changed and that this area would now flood or not flood under different circumstances.

Please note that our records are not comprehensive and that the map is an indicative outline of areas which have previously flooded, not all properties within this area will have flooded. It is possible that other flooding may have occurred that we do not have records for.

You may also wish to contact your Local Authority or Internal Drainage Board (where relevant), to see if they have other relevant local flood information.

## **Flood Defences**

There are no formal flood defences owned or operated by the Environment Agency protecting this site. You may wish to contact the Local Authority to obtain further information regarding localised flooding from drains, culverts and small watercourses, and regarding existing or planned flood defence measures.

## **Planning development/s**

If you have requested this information to help inform a development proposal, then you should note the information on GOV.UK on the use of Environment Agency Information for Flood Risk Assessments. You can also request pre application advice:

<https://www.gov.uk/planning-applications-assessing-flood-risk>

<https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion>

## **Supporting Information**

### **Surface Water**

Managing the risk of flooding from surface water is the responsibility of Lead Local Flood Authorities. The 'risk of flooding from surface water' map has been produced by the Environment Agency on behalf of government, using information and input from Lead Local Flood Authorities.

You may wish to contact your Local Authority who may be able to provide further detailed information on surface water.

It is not possible to say for certain what the flood risk is but we use the best information available to provide an indication so that people can make informed choices about living with or managing the risks. The information we supply does not provide an indicator of flood risk at an individual site level. Further information can be found on the Agency's website:

<https://flood-warning-information.service.gov.uk/long-term-flood-risk>

### **Flood Risk from Reservoirs**

The Flood Risk from Reservoirs map can be found on the Long Term Flood Risk Information website:

<https://flood-warning-information.service.gov.uk/long-term-flood-risk/map?map=Reservoirs>

### **Flood Alert & Flood Warning Area**

We issue flood alert/warnings to specific areas when flooding is expected. If you receive a flood warning you should take immediate action.

You can check whether you are in a Flood Alert/Warning Area and register online using the links below:

<https://www.gov.uk/check-flood-risk>

<https://www.gov.uk/sign-up-for-flood-warnings>

If you would prefer to register by telephone, or if you need help during the registration process, please call Floodline on 0345 988 1188.

The associated dataset for flood warning areas is available here:

<https://data.gov.uk/dataset/flood-warning-areas3>

The associated dataset for flood alert areas is available here: <https://data.gov.uk/dataset/flood-alert-areas2>

### **Flood Risk Activity Permits**

We now consider applications for works, which may be Flood Risk Activities, under Environmental Permitting Regulations. This replaces the process of applying for a Flood Defence Consent. You may need an environmental Permit for flood risk activities if you want to do work:

- in, under, over or near a main river (including where the river is in a culvert)
- on or near a flood defence on a main river
- in the flood plain of a main river
- on or near a sea defence

Please go to this website to find out more about how to apply:

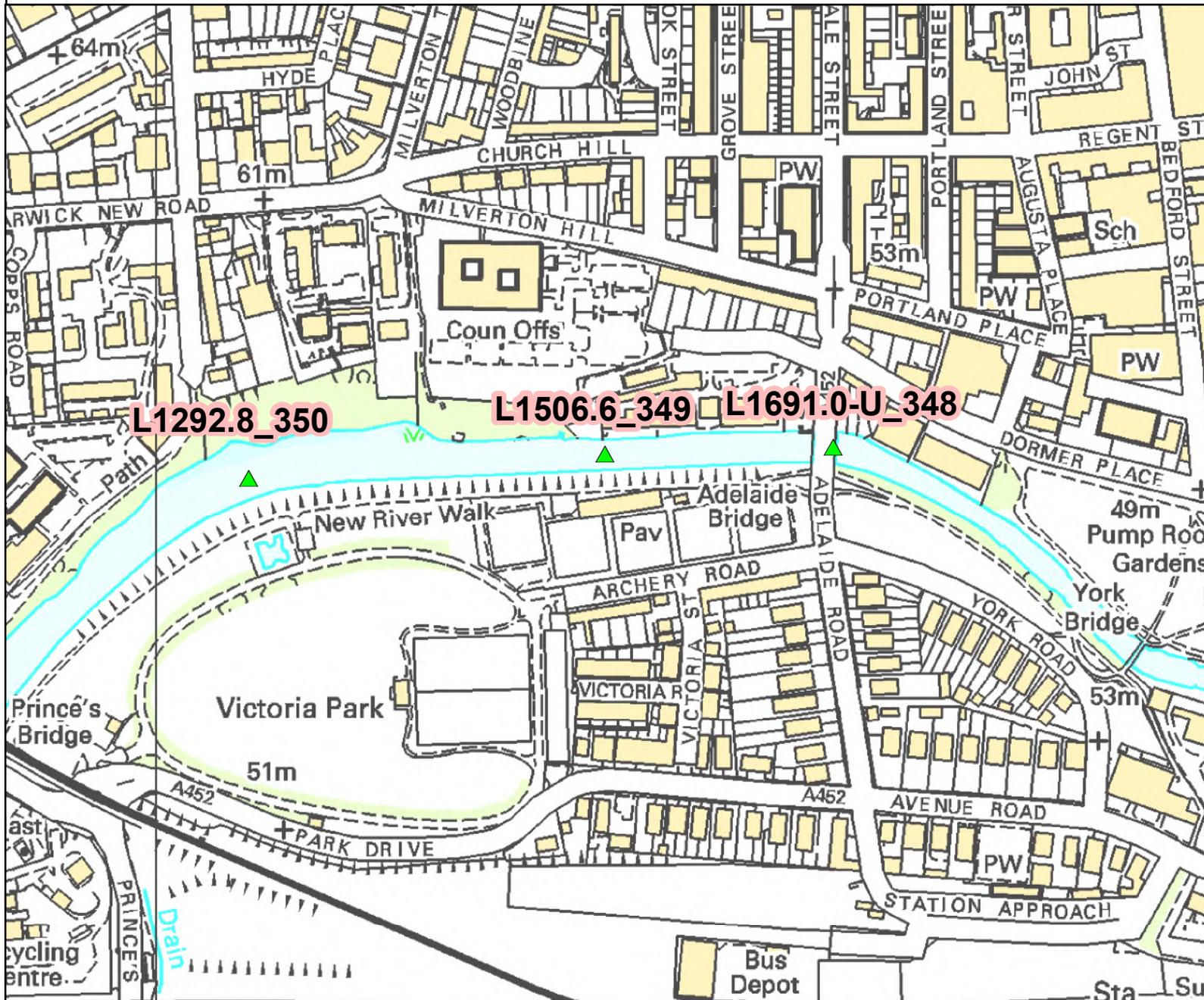
<https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>.

Please be aware that Bespoke and Standard Rules permits can take up to 2 months to determine and will incur a charge.

Further details about the Environment Agency information supplied can be found on the GOV.UK website:

<https://www.gov.uk/browse/environment-countryside/flooding-extreme-weather>

# Node Point Location Plan, centred on SP3135365620, created 11 December 2020

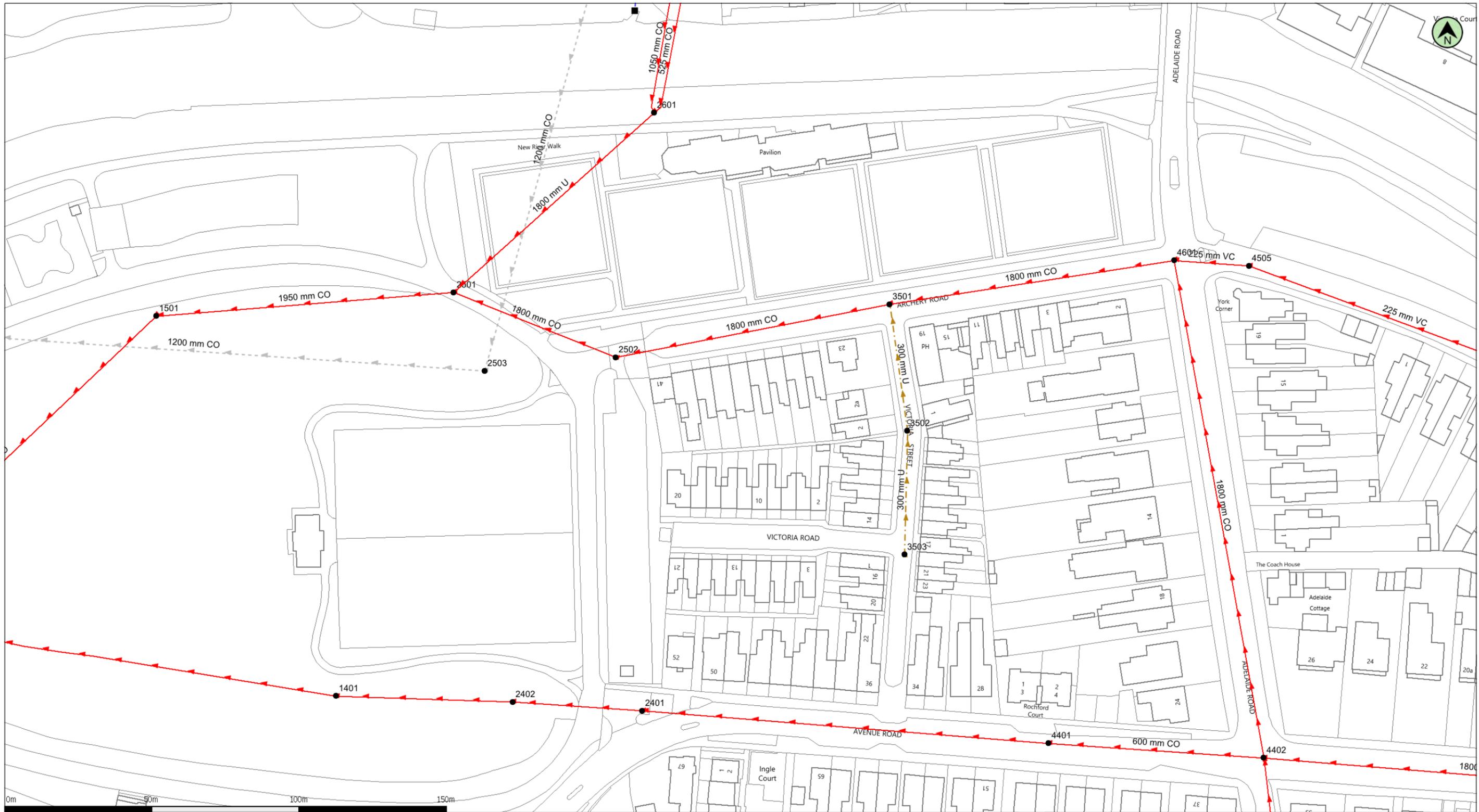


## Legend

- ▲ Modelled Levels selection

Scale 1:4,000





(c) Crown copyright and database rights 2020 Ordnance Survey 100031673

Date: 11/05/20

Scale: 1:1250

Map Centre: 431318,265551

Data updated: 14/04/20

Our Ref: 387461 - 7

Wastewater Plan A3

Do not scale off this Map. This plan and any information supplied with it is furnished as a general guide, is only valid at the date of issue and no warranty as to its correctness is given or implied. In particular this plan and any information shown on it must not be relied upon in the event of any development or works (including but not limited to excavations) in the vicinity of SEVERN TRENT WATER assets or for the purposes of determining the suitability of a point of connection to the sewerage or distribution systems. On 1 October 2011 most private sewers and private lateral drains in Severn Trent Water's sewerage area, which were connected to a public sewer as at 1 July 2011, Transferred to the ownership of Severn Trent Water and became public sewers and public lateral drains. A further transfer takes place on 1 October 2012. Private pumping stations, which form part of these sewers or lateral drains, will transfer to ownership of Severn Trent Water on or before 1 October 2016. Severn Trent Water does not assess complete records of these assets. These assets may not be displayed on the map. Reproduction by permission of Ordnance Survey on behalf of HMSO. © Crown Copyright and database right 2004. All rights reserved. Ordnance Survey licence number: 100031673. Document users other than SEVERN TRENT WATER business users are advised that this document is provided for reference purpose only and is subject to copyright, therefore, no further copies should be made from it.

Public Foul Gravity/Lateral Drain		Highway Drain		Manhole Foul	
Public Combined Gravity/Lateral Drain		Overflow Pipe		Manhole Surface	
Public Surface Water Gravity/Lateral Drain		Disposal Pipe		Abandoned Pipe	
Pressure Foul		Culverted Water Course		Section 104 sewers are shown in green	
Pressure Combined		Pumping Station		Private sewers are shown in magenta	
Pressure Surface Water		Fitting			

joe.cleland@atkinglobal.com

Victoria Park



## GENERAL CONDITIONS AND PRECAUTIONS TO BE TAKEN WHEN CARRYING OUT WORK ADJACENT TO SEVERN TRENT WATER'S APPARATUS

Please ensure that a copy of these conditions is passed to your representative and/or your contractor on site. If any damage is caused to Severn Trent Water Limited (STW) apparatus (defined below), the person, contractor or subcontractor responsible must inform STW immediately on:

**0800 783 4444 (24 hours)**

- a) These general conditions and precautions apply to the public sewerage, water distribution and cables in ducts including (but not limited to) sewers which are the subject of an Agreement under Section 104 of the Water Industry Act 1991 (a legal agreement between a developer and STW, where a developer agrees to build sewers to an agreed standard, which STW will then adopt); mains installed in accordance with an agreement for the self-construction of water mains entered into with STW and the assets described at condition b) of these general conditions and precautions. Such apparatus is referred to as "STW Apparatus" in these general conditions and precautions.
- b) Please be aware that due to The Private Sewers Transfer Regulations June 2011, the number of public sewers has increased, but many of these are not shown on the public sewer record. However, some idea of their positions may be obtained from the position of inspection covers and their existence must be anticipated.
- c) On request, STW will issue a copy of the plan showing the approximate locations of STW Apparatus although in certain instances a charge will be made. The position of private drains, private sewers and water service pipes to properties are not normally shown but their presence must be anticipated. This plan and the information supplied with it is furnished as a general guide only and STW does not guarantee its accuracy.
- d) STW does not update these plans on a regular basis. Therefore the position and depth of STW Apparatus may change and this plan is issued subject to any such change. Before any works are carried out, you should confirm whether any changes to the plan have been made since it was issued.
- e) The plan must not be relied upon in the event of excavations or other works in the vicinity of STW Apparatus. It is your responsibility to ascertain the precise location of any STW Apparatus prior to undertaking any development or other works (including but not limited to excavations).
- f) No person or company shall be relieved from liability for loss and/or damage caused to STW Apparatus by reason of the actual position and/or depths of STW Apparatus being different from those shown on the plan.

In order to achieve safe working conditions adjacent to any STW Apparatus the following should be observed:

1. All STW Apparatus should be located by hand digging prior to the use of mechanical excavators.
2. All information set out in any plans received from us, or given by our staff at the site of the works, about the position and depth of the mains, is approximate. Every possible precaution should be taken to avoid damage to STW Apparatus. You or your contractor must ensure the safety of STW Apparatus and will be responsible for the cost of repairing any loss and/or damage caused (including without limitation replacement parts).
3. Water mains are normally laid at a depth of 900mm. No records are kept of customer service pipes which are normally laid at a depth of 750mm; but some idea of their positions may be obtained from the position of stop tap covers and their existence must be anticipated.
4. During construction work, where heavy plant will cross the line of STW Apparatus, specific crossing points must be agreed with STW and suitably reinforced where required. These crossing points should be clearly marked and crossing of the line of STW Apparatus at other locations must be prevented.
5. Where it is proposed to carry out piling or boring within 20 metres of any STW Apparatus, STW should be consulted to enable any affected STW Apparatus to be surveyed prior to the works commencing.
6. Where excavation of trenches adjacent to any STW Apparatus affects its support, the STW Apparatus must be supported to the satisfaction of STW. Water mains and some sewers are pressurised and can fail if excavation removes support to thrust blocks to bends and other fittings.
7. Where a trench is excavated crossing or parallel to the line of any STW Apparatus, the backfill should be adequately compacted to prevent any settlement which could subsequently cause damage to the STW Apparatus. In special cases, it may be necessary to provide permanent support to STW Apparatus which has been exposed over a length of the excavation before backfilling and reinstatement is carried out. There should be no concrete backfill in contact with the STW Apparatus.
8. No other apparatus should be laid along the line of STW Apparatus irrespective of clearance. Above ground apparatus must not be located within a minimum of 3 metres either side of the centre line of STW Apparatus for smaller sized pipes and 6 metres either side for larger sized pipes without prior approval. No manhole or chamber shall be built over or around any STW Apparatus.
9. A minimum radial clearance of 300 millimetres should be allowed between any plant or equipment being installed and existing STW Apparatus. We reserve the right to increase this distance where strategic assets are affected.
10. Where any STW Apparatus coated with a special wrapping is damaged, even to a minor extent, STW must be notified and the trench left open until the damage has been inspected and the necessary repairs have been carried out. In the case of any material damage to any STW Apparatus causing leakage, weakening of the mechanical strength of the pipe or corrosion-protection damage, the necessary remedial work will be recharged to you.
11. It may be necessary to adjust the finished level of any surface boxes which may fall within your proposed construction. Please ensure that these are not damaged, buried or otherwise rendered inaccessible as a result of the works and that all stop taps, valves, hydrants, etc. remain accessible and operable. Minor reduction in existing levels may result in conflict with STW Apparatus such as valve spindles or tops of hydrants housed under the surface boxes. Checks should be made during site investigations to ascertain the level of such STW Apparatus in order to determine any necessary alterations in advance of the works.
12. With regard to any proposed resurfacing works, you are required to contact STW on the number given above to arrange a site inspection to establish the condition of any STW Apparatus in the nature of surface boxes or manhole covers and frames affected by the works. STW will then advise on any measures to be taken, in the event of this a proportionate charge will be made.
13. You are advised that STW will not agree to either the erection of posts, directly over or within 1.0 metre of valves and hydrants,

14. No explosives are to be used in the vicinity of any STW Apparatus without prior consultation with STW.

#### **TREE PLANTING RESTRICTIONS**

There are many problems with the location of trees adjacent to sewers, water mains and other STW Apparatus and these can lead to the loss of trees and hence amenity to the area which many people may have become used to. It is best if the problem is not created in the first place. Set out below are the recommendations for tree planting in close proximity to public sewers, water mains and other STW Apparatus.

15. Please ensure that, in relation to STW Apparatus, the mature root systems and canopies of any tree planted do not and will not encroach within the recommended distances specified in the notes below.

16. Both Poplar and Willow trees have extensive root systems and should not be planted within 12 metres of a sewer, water main or other STW Apparatus.

17. The following trees and those of similar size, be they deciduous or evergreen, should not be planted within 6 metres of a sewer, water main or other STW Apparatus. E.g. Ash, Beech, Birch, most Conifers, Elm, Horse Chestnut, Lime, Oak, Sycamore, Apple and Pear. Asset Protection Statements Updated May 2014

18. STW personnel require a clear path to conduct surveys etc. No shrubs or bushes should be planted within 2 metre of the centre line of a sewer, water main or other STW Apparatus.

19. In certain circumstances, both STW and landowners may wish to plant shrubs/bushes in close proximity to a sewer, water main or other STW Apparatus for screening purposes. The following are shallow rooting and are suitable for this purpose: Blackthorn, Broom, Cotoneaster, Elder, Hazel, Laurel, Privet, Quickthorn, Snowberry, and most ornamental flowering shrubs.



## Read, Ellen

---

**From:** FRM Planning <frmplanning@warwickshire.gov.uk>  
**Sent:** 23 October 2020 15:16  
**To:** Read, Ellen  
**Subject:** 5200949 LLFA enquiry re: B2022 Victoria Park

Dear Ellen,

Thank you for contacting Warwickshire County Council's Flood Risk Management Team.

We have several documents that could be of use to you, including our Surface Water Management Plan, Local Flood Risk Management Strategy and Strategic Flood Risk Assessment, which can be found online at <https://www.warwickshire.gov.uk/flooding>.

The Surface Water Management Plan (SWMP) and Local Flood Risk Management Strategy (LFRMS) have been completed for Warwickshire in line with our duties as a Lead Local Flood Authority (LLFA). These contain detailed information of historic flooding, planning matters and wider flooding issues in Warwickshire, so may contain information for your site.

Our planning standing advice document, which outlines our requirements when completing an FRA can be found here <https://www.warwickshire.gov.uk/floodpreappadvice>

If you require any further or more bespoke information, we also offer a chargeable pre-application service (our website currently states differently, but is in the process of being updated). Please let me know if this is something you would be interested in and I'd be happy to forward costings to you.

Thank you again for contacting us.

Best wishes  
Cora Greenwood

Flood Risk Management

**Please send responses to [FRMplanning@warwickshire.gov.uk](mailto:FRMplanning@warwickshire.gov.uk)**

Flood Risk Management  
Planning Delivery  
Environment Services  
Warwickshire County Council

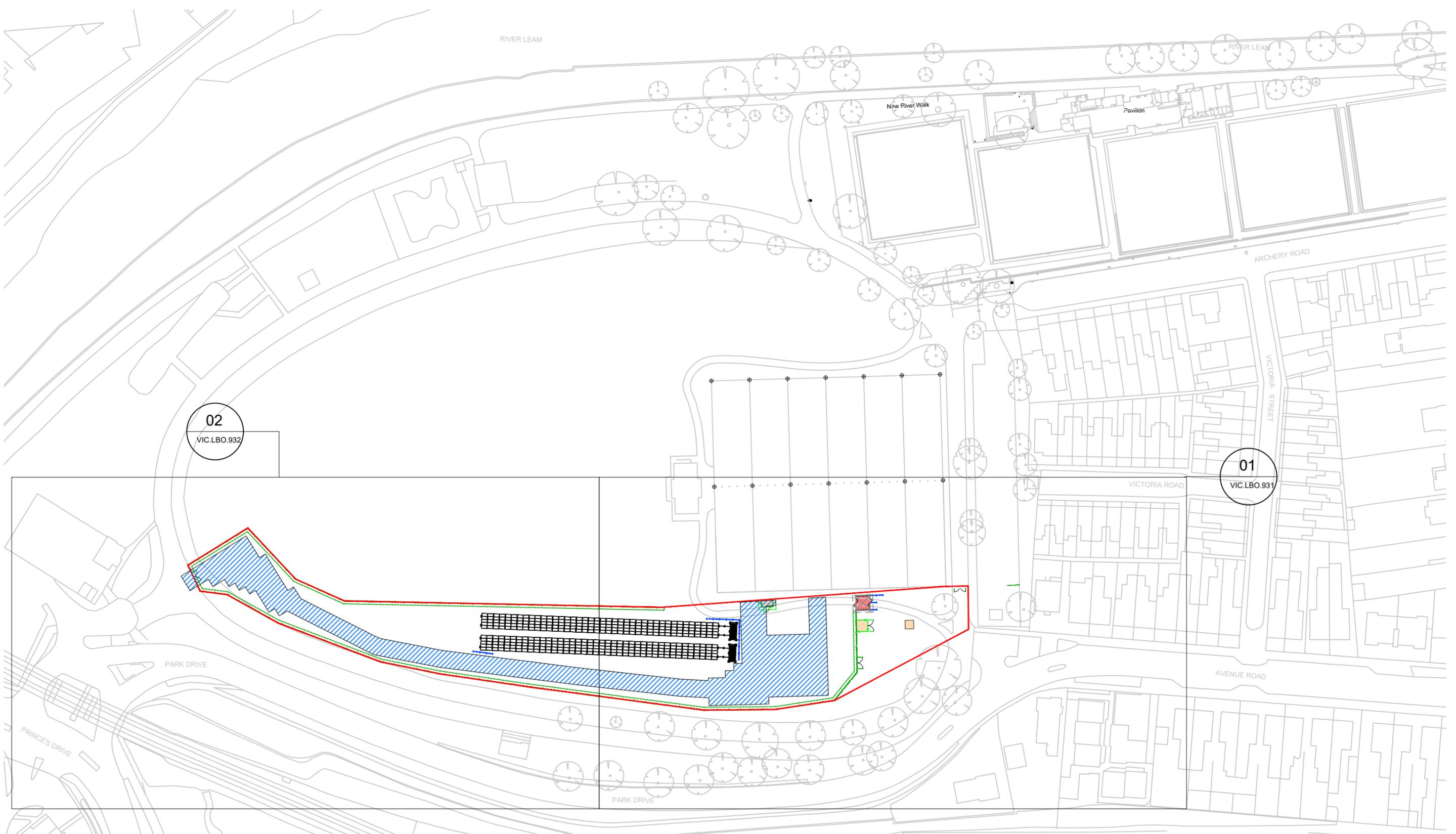
Tel. 01926 412982  
Email: [FRMplanning@warwickshire.gov.uk](mailto:FRMplanning@warwickshire.gov.uk)  
[www.warwickshire.gov.uk](http://www.warwickshire.gov.uk)

***Emails sent to individual FRM officers may not be logged or processed promptly.***

This transmission is intended for the named addressee(s) only and may contain confidential, sensitive or personal information and should be handled accordingly. Unless you are the named addressee (or authorised to receive it for the addressee) you may not copy or use it, or disclose it to anyone else. If you have received this transmission in error please notify the sender immediately. All email traffic sent to or from us may be subject to recording and/or monitoring in accordance with relevant legislation.



## Appendix B. Drawings



02  
VIC.LBO.932

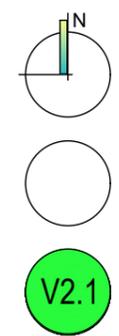
01  
VIC.LBO.931

- LEGEND:**
-  Application Boundary
  -  Security Boundary
  -  Temporary Hardstanding Hatch
  -  Tree

**Disclaimer**  
 Copyright © Birmingham 2022 Limited. Any reproduction or transmission of all or part of this drawing, whether by photocopying or storing in any medium by electronic means or otherwise, without the written permission of an authorised representative of Birmingham 2022 Limited, is prohibited. Unless agreed in writing by an authorised representative of Birmingham 2022 Limited, Birmingham 2022 Limited accepts no liability whatsoever for any loss (whether direct, indirect, special or consequential) incurred as a result of any use of or reliance on this drawing. All dimensions are to be verified on site. Do not scale from this drawing.

C 01/02/2022 Town Planning CG MC

Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown Copyright and database rights 2020. All rights reserved. OS Licence No 0100031673. You are not permitted to copy, sub-license, distribute or sell any of this data to third parties in any form.



**TOWN PLANNING**  
 VIC - Victoria Park  
 Lawn Bowls  
 Statutory Authority  
 Site Plan Proposed

A3 1:1250



VIC LBO 930





Paul Birkenshaw  
**Atkins Limited**  
Two Chamberlain Square  
Paradise Circus  
Birmingham  
B3 3AX

© Atkins Limited except where stated otherwise