

Many homes and businesses in the Roath, Penylan and Newport Road areas are at risk of flooding from the Roath Brook and the River Rhymney.

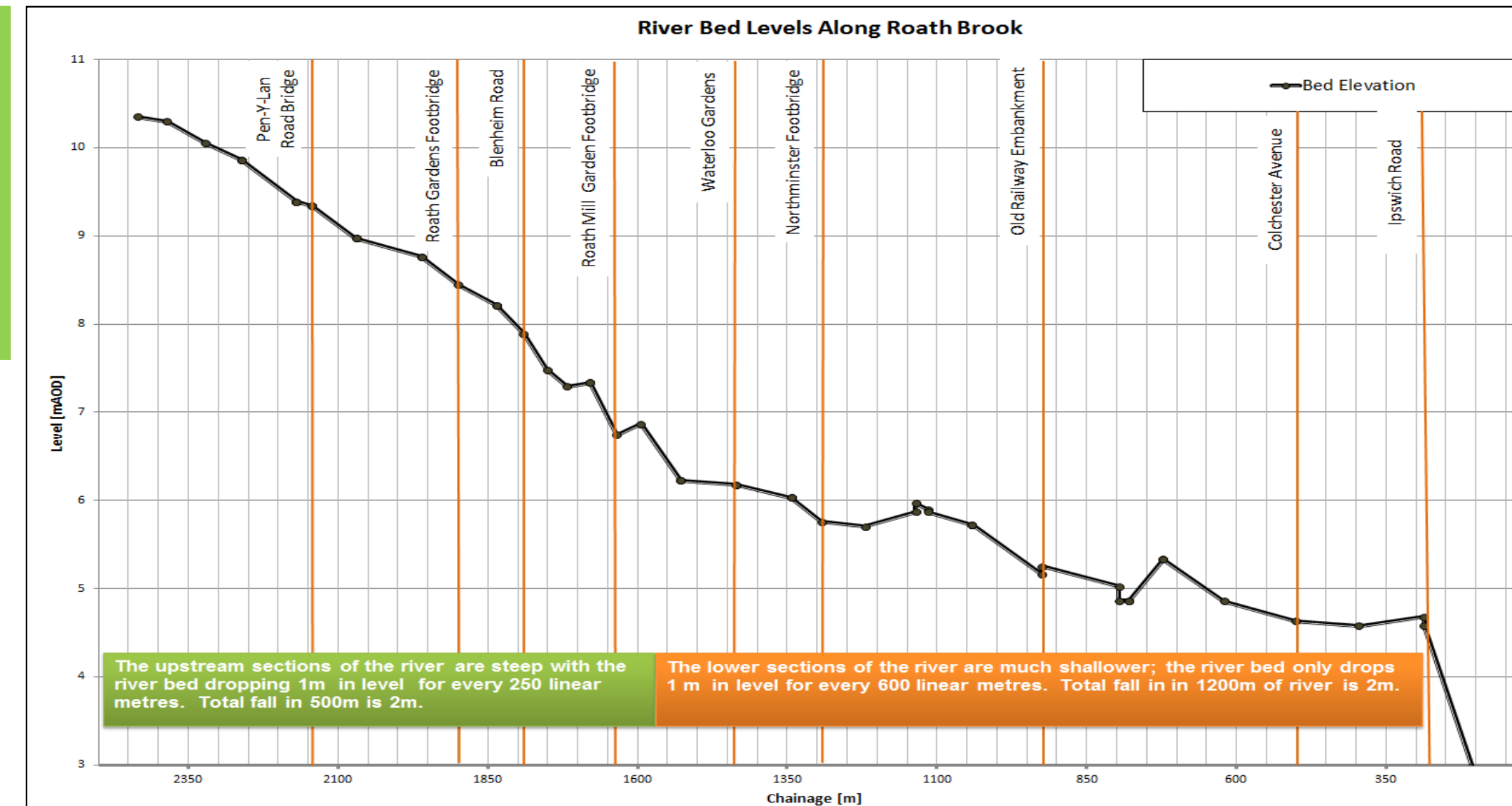
Roath ranks among the areas that are at the highest risk of flooding in Wales. Properties have been flooded by the brook on a number of occasions including significant events in 1979, 1995, 1998 and 2009.

Today some 390 homes and 50 businesses in the area are at a medium risk of flooding caused by high river flows, high tides and combinations of both.

The area around Waterloo Gardens is at an especially significant risk of flooding due to a sudden change in the slope of the river bed.

The likelihood of flooding will only increase as the predicted effects of climate change include:

- \* A continued trend of rising sea levels
- \* More frequent, intense heavy rainfall

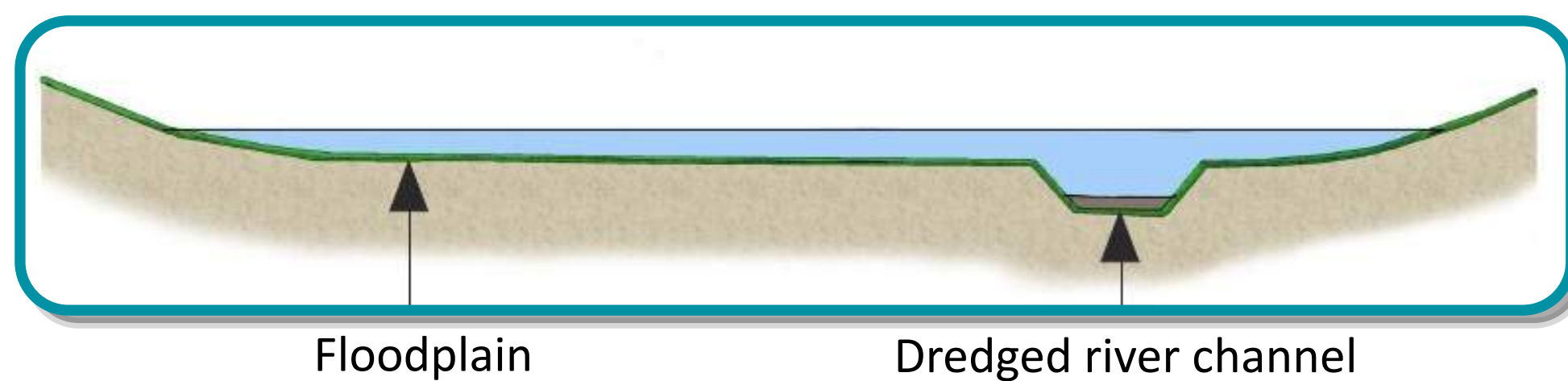


# What options have we considered?

**We have looked at a full range of approaches to reduce flood risk. Options considered were assessed their technical practicality and their impact on the area and the environment.**

## Why not dredge?

During times of flooding most of the water flows across the floodplain adjacent to the river channel. Dredging would slightly increase river capacity but not enough to reduce the flood risk in Roath or to prevent flooding in areas at risk of high tides. The brook is however to be modified in area around Roath Brook Gardens; in widening the channel here, the height of the flood defences can be reduced

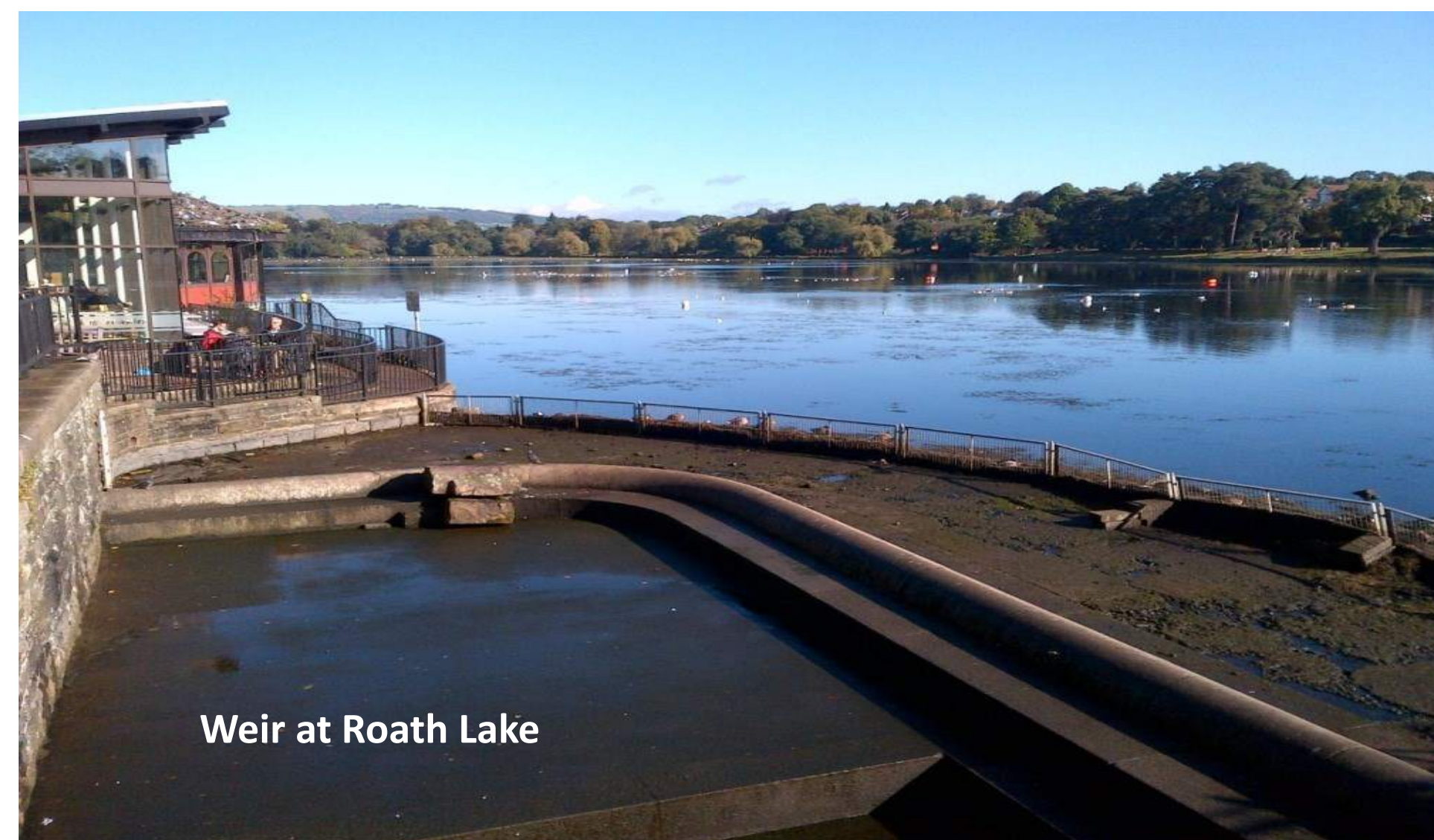


## Why not hold out the high tides?

This option would reduce the height of the flood defences from Morrison's to Sainsbury's however the defences required upstream of Waterloo Gardens would be unchanged. There would be a significant operational risk as large pumps would be needed to prevent river flows backing up.

## Can we store river flows upstream?

We considered the benefits of storing water in open spaces including St Peters RFC, Roath Recreational Grounds and in the Llanishen area but found there to be little benefit.



The Roath Lake was investigated as a means of retaining water during high river flows. This option would require major work to the lake, including strengthening the dam and raising its level to ensure public safety was maintained. Even then this would only reduce the level of the flood defences required in Waterloo Gardens by a third of a metre and have no benefit to areas at risk of high tides.

## Diversion or bypass channel?

There is insufficient space to create an adequate artificial channel or culvert.

## What about temporary defences?

Due to the speed, depth and extent of flooding, there would not be sufficient time to assemble temporary defences. The depths of flooding predicted in some locations would also exceed the heights of temporary defences.



Temporary defences in operation .  
(Environment Agency)

## Raised Flood Defences

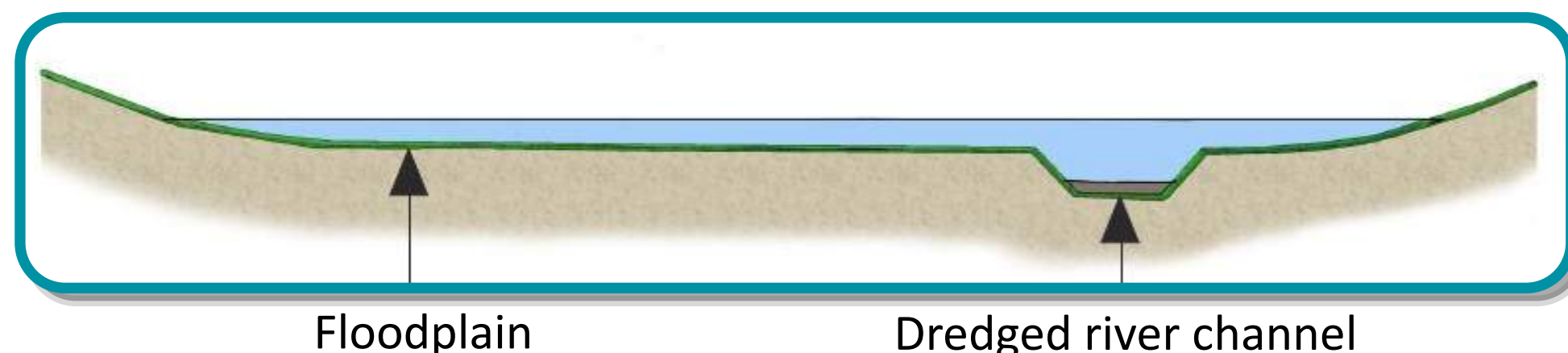
Our investigation identified that the most appropriate flood risk management approach would be to contain floodwater within the river corridor.

Sensitive designing on this scheme will see modifications to the river channel, works on the road bridges and raised embankments and flood walls in the area.

Rydym wedi edrych ar amrywiaeth lawn o ddulliau o leihau'r perygl o lifogydd. Cafodd yr opsiynau a ystyriwyd eu hasesu o ran eu hymarferoldeb technegol a'u heffaith ar yr ardal a'r amgylchedd.

## Pam ddim treillio?

Pan fydd llifogydd, bydd y rhan fwyaf o'r dŵr yn llifo ar draws y gorlifdir sydd gyferbyn â'r gwely afon. Byddai treillio yn cynyddu capasiti'r afon ychydig ond ddim digon i leihau'r perygl o lifogydd yn y Rhath nac i atal llifogydd mewn ardaloedd sydd mewn perygl o lanw uchel. Fodd bynnag, caiff y nant ei haddasu yn yr ardal o amgylch Gerddi Nant y Rhath; drwy ledaenu'r gwely yma, gellir lleihau uchder yr amddiffynfeydd rhag llifogydd.

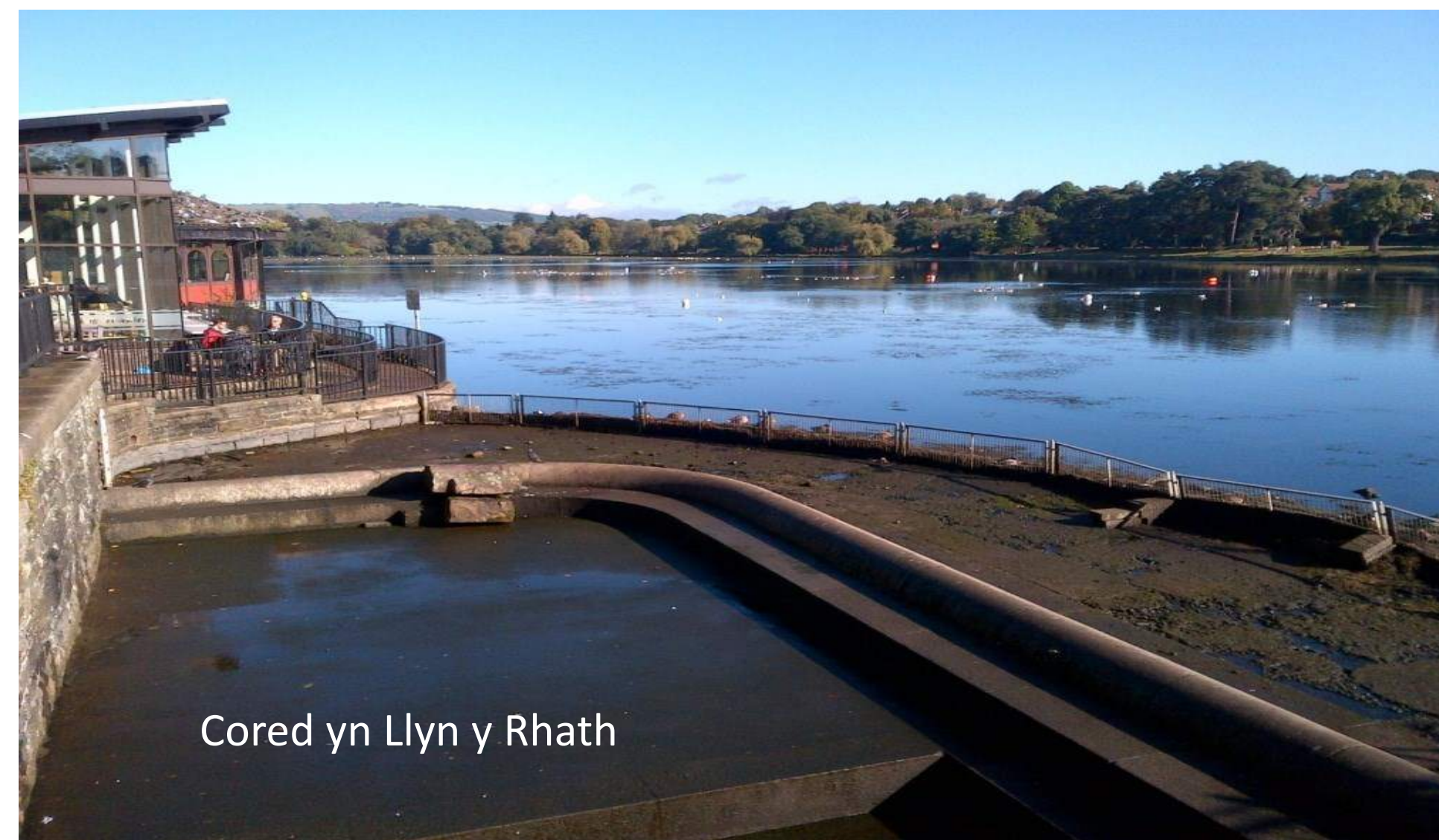


## Pam ddim gwrthsefyll y llanw uchel?

Byddai'r opsiwn hwn yn lleihau uchder yr amddiffynfeydd rhag llifogydd rhwng Morrisons a Sainsbury's ond ni fyddai'r amddiffynfeydd sydd eu hangen i fyny'r afon o Erddi Waterloo yn newid. Byddai risg weithredol sylweddol oherwydd byddai angen pypiau mawr er mwyn atal llifau afonydd rhag cronni.

## A allwn storio llifau afon i fyny'r afon?

Gwnaethom ystyried storio dŵr mewn manau agored, gan gynnwys Clwb Rygbi St Peter's, Tir Hamdden y Rhath ac yn ardal Llanisien ond cafwyd nad oedd fawr ddim budd.



Ymchwiliwyd i gadw dŵr yn Llyn y Rhath yn ystod llifau afon uchel. Byddai'r opsiwn hwn yn galw am wneud cryn dipyn o waith i'r llyn, gan gynnwys cryfhau'r argae a chodi ei lefel fel bod y cyhoedd yn ddiogel o hyd. Hyd yn oed wedyn, byddai hyn ond yn gostwng lefel yr amddiffynfeydd rhag llifogydd sydd eu hangen yng Ngerddi Waterloo draean o fetr ac ni fyddai o unrhyw fudd i ardaloedd a oedd yn wynebu perygl o lanw uchel.

## Gwriad neu sianel osgoi?

Nid oes digon o le i greu sianel na chwlfert artiffisial digonol.

## Beth am amddiffynfeydd dros dro?

O ganlyniad i gyflymder, dyfnder a graddau llifogydd, ni fyddai digon o amser i godi amddiffynfeydd dros dro. Hefyd, byddai dyfnderoedd llifogydd mewn rhai lleoliadau hefyd yn fwy nag uchder amddiffynfeydd dros dro.



Amddiffynfeydd dros dro ar waith.

(Asiantaeth yr Amgylchedd)

## Amddiffynfeydd rhag Llifogydd Uwch

Nododd ein hymchwiliad mai'r dull mwyaf priodol o reoli'r perygl o lifogydd fyddai cadw llifddwr o fewn y coridor afon.

Bydd gwaith dylunio sensitif fel rhan o'r cynllun hwn yn gweld addasiadau i'r sianel afon, gwaith ar y pontydd ffordd ac argloddiau ac argaeau uwch yn yr ardal.

# How has the design been developed?

After deciding that the best way to manage flood risk was to raise flood defences, many approaches were reviewed in order to assess how best to achieve this. The technical merit and environmental impact of each approach was assessed and combined with feedback from previous consultations

## Design Changes

Following our consultation and a detailed cost review we have refined the design. We have reduced the height of the floodwalls by up to 0.5m and reduced the length of the scheme. The project reduces the flood risk to 360 homes to the minimum requirement recognised by the insurance industry. Higher defences would significantly increase the cost of the scheme and would be unaffordable.

## Design Development

The design has been developed to balance the need for managing the flood risk in the area, and leaving a well-designed and useable public space, whilst mitigating impacts on the conservation area.

*Trees are key to the area's character*



Sandringham Road side of brook

*A 1.5m high wall would really affect visibility in the parks*



Roath Mill Gardens



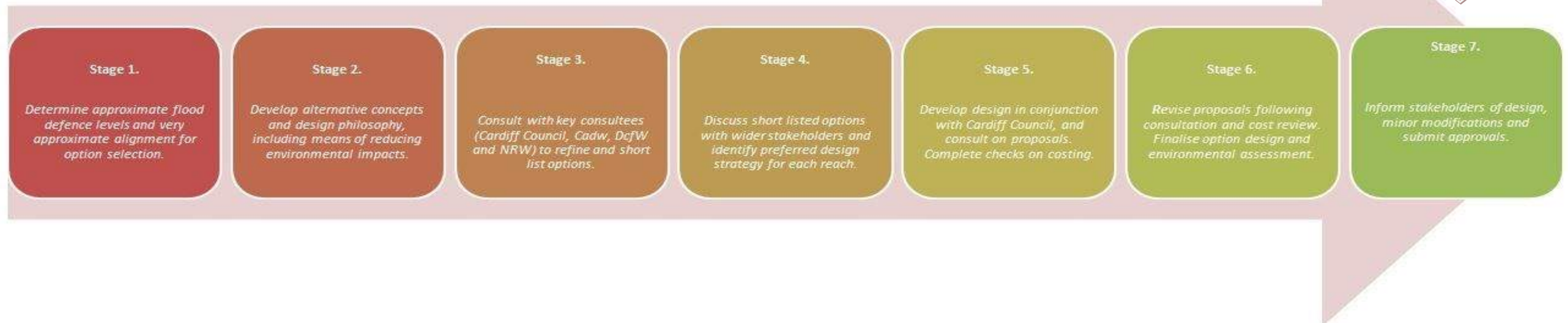
Roath Mill Gardens brook side path  
Mill Gardens

*The garden is archaeologically important*



Right hand bank of Railway Gardens

*Keep the area open*



# Sut mae'r dyluniad wedi'i ddatblygu?

Ar ôl penderfynu mai'r ffordd orau o reoli'r perygl o lifogydd oedd gwneud amddiffynfeydd rhag llifogydd yn uwch, adolygwyd sawl opsiwn er mwyn asesu'r ffordd orau o gyflawni hyn. Aseswyd rhinweddau technegol ac effaith amgylcheddol pob un, gan gyfuno hynny ag adborth o ymgynghoriadau blaenorol

## Newidiadau i'r Dyluniad

Yn dilyn ein hymgyngoriad ac adolygiad manwl o gostau rydym wedi mireinio'r dyluniad. Rydym wedi gostwng uchder yr argaeau hyd at 0.5m ac wedi gwneud y cynllun yn fyrrach. Mae'r prosiect yn lleihau'r perygl o lifogydd i 360 o gartrefi i'r hyn sy'n ofynnol a gydnabyddir gan y diwydiant yswiriant. Byddai amddiffynfeydd uwch yn cynyddu cost y cynllun yn sylweddol ac ni fyddai'n fforddiadwy.

## Datblygu'r Dyluniad

Mae'r dyluniad wedi'i ddatblygu mewn ffordd sy'n cydbwysu'r angen i reoli'r perygl o lifogydd yn yr ardal â gadael man cyhoeddus sydd wedi'i ddylunio'n dda ac y gellir ei ddefnyddio, tra'n lliniaru'r effeithiau ar yr ardal gadwraeth.

Mae coed yn greiddiol i nodweddion yr ardal

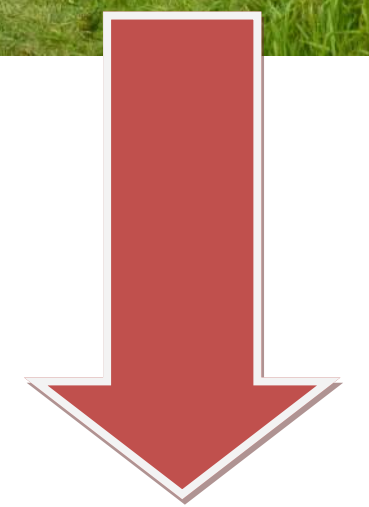
Byddai wal 1.5m o uchder yn cael effaith wirioneddol ar weladwydd yn y parciau



Mae'r ardd yn archeolegol bwysig



Cadw'r ardal yn agored



### Cam 1

Pennu lefelau bras amddiffynfeydd rhag llifogydd ac aliniad bras iawn wrth ddewis opsiwn.

### Cam 2

Datblygu cysyniadau amgen ac athroniaeth ddylunio, gan gynnwys dull o leihau'r effaith ar yr amgylchedd.

### Cam 3

Cysylltu ag ymgynghoreion allweddol (Cyngor Caerdydd, Cadw, DefW a CNC) er mwyn mireinio opsiynau a llunio rhestr fer.

### Cam 4

Trafod yr opsiynau sydd ar y rhestr fer gyda rhanddeiliaid ehangach a nodi'r dewis strategaeth ddylunio ar gyfer pob un.

### Cam 5

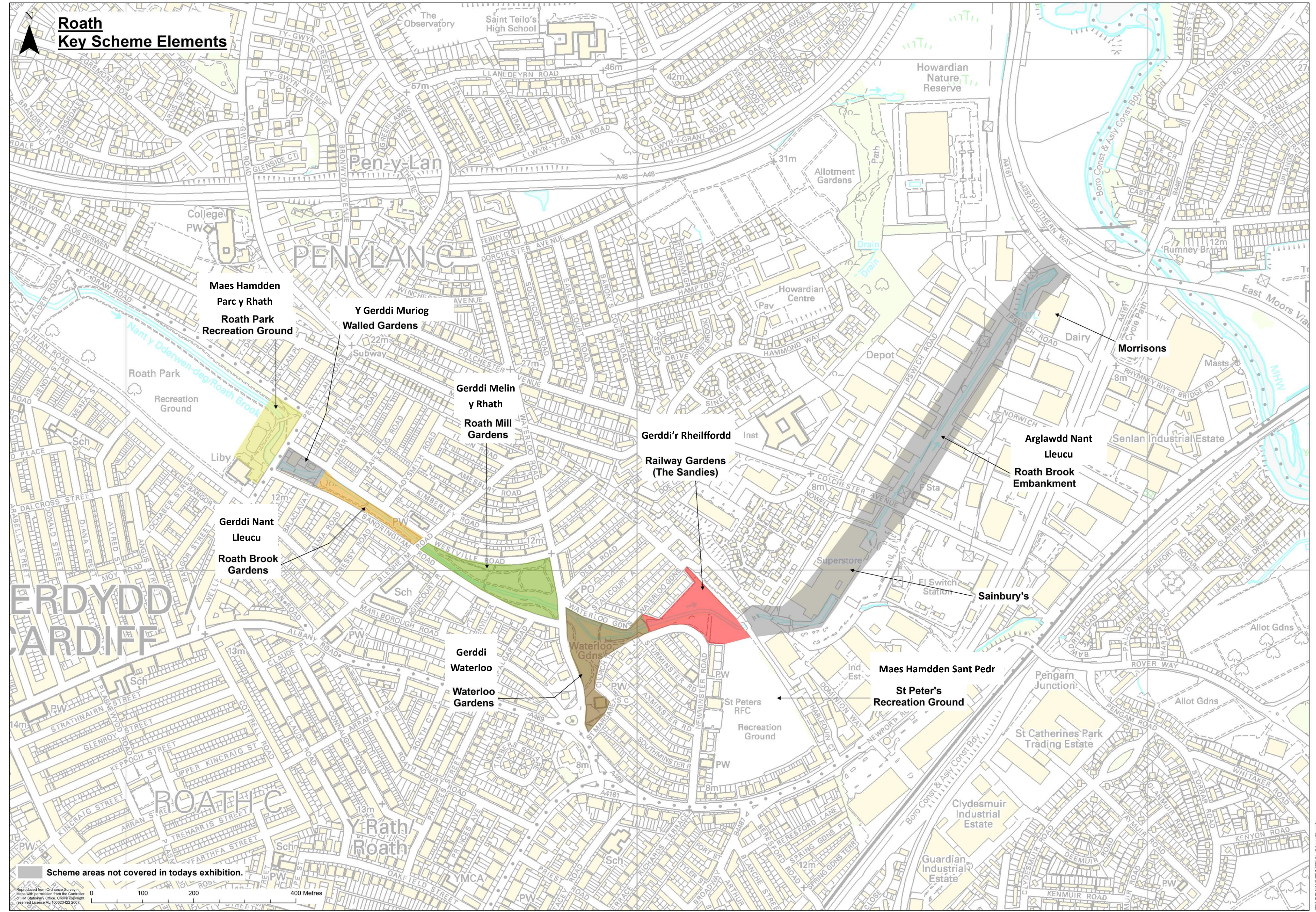
Datblygu'r dyluniad ar y cyd â Chyngor Caerdydd, ac ymgynghori ar y cynigion. Cwblhau'r gwaith o archwilio costau.

### Cam 6

Diwygio cynigion yn dilyn ymgynghoriad ac adolygiad o gostau. Llunio dyluniad terfynol opsiynau a'r asesiad amgylcheddol.

### Cam 7

Hysbysu rhanddeiliaid am y dyluniad, mân addasiadau a chyflwyno'r hyn a gymeradwywyd..





## The Area

The Walled Gardens is formed from a group of residential properties at the junctions where both Sandringham Road and Westville Walk meet with Pen-Y-Lan Road. The perimeter of this area is bounded by a stone wall which is constructed across the river

## Our Proposal

The depth of flooding predicted in this area is low; we intend to utilise the existing walls to provide flood protection by strengthening and repairing them. Where this is not possible we will offer residents individual property protection



# Roath Brook Gardens Gerddi Nant Lleucu



## The Area

The Roath Brook Gardens are well used by locals and visitors seeking a tree lined walk.

Key characteristics of the Roath Brook Gardens are:

- Iron railings forming the main boundary to the park ;
- Natural stone walls to the walled gardens; and
- Mature trees providing height, structure, form and seasonal interest.

The Roath Brook Gardens are part of a key pedestrian thoroughfare between Blenheim Road and Pen-Y-Lan Road

## Objective:

The design of the scheme has been developed in order to achieve the following key features:

- The tree lined walk through the park is maintained;
- The flood defences should be considered to be an integral part of the park;
- The design should avoid partitioning the park; and
- The design shall use the existing trees as a key remaining feature.



The existing brook side path



Footbridge within Roath Brook Gardens and hand railing



Existing views of Roath Brook Gardens



Trees are an important feature



# Roath Brook Gardens Gerddi Nant Lleucu

## Proposals

The scheme involves flattening the slopes of the channel at both the start and end of the Gardens in addition to the construction of a small raised embankment. Though this will result in the loss of 25 trees along the edge of the river it will, however, significantly reduce the height of the flood defences required.

The flattened slopes will provide views into the channel which were previously restricted by the steep banks and the lowered height of the flood defences required will also allow for better views across the Gardens. Existing trees are to be encompassed within the design as a key remaining feature.

## Cynigion

Mae'r cynllun yn cynnwys gwneud llethrau'r sianel yn wastad ar dechrau ac ar ddiwedd y Gerddi, yn ogystal â chodi arglawdd uwch bach. Er y bydd hyn yn arwain at golli 25 o goed ar hyd ymyl yr afon, bydd yn golygu bod angen amddiffynfeydd rhag llifogydd â chryn dipyn yn llai o uchder.

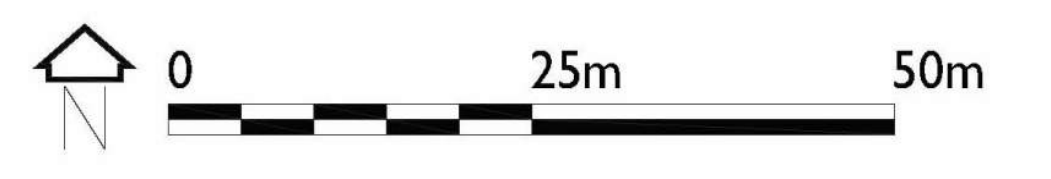


# Roath Brook Gardens

## Gerddi Nant Lleucu



- |  |   |   |
|--|---|---|
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|  | Removed trees - trunk locations   | Coed a dynnir - lleoliadau boncyffion   |
|  | Proposed trees  | Coed arfaethedig  |
|  | Proposed flood wall - stone and brick cladding  | Argae arfaethedig - cladin cerrig a brics   |
|  | Proposed flood wall - brick cladding  | Argae arfaethedig - cladin brics  |
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|  | Water Framework Directive (WFD) Enhancements - see summary  |   |



# Roath Brook Gardens Ngerddi Nant Lleucu

## Construction Impacts

The Roath Brook Gardens construction works will be completed towards the end of the overall scheme and will begin simultaneously with works in Roath Mill Gardens.

To safely build within the area we shall need to close a single lane on Sandringham Road to allow for construction access. We estimate that construction will take around 3 months to complete.

Activity	2016 (Months)												2017 (Months)											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Mobilisation and Preparatory Works									■				■	■										
Walled Gardens																			■	■	■			
Roath Brook Gardens																			■	■	■			
Roath Mill Gardens																			■	■	■			
Waterloo Gardens (inc Downstream of Roath Mill Gardens)										■	■	■	■	■	■	■	■							
Railway Gardens									■	■	■	■	■											
Sainsbury's																			■	■	■			
Roath Brook Embankment & Morrisons															■	■	■	■	■					
Waterloo Road Bridge											■	■	■	■	■	■	■							
Re-instatement works												■	■	■	■	■	■	■	■	■	■	■	■	
De-mobilise																							■	



## Effeithiau Gwaith Adeiladu

Caiff gwaith adeiladu Gerddi Nant y Rhath ei gwblhau tua diwedd y cynllun cyffredinol a bydd yn dechrau ar yr un pryd â gwaith yng Ngerddi Melin y Rhath.

Er mwyn sicrhau bod y gwaith adeiladu yn cael ei wneud yn ddiogel yn yr ardal, bydd angen i ni gau un lôn ar Sandringham Road fel bod mynediad adeiladu. Disgwylwn i'r gwaith adeiladu gymryd tua thri mis i'w gwblhau.

# Roath Mill Gardens Gerddi Melin y Rhath



## Objective

The design of the scheme has been developed in order to achieve the following key features:

- Retaining the long linear group of trees present along the south bank;
- Mitigate impacts on Registered Park and Gardens and Conservation Area;
- Maintain and improve the viewing points near Waterloo Road Bridge ;
- Facing should be sympathetic to adjacent structures;
- Provide additional access point to the Gardens from Waterloo Road; and
- Retain key trees and maintain space



Several trees are of cultural significance in the Gardens



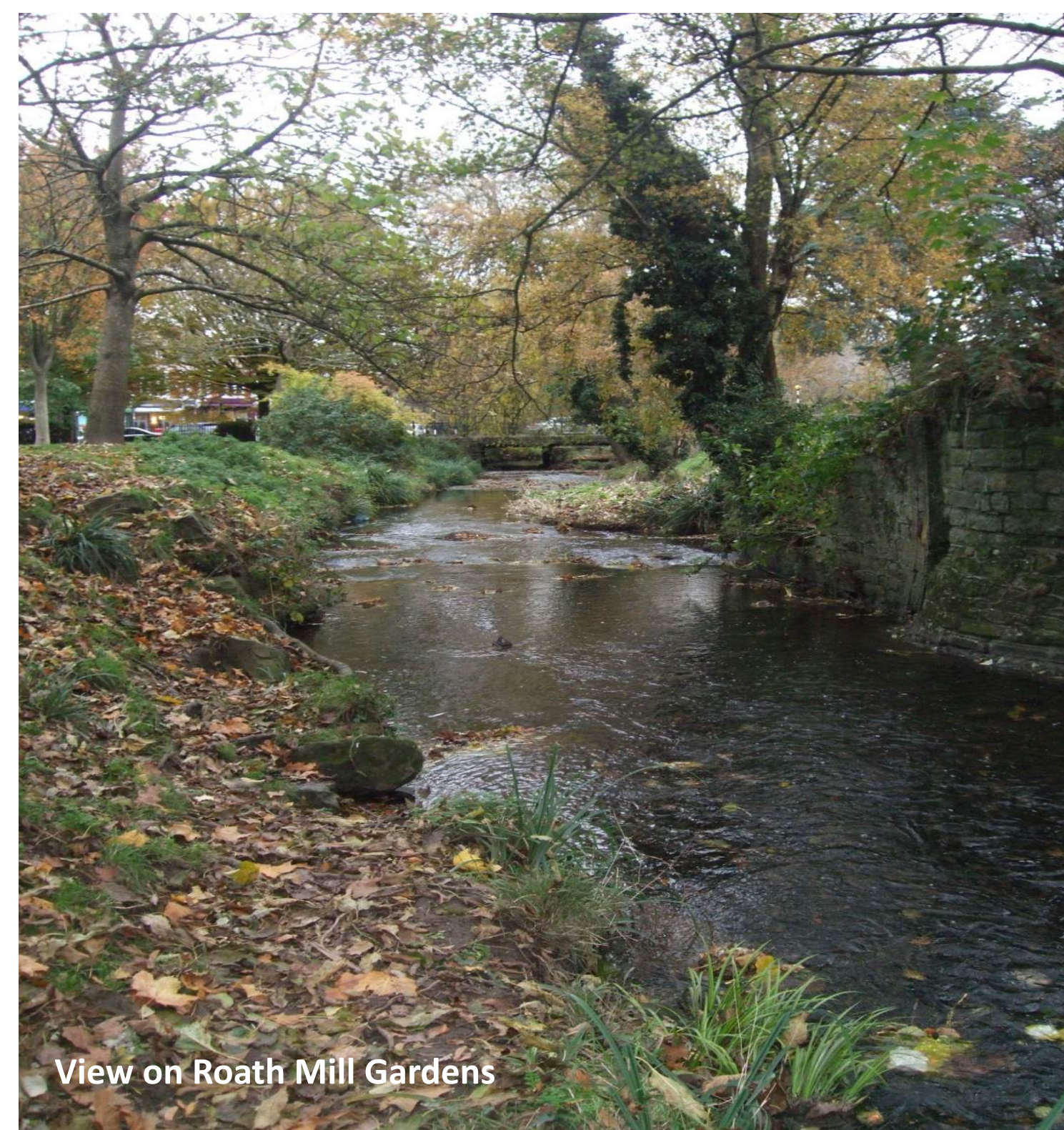
View on Roath Mill Gardens

## The Area

Roath Mill Gardens is a grade II listed park and is historically a very important area. Remnants of the former mill are visible within the brook.

Key characteristics of the Roath Brook Gardens include

- Iron railings enclosing the gardens; and
- Many mature trees of local significance.



View on Roath Mill Gardens



View on Roath Mill Gardens



Iron railings enclosing the gardens

# Roath Mill Gardens Gerddi Melin y Rhath

## Proposals

### Downstream Blenheim Road

- Re-profiling 150m of the northern bank of Roath Brook to a shallower gradient;
- Removal of 16 trees and planting of 11 new trees; and
- Construction of a revised footpath within the park including localised hand railing.

### At Roath Mill Gardens

- Construction of floodwalls with a brick and stone finish, a maximum wall height of 0.75m will be adhered to;
- Re-alignment and raising of footpath along the southern bank and construction of a view point platform and benched area;
- Re-alignment and raising of the footpath along the northern bank;
- Construction of a new park footpath access from Waterloo Road; and
- Removal of 4 key trees on the southern bank of the river.  
Landscaping and planting of 5 new trees



Existing view of Roath Mill Gardens



Proposed view of Roath Mill Gardens after works



Existing view of Roath Mill Gardens



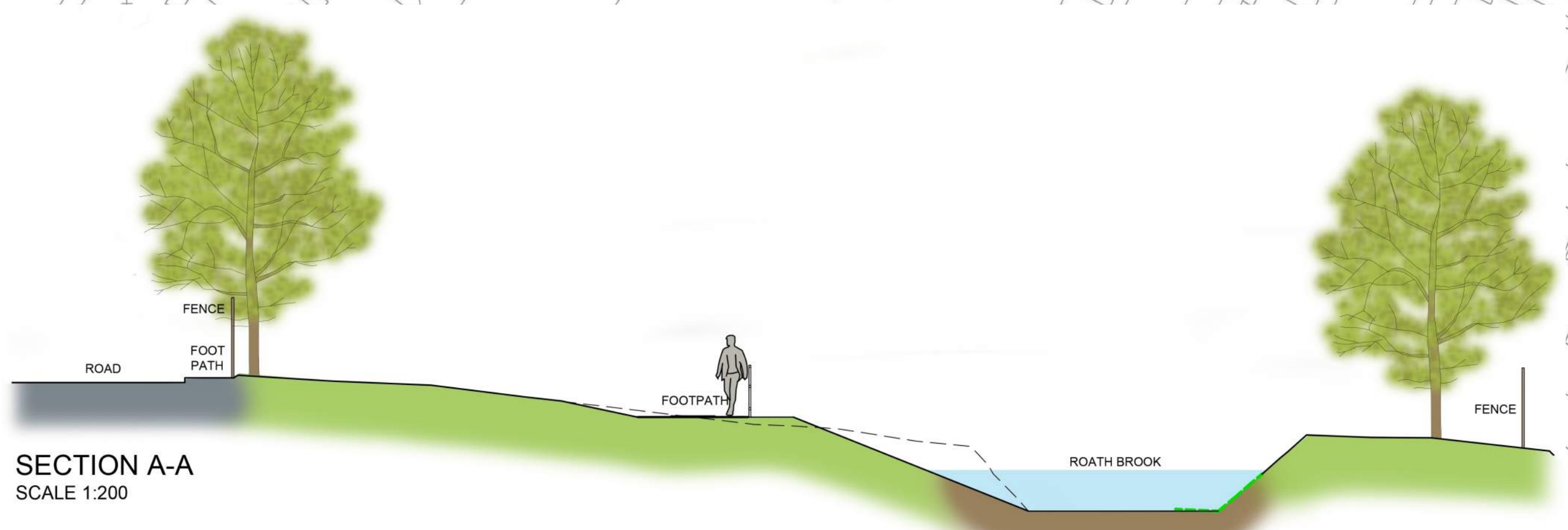
Proposed view of Roath Mill Gardens after works

# Roath Mill Gardens

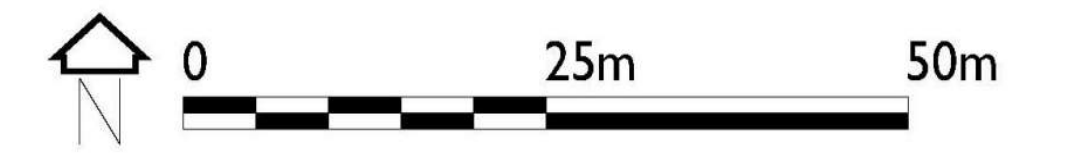
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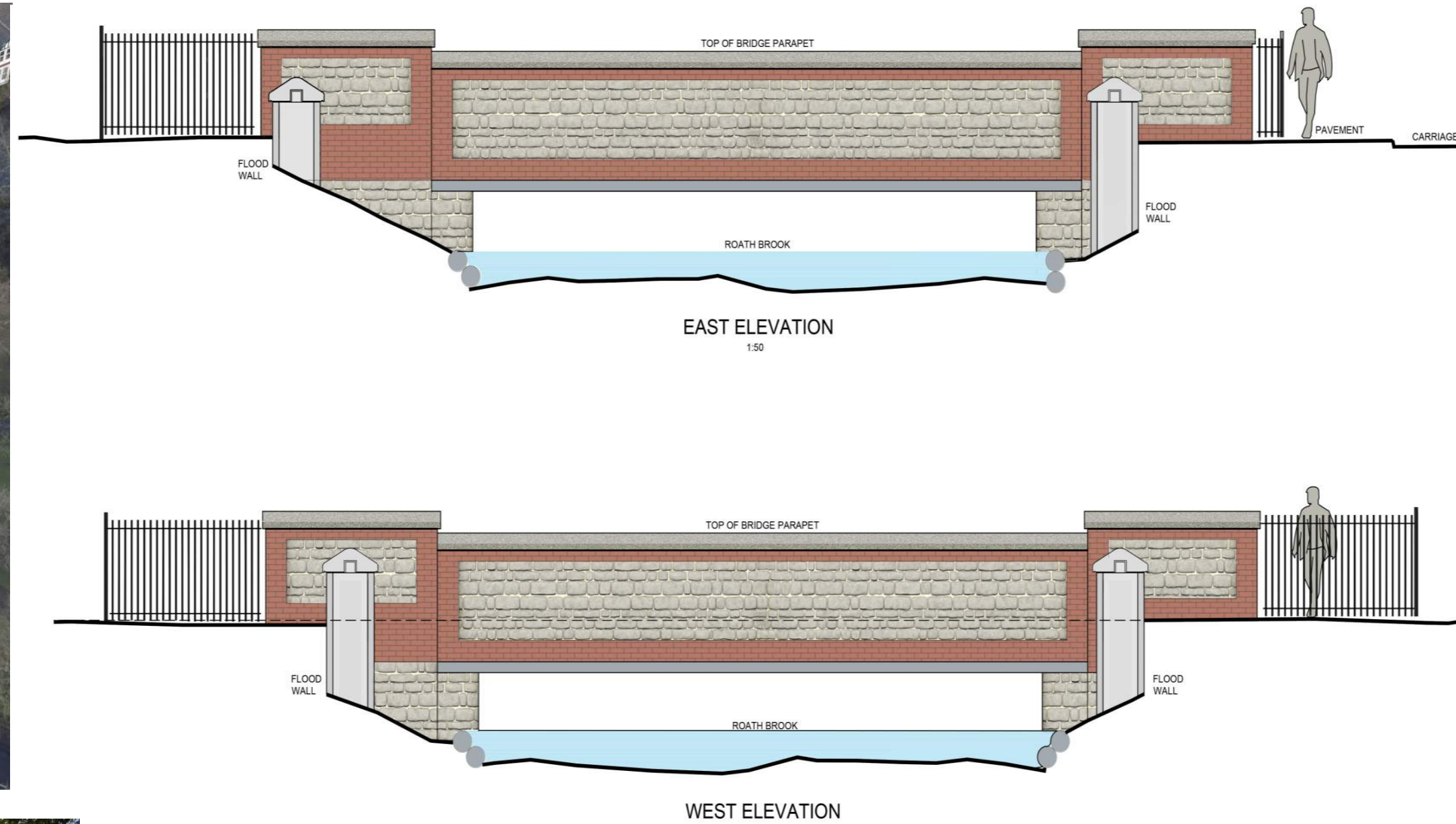


SECTION A-A  
 SCALE 1:200





# Waterloo Road Bridge Pont Waterloo Road



Existing view of Waterloo Road Bridge



Proposed view of Waterloo Road Bridge

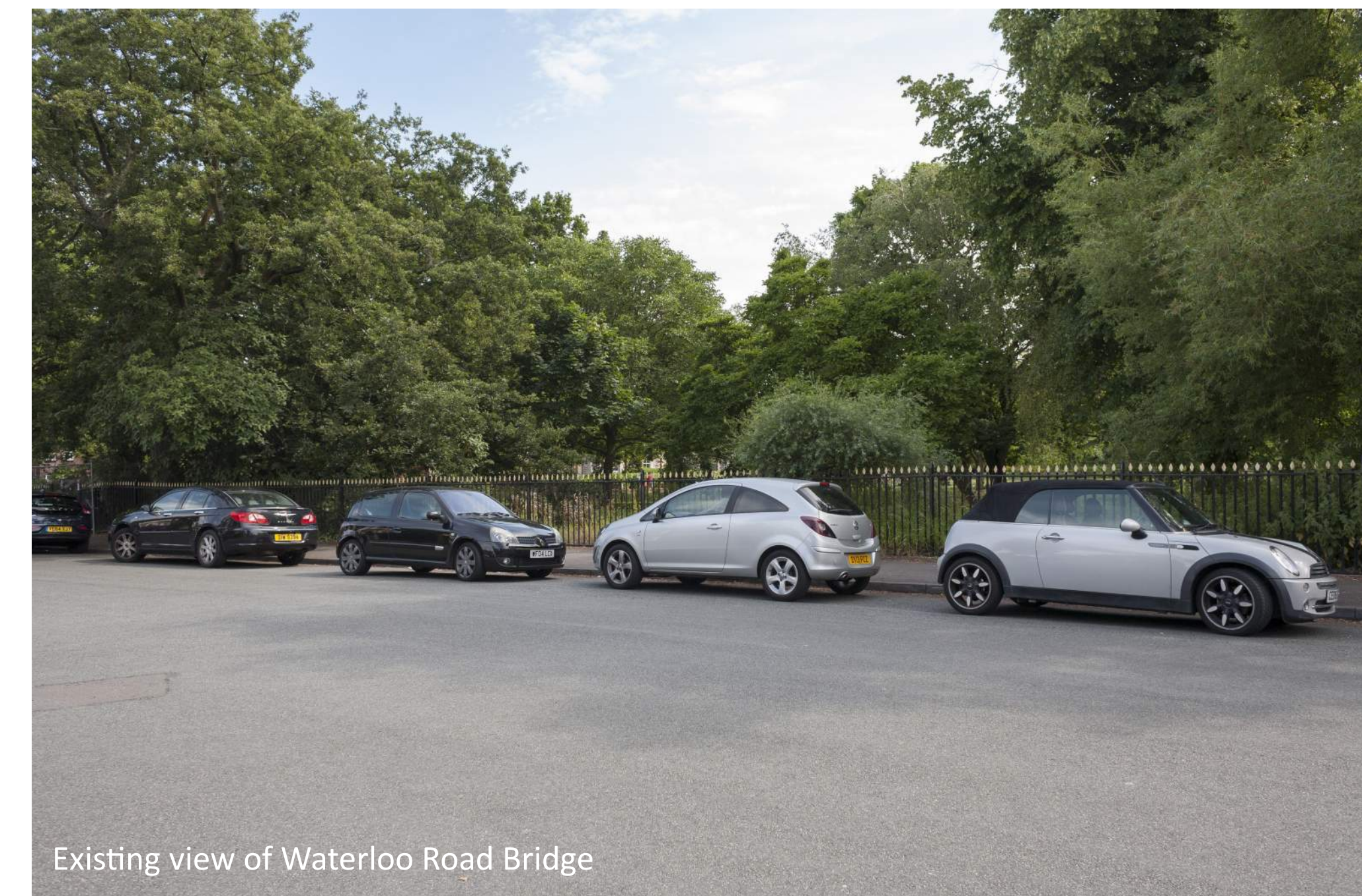
## Design

Waterloo Road Bridge is almost 100 years old and, due to its design and the predicted flood heights, will not be able to withstand the extent of flooding. The bridge cannot be modified and therefore needs replacing. The complete demolition and reconstruction of the bridge is a complex task, not only because of the type of works but also because of the number of services within the road.

The new bridge will be constructed as a single span bridge, with stone and brick faced parapets in keeping with the adjacent flood walls. Original stone work is to be reused on the bridge abutments. In order to contain flood waters in the Gardens, the height of the railings on Waterloo

Road will need to be raised. Railings removed from any part of the Gardens will be retained and passed on to Cardiff Council for reuse elsewhere.

An additional access point the Gardens on Waterloo Road is also to be incorporated into the design.



Existing view of Waterloo Road Bridge



Proposed view of Waterloo Road Bridge



# Waterloo Gardens Gerddi Waterloo



## The Area

Waterloo Gardens provides an open space, a formal planted area with seating and a wooded area on the banks of the brook. It is one of the key areas of the Gardens and has historic protection afforded to it.



Existing view of the Gardens

## Objective

The design of the scheme has been developed in order to achieve the following key features:

- Maintain external views into and out of the park ;
- Retain the open areas of lawn and ornamental borders;
- Facing should be sympathetic to adjacent structures and materials should be of a high quality specification;
- Retain key trees and open spaces within the Gardens; and
- The flood defences should enhance the aesthetics of the garden and act as a focal point to attract more visitors .



Railings around the Gardens



Lawn and ornamental border



Existing view of the footbridge in Waterloo Gardens

# Waterloo Gardens Gerddi Waterloo

## Proposals

After carefully considering the preservation of the trees around the edge of the park, a proposal has been put forwards that involves channel modification as a means of reducing flood risk. The brook is to be diverted into a single channel by widening the southern channel and infilling the northern channel.

As a further line of flood defences, a series of walls adjacent to the river is to be constructed to a height of 1.2m.

The existing footbridges in the Gardens will be removed and replaced with structures that are to be in keeping with the style of the park.

A new raised rostrum will be formed with terracing and a raised seating area that will over look the gardens.

Access to the brook will be restricted by the construction of the walls and will allow for biodiversity within the gardens to thrive.

Newminster Road is to host an access point into the park which will connect to an improved footpath network.

## Cynigion

Ar ôl ystyried yn ofalus gadw'r coed o amgylch ymyl y parc, gwnaed cynnig sy'n cynnwys addasu'r sianel fel dull o leihau'r perygl o lifogydd. Caiff y nant ei dargyfeirio'n un sianel drwy lydanu'r sianel ddeheuol a mewnlenni'r sianel ogleddol.

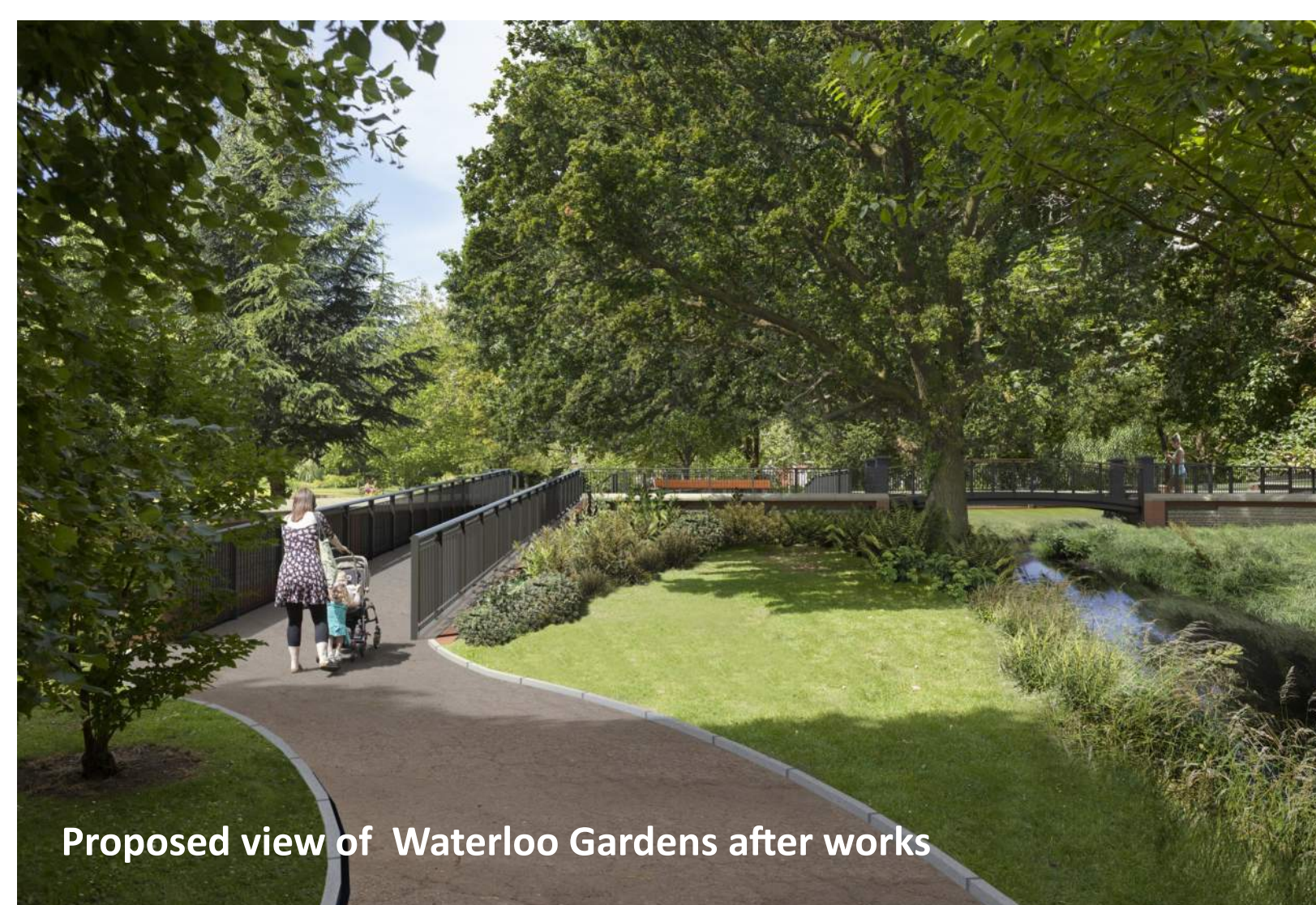
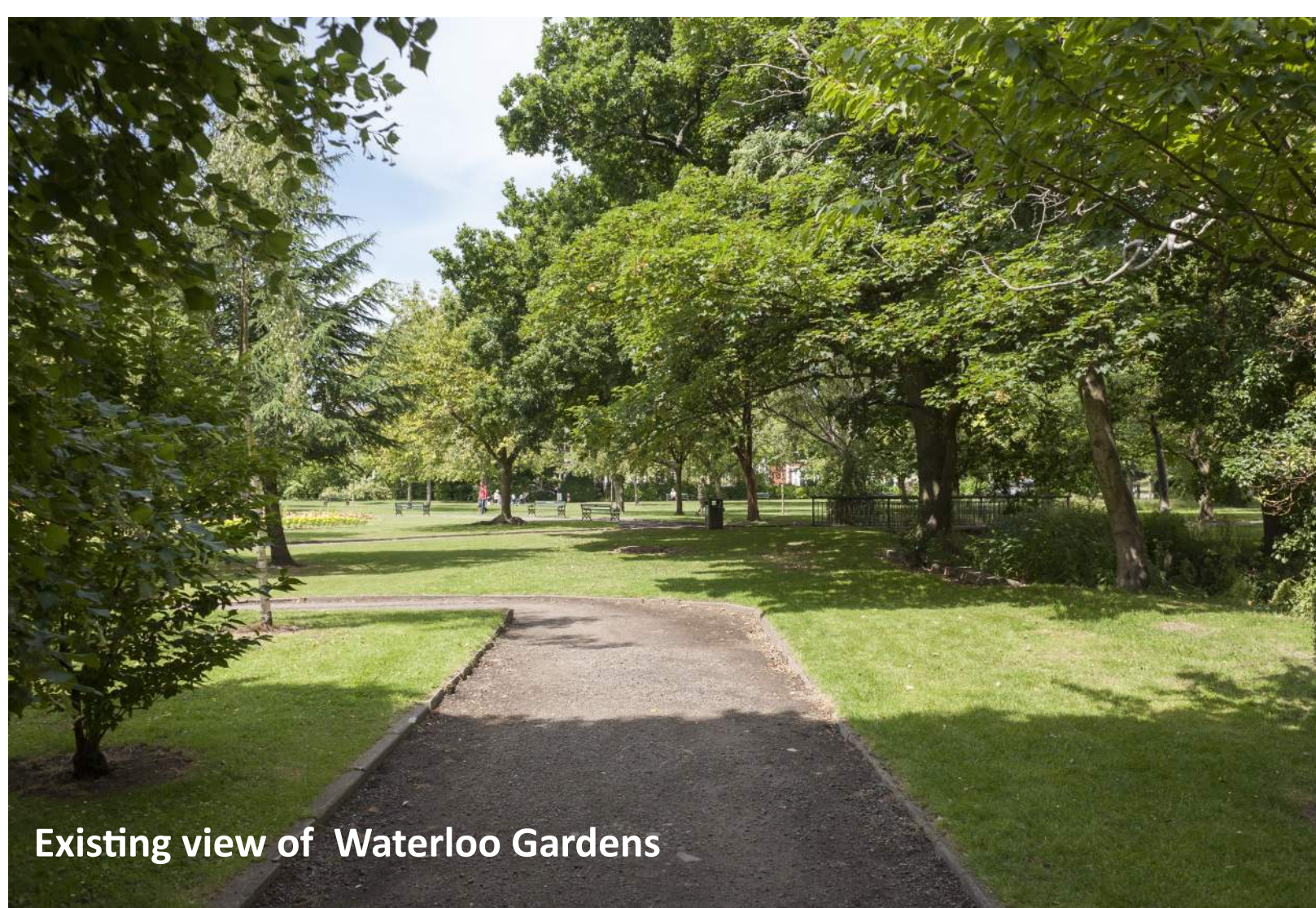
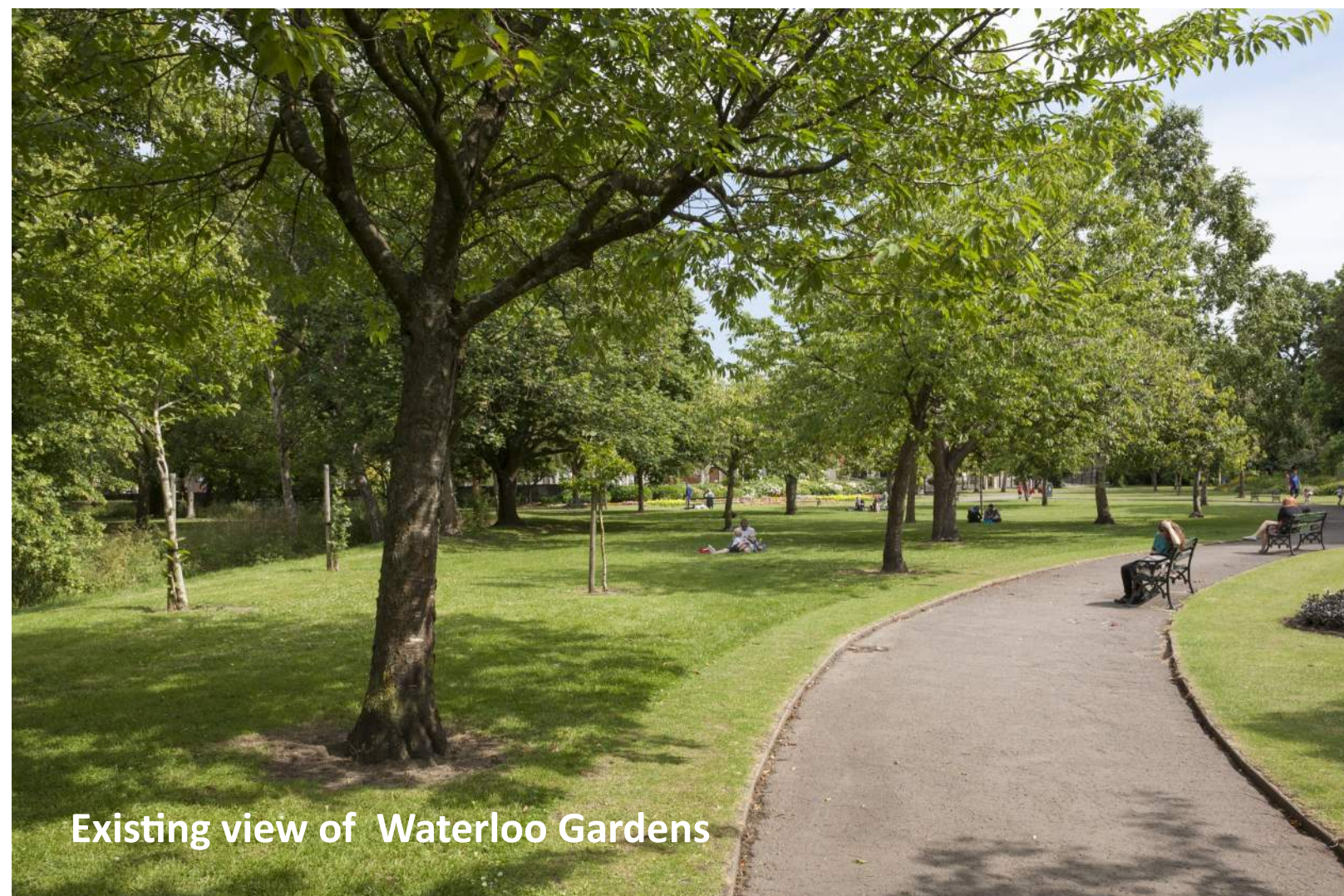
Er mwyn amddiffyn rhag llifogydd ymhellach, codir cyfres o waliau wrth ymyl yr afon i uchder o 1.2m.

Yn lle'r pomprennau presennol yn y Gerddi, gosodir strwythurau a fydd yn gweddu i'r parc.

Ffurfir rostrwm uwch newydd â theras ac ardal eistedd uwch a fydd yn edrych dros y gerddi.

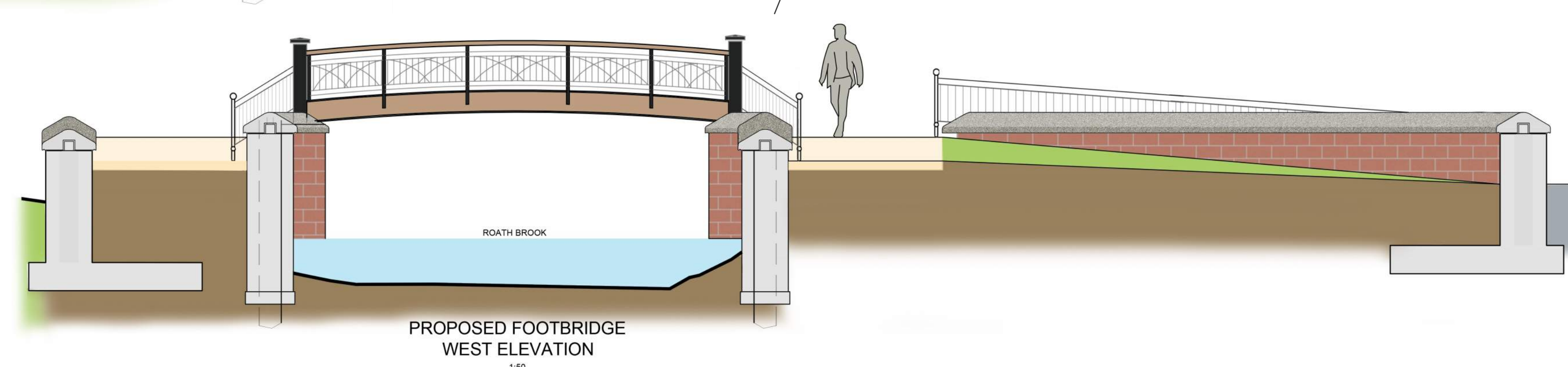
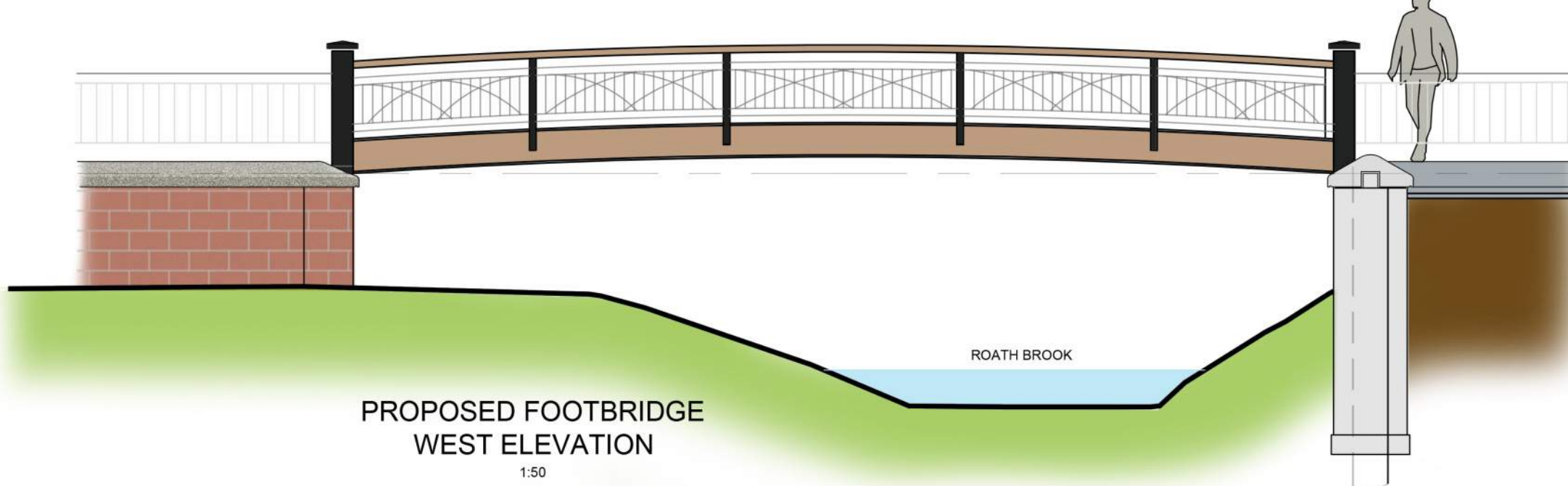
Bydd y waliau a godir yn cyfyngu ar fynediad i'r nant a bydd yn galluogi bioamrywiaeth i ffynnu yn y gerddi.

Bydd Newminster Road yn darparu pwynt mynediad i'r parc a fydd yn cysylltu â rhwydwaith llwybrau troed gwell.





- |  |   |   |
|--|---|---|
|  | Retained existing trees   | Coed presennol a gedwir   |
|  | Removed trees - trunk locations   | Coed a dynnir - lleoliadau boncyffion   |
|  | Proposed trees  | Coed arfaethedig  |
|  | Proposed flood wall - stone and brick cladding  | Argae arfaethedig - cladid cerrig a brics   |
|  | Proposed flood wall - brick cladding  | Argae arfaethedig - cladid brics  |
|  | Proposed flood wall - buried  | Argae arfaethedig—claddu  |
|  | Proposed flood wall gate - normally closed  | Llifddor arfaethedig - ar gau fel arfer   |
|  | Proposed parapet modifications  | Addasiadau parapet arfaethedig  |
|  | Proposed retaining wall   | Mur cynhalio arfaethedig  |
|  | Existing path   | Llwybr presennol  |
|  | Proposed path   | Llwybr arfaethedig  |
|  | Proposed paved area - to be designed  | Ardal bafin arfaethedig - i'w dylunio   |
|  | Proposed steps  | Grisiau arfaethedig   |
|  | Proposed bridge   | Pont arfaethedig  |
|  | Proposed handrail   | Canllaw arfaethedig   |
|  | Proposed balustrade   | Balwstrad arfaethedig   |
|  | Proposed railing - timber post and rail   | Rheiliau arfaethedig - pyst pren a rheiliau   |
|  | Proposed knee rail - timber   | Rheilffyrdd pen-glin arfaethedig—pren   |
|  | Proposed temporary fence - whilst shrubs establish  | Ffens dros do arfaethedig—er bod llwyni yn sefydlu  |
|  | Existing railing retained   | Cadw'r rheiliau presennol   |
|  | Existing flower beds  | Gwelyau blodau presennol  |
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|  | Proposed wetland planting   | Gwlyptir arfaethedig wedi'i blannu  |
|  | Proposed extent of modified river channel banks with marginal vegetation planting in selected locations | Maint arfaethedig glannau addasedig gwely'r afon gyda llystyfiant wedi'i blannu ar yr ymylon mewn rhai lleoliadau |
|  | Proposed watercourse channel  | Sianel cwrs dŵr arfaethedig   |
|  | Proposed seating  | Seddi arfaethedig   |
|  | Proposed flood embankment slopes  | Llethrau arglawdd llifogydd arfaethedig   |
|  | Water Framework Directive (WFD) Enhancements - see summary  |   |



## Construction Impacts

Waterloo Gardens is to be one of the first parts of the scheme to undergo construction. We would estimate that construction will take around 7 months to complete. During this time the Gardens will be closed.

Our contractors will be required to employ suitable methods to limit the damage to the park. Access for construction will be via Waterloo Gardens (Road) and also via Church Terrace for large pieces of equipment (for example cranes).

Once the construction works are completed the Gardens will be reinstated.

Activity	2016 (Months)												2017 (Months)											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Mobilisation and Preparatory Works																								
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Waterloo Gardens (inc Downstream of Roath Mill Gardens)																								
Railway Gardens																								
Sainsbury's																								
Roath Brook Embankment & Morrisons																								
Waterloo Road Bridge																								
Re-instatement works																								
De-mobilise																								



# Railway Gardens Gerddi'r Rheilffordd



## The Area

The Railway gardens (locally otherwise known as the Sandies or the Minsters) abut St Peters Rugby Club.

The area is an under-used part of the Gardens and consists of a large open area on the north bank of the Brook (Waterloo Gardens Road side) and two further enclosed grass areas on the south bank of the Brook (Saint Peters RFC side) .

The open space at present tends to be mostly used for informal ball games and dog walkers. It forms the largest area of grass land beyond the recreation ground.

## Objective

The design of the scheme has been developed in order to achieve the following key features:

- Improve access into the Gardens and create a path to loop around the area;
- Incorporate privacy concerns brought about by raised walls and access points;
- Retain as much open space within the park as possible to allow for its use for recreation;
- Use materials that are in keeping with the area; and
- Maintain as many trees as possible.



# Railway Gardens Gerddi'r Rheilffordd



Existing view of Railway Gardens



Proposed view of Railway Gardens after works



Existing view of Railway Gardens



Proposed view of Railway Gardens after works

## Proposals

Our proposals involve the formation of a new pedestrian access into the gardens at the Newminster Road Footbridge. This access will connect to a new network of footpaths that are to loop the field and cross the brook twice. Two new footbridges are to be installed in addition to the flood defences.

New embankments are to be constructed as defence work to reduce the flood risk for the surrounding properties. New flood walls to a height of 1.1m are also to be built on the perimeter of the area.



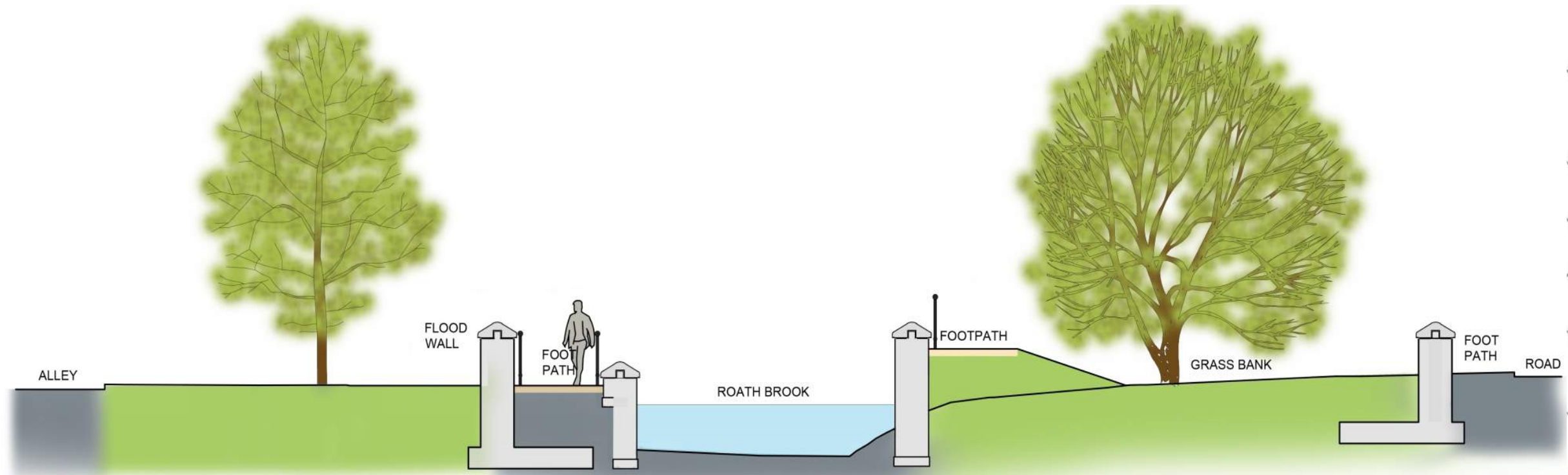
The type of footbridge being considered

## Cynigion

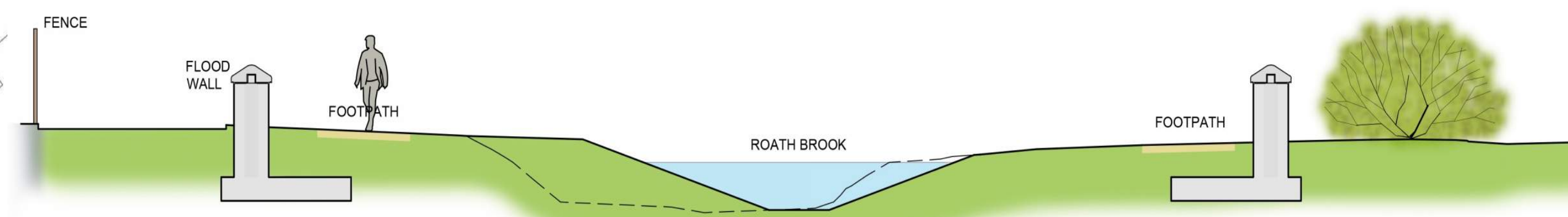
Mae ein cynigion yn cynnwys creu mynediad newydd i gerddwyr i mewn i'r gerddi wrth Bompren Newminster Road. Bydd y mynediad hwn yn cysylltu â rhwydwaith newydd o lwybrau troed a fydd yn dolennu'r cae ac yn croesi'r nant ddwywaith.

Gosodir dwy bompren newydd yn ogystal â'r amddiffynfeydd rhag llifogydd.

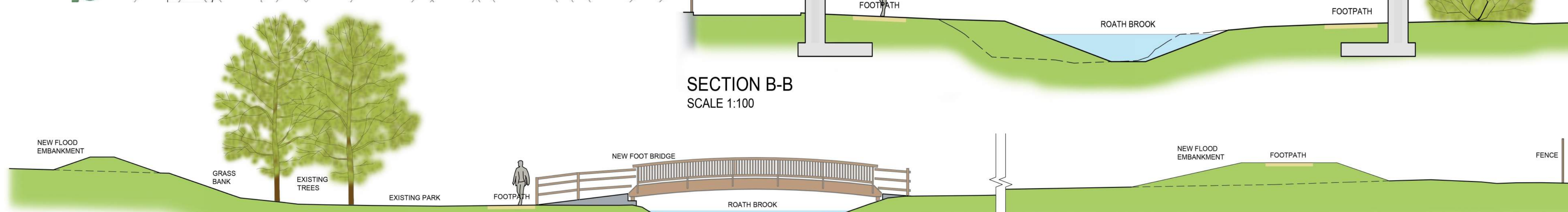
# Railway Gardens Gerddi'r Rheilffordd



SECTION A-A  
SCALE 1:100

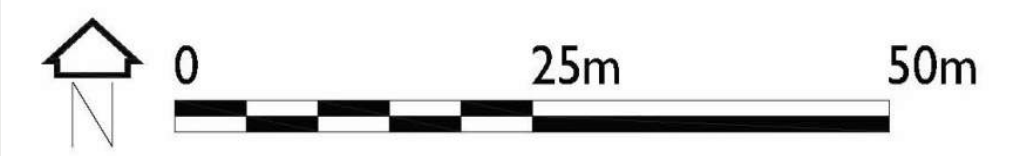


SECTION B-B  
SCALE 1:100



SECTION C-C  
SCALE 1:100

- |  |   |   |
|--|---|---|
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Activity	2016 (Months)												2017 (Months)											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Mobilisation and Preparatory Works									■				■	■										
Walled Gardens																				■	■	■		
Roath Brook Gardens																				■	■	■		
Roath Mill Gardens																				■	■			
Waterloo Gardens (inc Downstream of Roath Mill Gardens)									■	■	■	■	■	■	■	■	■							
Railway Gardens									■	■	■	■												
Sainsbury's																				■	■	■		
Roath Brook Embankment & Morrisons														■	■	■	■	■	■					
Waterloo Road Bridge											■	■	■	■	■	■	■	■						
Re-instatement works																				■	■	■	■	■
De-mobilise																								■

## Construction

Railway Gardens is the first areas to undergo construction, quickly followed by works in Waterloo Gardens.

Construction access will be via Newminster Road and pedestrian access for crossing the brook shall be maintained throughout the works

## Gwaith adeiladu

Gerddi'r Rheilffordd fydd yr ardal gyntaf lle gwneir gwaith adeiladu, a ddilynir yn fuan gan waith yng Ngerddi Waterloo.

Bydd mynediad adeiladu drwy Newminster Road a chynhelir mynediad i gerddwyr i groesi'r nant drwy gydol y





# Sainsbury's, Roath Brook Embankment and Morrisons Sainsbury's, Arglawdd Nant Lleucu a Morrisons

## Roath Brook Embankment

### Industrial areas

The Industrial Areas span from the eastern edge of Railway Gardens and follow the Roath Brook until coming to a halt at the A4161 and River Rhymney. The area includes Sainsbury's, Roath Brook Embankment and Morrisons.

### Sainsbury's



A low spot within the service yard is to be protected with a small floodwall and footpaths in the car park will be raised.



The brook runs through a narrow channel between industrial areas. The existing river bank will be raised by up to 0.4m with a combination of construction methods including piling and ground raising.

### Morrisons



A small wall will be constructed between the crash repair centre and Morrison's while the existing riverside wall will be locally raised to provide the flood defence.

# Footbridge Works Gwaith Pompren

## Existing bridges

We intend to carry out works to a number of road and footbridges in the area.



*The Roath Brook Gardens Footbridge was recently upgraded. It will not be affected by the scheme.*

*The Roath Mill Gardens Footbridge will be unaffected by the works*



*The Waterloo Gardens footbridges will be replaced with new footbridges that will be in keeping with the surrounding areas.*

## New footbridges

As well as the new footbridges in Waterloo Gardens, we are also proposing to construct a footbridge in the Railway Gardens to improve the network through the parks.

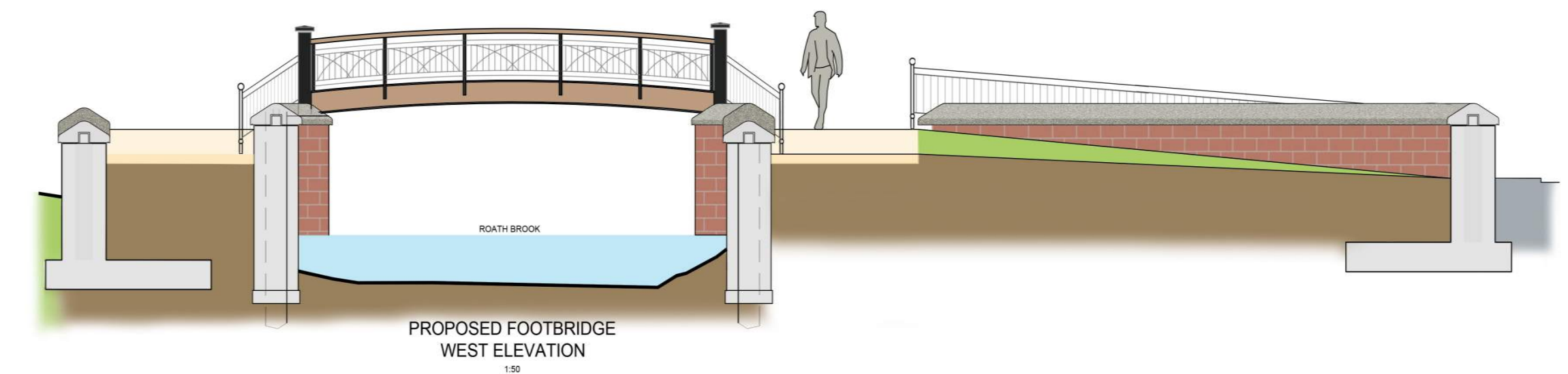


**Waterloo Gardens Footbridge:**  
Timber deck and hand rails

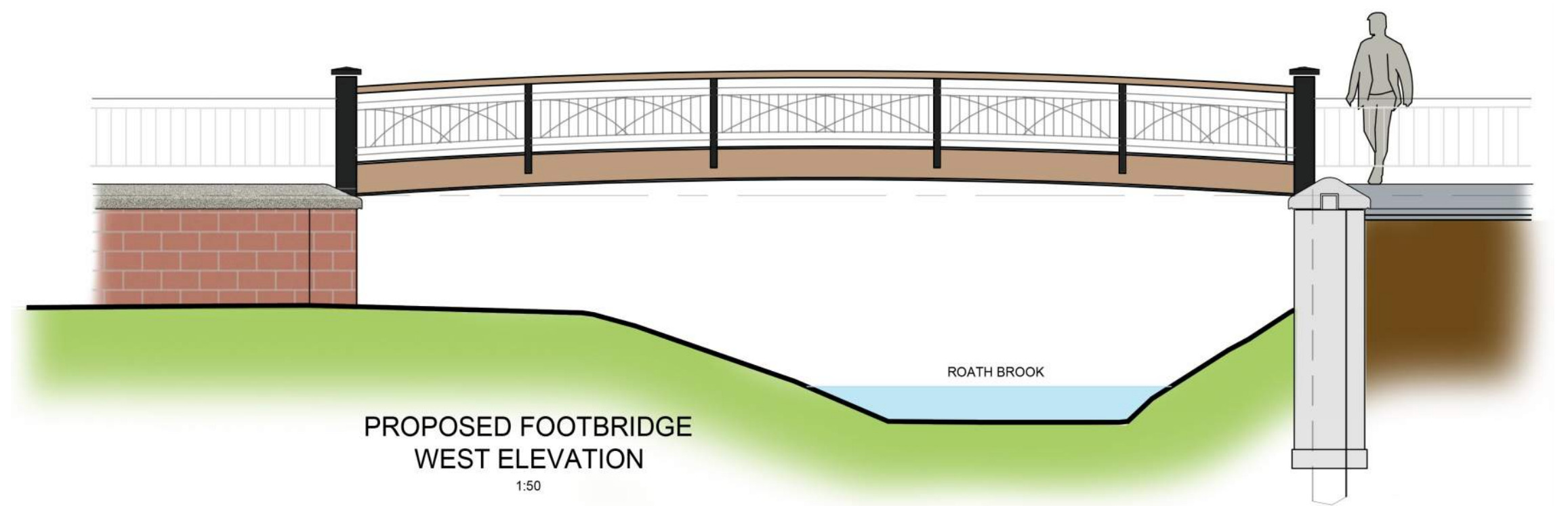


The Roath Brook Gardens Footbridge

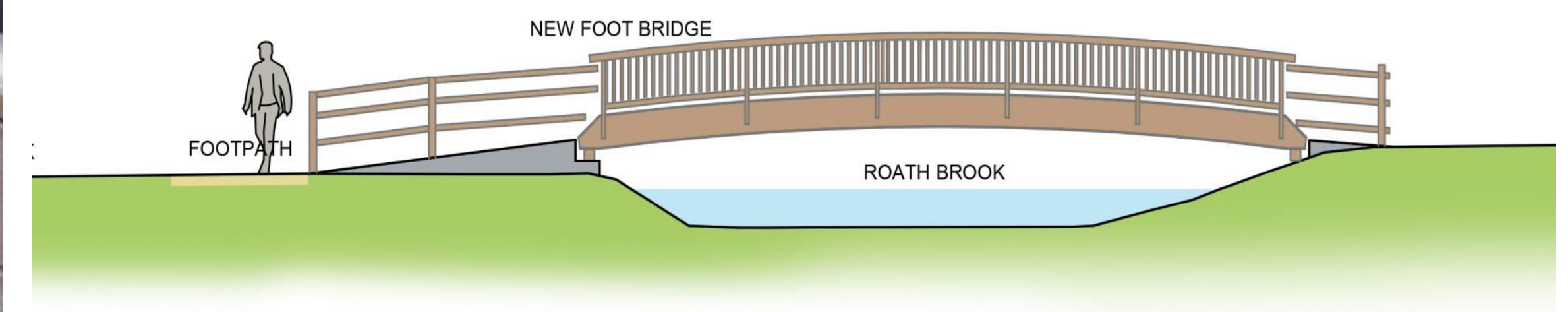
## Proposed footbridges



*Easternmost footbridge in Waterloo Gardens*



*Westernmost footbridge in Waterloo Gardens*



*Proposed new footbridge in Railway Gardens*

## The Proposals

- \* A number of trees will be lost as part of the scheme however they are to be replaced
- \* This is a selection of the proposed trees for planting
- \* Planting proposals can be seen on the scheme drawings



Dawn Redwood  
Metasecwoia



Tiebtan Cherry  
Ceirios Tibet



Japanese Maple  
Masarnen Japan



Ornamental Birch  
Bedwen Addurniadol



Norway Maple  
Masarnen Norway



Foxglove Tree  
Coeden Bysedd y Cŵn

## Y Cynigion

- \* Collir nifer o goed fel rhan o'r cynllun ond cânt eu disodli
- \* Dyma rai o'r coed y cynigir eu plannu
- \* Gellir gweld cynigion plannu ar ddarluniau'r cynllun



Sweet Gum  
Gymwydden bêr



Handkerchief Tree  
Llwyn Golomen



Judas Tree  
Pren Suddas



Tulip Tree  
Tiwlipwydden



Alder  
Gwernen



Acer Griseum



Weeping Willow  
Helygen Wylofus



White Willow  
Helygen Wen



Oak  
Derw



Lime  
Pisgwydden



Magnolia



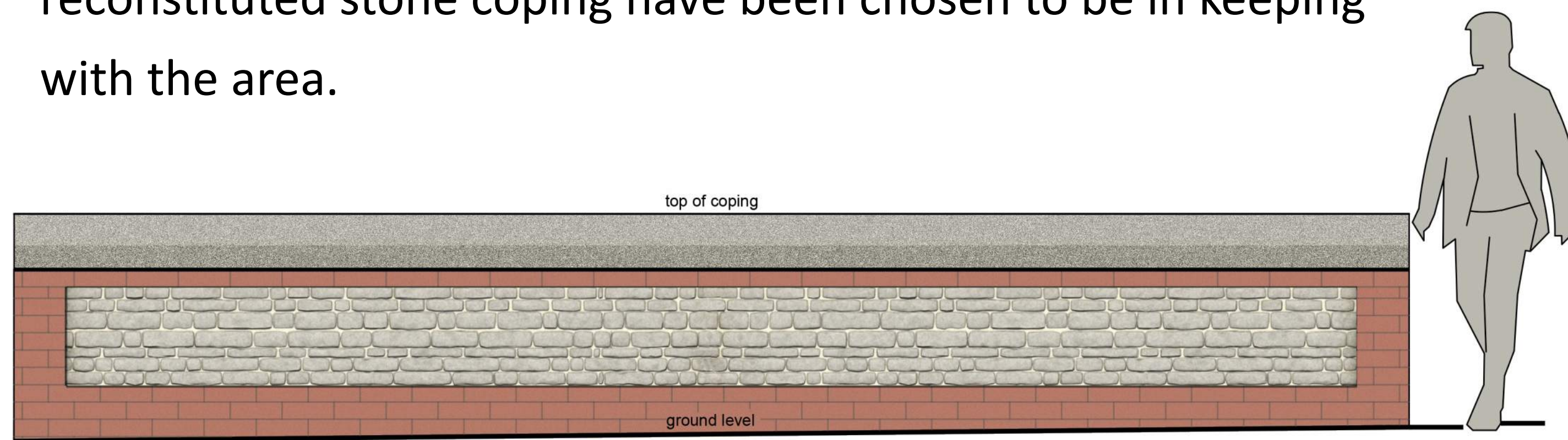
Yoshino Cherry  
Yoshino Ceirios

LOW BRICK WALLS TO ADJACENT RESIDENTIAL PROPERTIES



## Materials

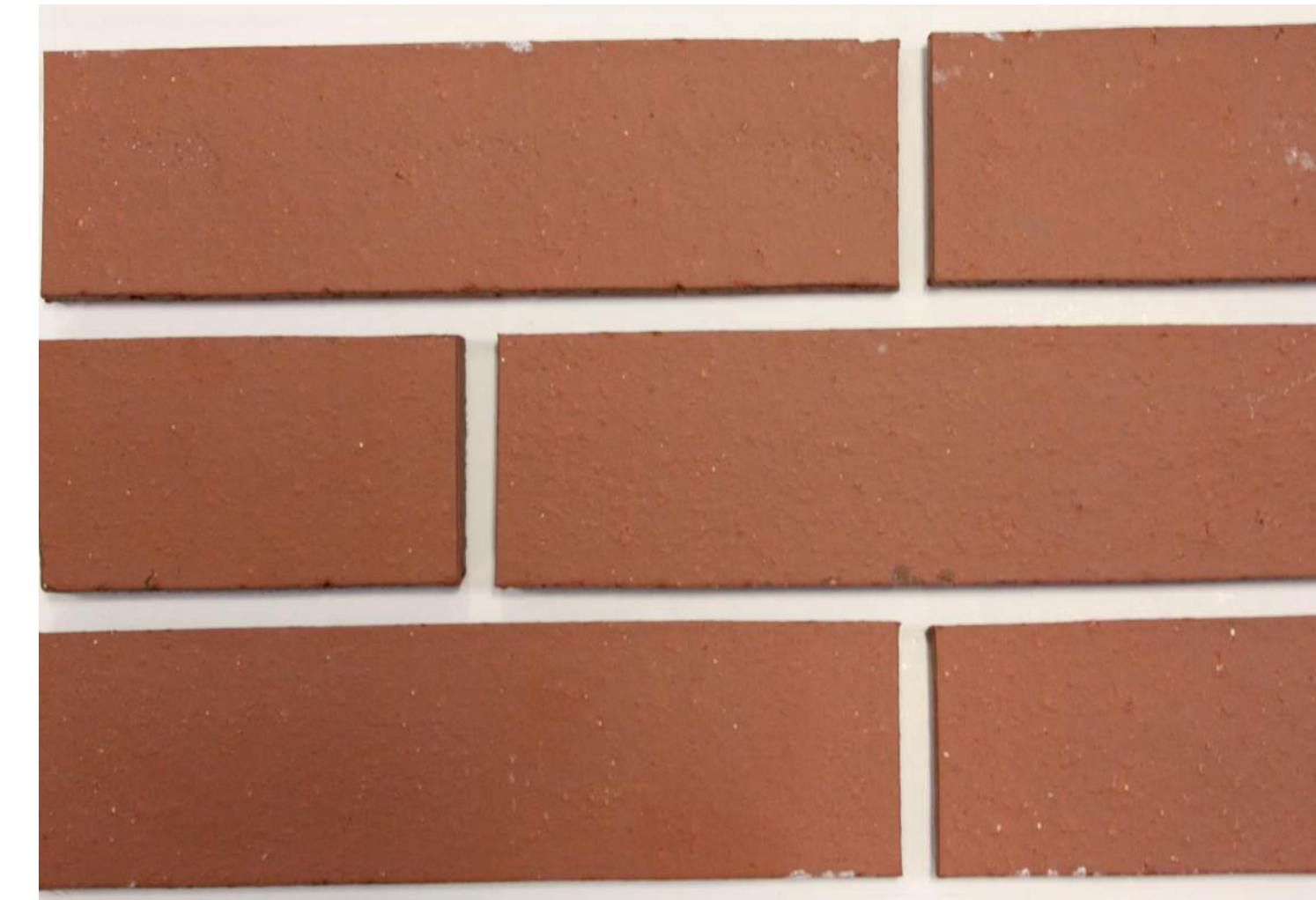
Any walls will be finished in materials which match the local surroundings; combinations of brick banding, stone panels and reconstituted stone coping have been chosen to be in keeping with the area.



typical intermediate wall panel

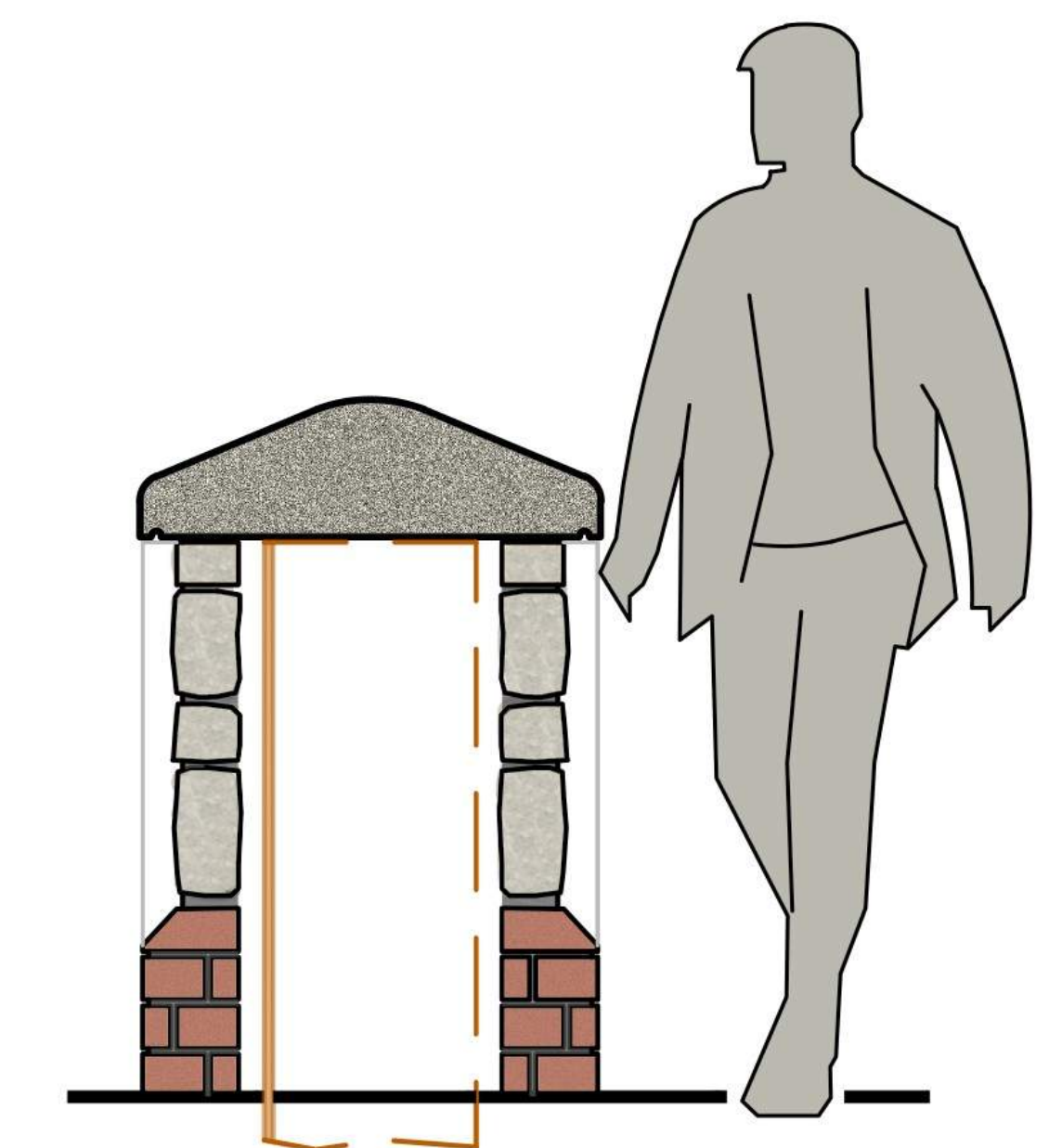


typical wall panel at flood gate



## Deunyddiau

Bydd unrhyw waliau yn cael eu gorffen mewn deunyddiau sy'n gweddu i'r ardal leol; dewiswyd cyfuniadau o fandiau bric, paneli cerrig a cherrig copa ailgyfansoddedig yn unol â'r ardal.



typical section

## Enhancement Opportunities

Below is a list of a few of the key areas we have worked on after receiving your ideas and feedback in the past. If you have any further ideas, please complete the feedback forms available.

- \* Improved access to the Railway Gardens (The Sandies and Minster Gardens) via footpaths and a new footbridge at the Railway culvert;
- \* A number of ecological enhancements have been included on the scheme including softer vegetation edges to the brook;
- \* A layout that will not create spaces that could encourage antisocial behaviour. We are considering how public areas will be used and integrated into the wider public realm; and
- \* We are working on replanting proposals that will enhance the areas aesthetics.

## Flood Arts

We are working with a local group, Cardiff Made, to incorporate art work within our proposals. These include an interpretation of the former mill in Roath Mill Gardens and the design of seating in Waterloo Gardens. All proposals will be developed in conjunction with Cardiff Council.

## Educational Works

During the coming months we will complete a seed gathering project with the local schools to collect and grow seeds from some of the trees to be removed.

## Existing Community

### Opportunities

Here are some community initiatives that are currently set up in your area:

- \* Cardiff Rivers Group is a voluntary community group that aims to address the problem of litter & debris in and around Cardiff Rivers. To get involved visit their website:



[www.cardiffrivergroup.co.uk](http://www.cardiffrivergroup.co.uk)

- \* The Community 'Park Watch' Scheme aims to address anti-social behaviour in the area
- \* The Community Flood Plan for Roath has been developed by local residents to advise other locals on what practical action to take in the event of a flood.

For more information, please contact:

029 20245251

or

[flinese@naturalresourceswales.gov.uk](mailto:flinese@naturalresourceswales.gov.uk)

## What's next?

Monthly newsletters will be circulated. The next instalment will summarise the outcome of today's event and any changes that have come as a result



Design Proposals will be submitted to Cardiff Council for a Planning Application in Autumn 2015



We will appoint a contractor to carry out the works in Summer 2016



A follow-up public exhibition will be hosted to showcase the approved plans and provide more detail on the construction phase of the scheme



Construction will begin in 2016. Phasing of the works will be implemented in order to minimise disruption

Contact us:

[Roath@NaturalResourcesWales.gov.uk](mailto:Roath@NaturalResourcesWales.gov.uk)

## Cyfleoedd Gwella

Isod ceir rhestr o rai o'r ardaloedd allweddol rydym wedi gweithio arnynt ar ôl cael eich syniadau a'ch adborth yn y gorffennol. Os oes gennych ragor o syniadau, cwblhewch y ffurflenni adborth sydd ar gael.

- \* Gwell mynediad i Erddi'r Rheilffordd (Gerddi'r 'Sandies' a 'Minster') drwy lwybrau troed a phompren newydd wrth gwlfert y Rheilffordd;
- \* Mae nifer o welliannau ecolegol wedi'u cynnwys yn y cynllun gan gynnwys ymylon llystyfiant mwy meddal i'r nant;
- \* Cynllun na fydd yn creu manau a allai annog ymddygiad gwrthgymdeithasol. Rydym yn ystyried sut y caiff ardaloedd cyhoeddus eu defnyddio a'u hintegreiddio yn nhir ehangach y cyhoedd;
- \* Rydym yn gweithio ar gynigion ailblannu a wnaiff wella estheteg yr ardal.

## Celfyddydau Llifogydd

Rydym yn gweithio gyda grŵp lleol, Cardiff Made, er mwyn ymgorffori gwaith celf yn ein cynigion. Mae hyn yn cynnwys dehongli'r hen felin yng Ngerddi Melin y Rhath a dylunio'r seddi yng Ngerddi Waterloo. Caiff yr holl gynigion eu datblygu ar y cyd â Chyngor Caerdydd.

## Gwaith Addysgol

Yn ystod y misoedd i ddod, byddwn yn cwblhau prosiect casglu hadau gyda'r ysgolion lleol er mwyn casglu a thyfu hadau o rai o'r coed a symudir.

## Cyfleoedd Cymunedol Presennol

Dyma rai mentrau cymunedol sydd ar waith yn eich ardal ar hyn o bryd:

- \* Mae Grŵp Afonydd Caerdydd yn grŵp cymunedol gwirfoddol sy'n anelu at ymdrin â'r broblem o sbwriel a gweddillion yn Afonydd Caerdydd ac o'u hamgylch. I gymryd rhan ewch i'w wefan:



[www.cardiffrivergroup.co.uk](http://www.cardiffrivergroup.co.uk)

- \* Mae'r Cynllun 'Gwylio Parciau' Cymunedol yn anelu at ymdrin ag ymddygiad gwrthgymdeithasol yn yr ardal
  - \* Mae Cynllun Llifogydd Cymunedol y Rhath wedi'i ddatblygu gan drigolion lleol er mwyn cynghori pobl leol eraill ar y camau ymarferol i'w cymryd pan fydd llifogydd.
- Am ragor o wybodaeth ffoniwch:

029 20245251

or

[flinese@naturalresourceswales.gov.uk](mailto:flinese@naturalresourceswales.gov.uk)

## Beth nesaf?

Dosberthir cylchlythyrau misol. Bydd y rhifyn nesaf yn crynhoi canlyniad digwyddiad heddiw ac unrhyw newidiadau sydd wedi deillio o hynny.

Cyflwynir Cynigion Dylunio i Gyngor Caerdydd am Gais Cynllunio yn ystod hydref 2015

Byddwn yn penodi contractwr i wneud y

Cynhelir arddangosfa gyhoeddus ddilynol i ddangos y cynlluniau a gymeradwywyd a rhoi mwy o fanylion ar gam adeiladu'r

Bydd y gwaith adeiladu yn dechrau yn 2016. Cyflawnir y gwaith fesul cam er mwyn lleihau'r tarfu

Cysylltwch â ni:

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