

Historical Impact Assessment

Margam Country Park

In this Historical impact assessment, we will be detailing the works that will be required to be undertaken with minimal impact on the historical and listed buildings within the country park. We will go through each building individually and all will be included in this document with its own subsection. We will be utilising as much infrastructure that is already in place to minimise disruption to the park and to avoid any excavations where possible. We have planned to avoid the historical monuments as much as possible, entering the park in three separate routes (2 routes have existing infrastructure).

HIA – Historical Impact Assessment

LBC – Listed Buildings Consent

Indicative method statement for our work

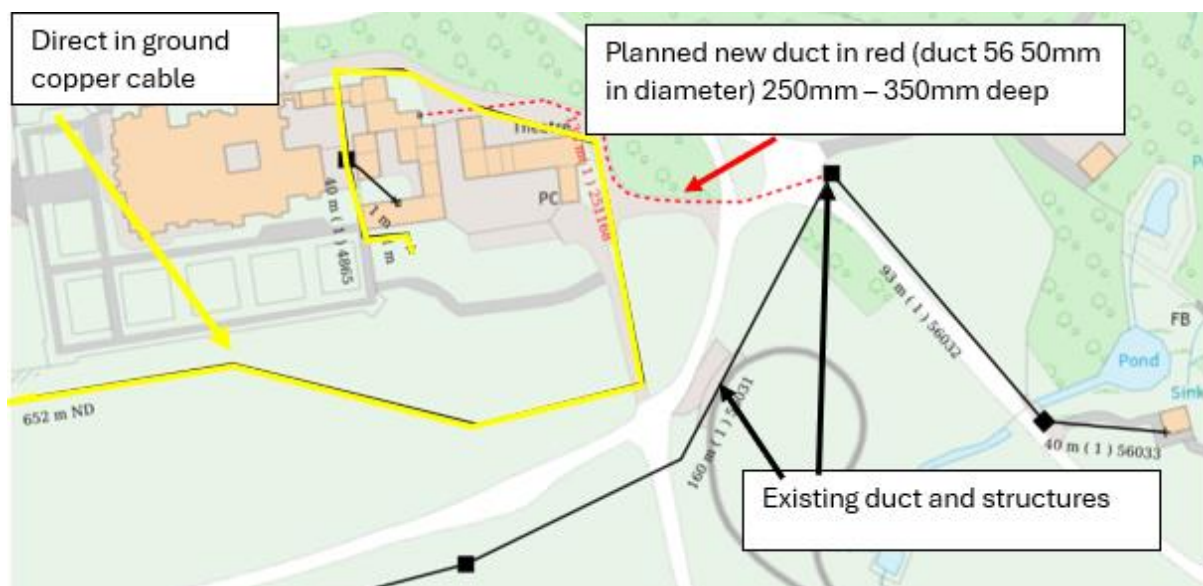
Mitigation to lower impact and risks to buildings and monuments

Regulation 5 notice

Margam Castle

Margam Castle is a listed building but has no useable infrastructure that leads directly into the castle. There is existing infrastructure just outside the castle as seen below. The route highlighted in yellow is an existing copper feed which is buried directly in the ground. The black route indicated an existing duct route towards the castle and continues to the go ape facility. The black boxes indicate underground structures. The red dotted line is the duct route that we have planned to follow the road so that we can get our cable to the castle.

Below snip indicates 142m of new duct to Margam castle



The planned duct route that we have suggested is the best route that we can take as it will avoid excavating any ground that has not been excavated before. The route will follow a



tarmac road that will lead to a hole that has been previously used for a pipe of some sort and is around 25mm in diameter (hole is already in place). The duct route will end at the base of the where the hole is in the castle wall.

We will then cable through the hole and use an alkathene pipe (or similar available product) which will be sealed with silicone when our cable is in the pipe. The alkathene pipe (or similar product) will end 15mm either side of the hole so that the hole can be patched with mortar and lye to seal the hole so that the building can be “made good” and return to an original look.

After the cabling work has been completed, we will need to install an elephant’s foot with capping. This will protect the cable from damage from the public or animals that may want to pull/chew on the cable. A picture of what the elephants foot looks like is below. This can be scuffed up and painted prior to install so that it blends into the building. This can be arranged with Margam Park and I can deliver capping ready so Margam Park have time to match the equipment with the building.



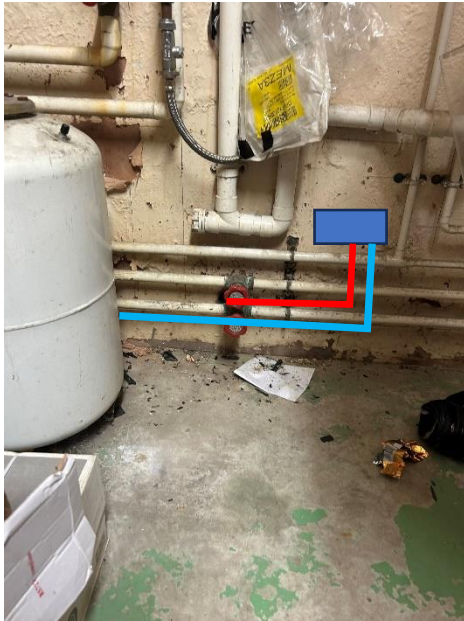
The capping will need to be fixed to the building using 4-8 1.5-inch-deep screws with wall plugs and the holes will be 6mm in diameter.



On entry into the castle as the cable enters through the hole and the alkathene (or similar product) the end of the pipe will be sealed with silicone 15mm before the end of the hole. NPT building services will then be able to seal the hole with mortar and lye so that the inside of the building can be “made good” and returned to an original state.

The entry point for the cable is just below these red valves. As the cable enters the building, we will need to terminate the cable within 2 meters of it entering the building to comply with fire regulations. We will then connect the cable onto an internal cable.

The external cable will be connected onto an internal cable using an internal CSP. We will fit the internal CSP onto the blue square pictured below. The internal CSP will be fitted to the wall using 2x 1.5-inch-deep holes with wall plugs that will be 6mm in diameter. The drilling work will be carried out using a 110V drill and not exceeding this voltage.



A picture of the internal CSP is pictured below. We are unable to put this over the hole due to the valves and pipes being in the way.

The internal cable will be secured to the wall using 3.5mm white cleats and will follow the red route as pictured below. The internal cable will be following the red route whilst the external cable will be following the blue route. Internal CSP will be placed where the blue rectangle is shown (below).



The internal cable route is continuing below along the red route and will be fixed with 3.5mm white cleats. Cable will be secured low in a safe route avoiding other services



The route continues below along the red route fixed with internal white 3.5mm cleats. Cable will be secured low and in a safe route avoiding other services. Cable will be secured behind the cupboards against the wall

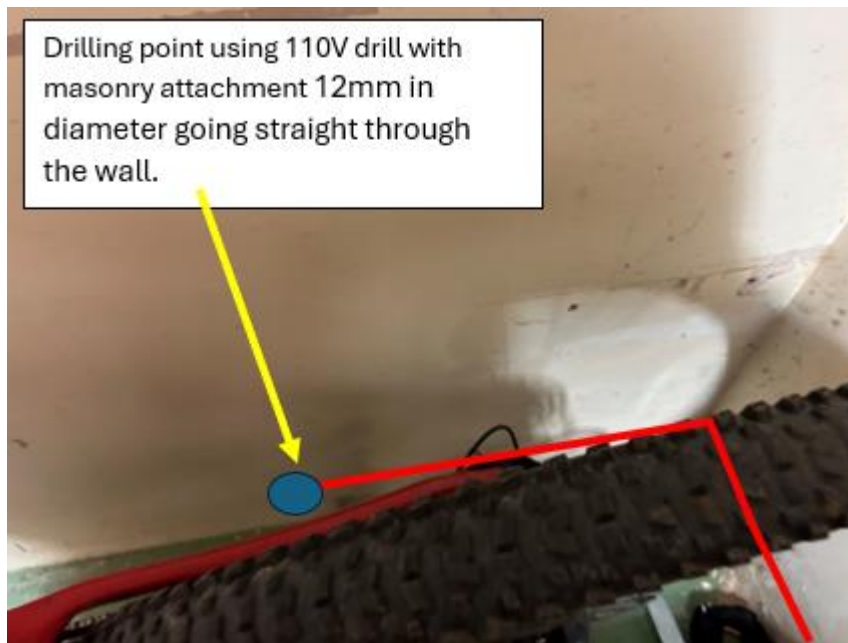


The route continues below along the red route fixed with internal white 3.5mm cleats. Cable will be secured low and in a safe route avoiding other services. Cable will be secured behind the cupboards against the wall.



The route continues below along the red route fixed with internal white 3.5mm cleats. Cable will be secured low and in a safe route avoiding other services. Cable will be secured behind the cupboards against the wall. This is where the cable will exit this room and enter

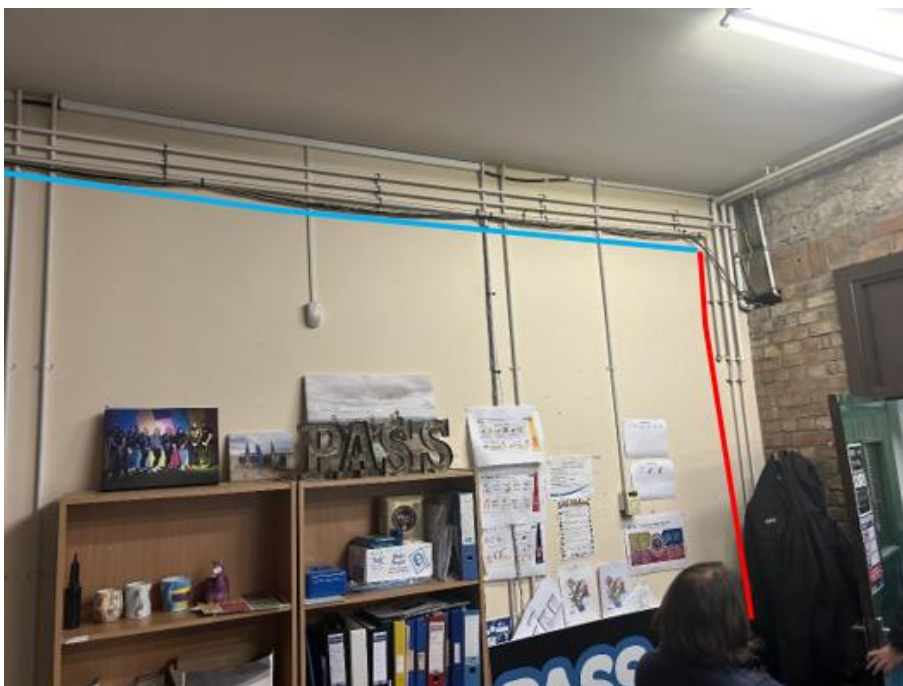
the comms room on the opposite side of this wall. I have highlighted the drilling point with a blue circle. This will be 12mm in diameter and will be drilled through to create access to the comms room. This will be placed through an Alkathene pipe and will end 10mm either side sealed with silicone. NPT building services will “make good” the hole with mortar and lye to return the hole to an original state.



The route continues below along the red route fixed with internal white 3.5mm cleats. Cable will be secured and follow the red route up the wall and will be secured in plastic trunking that will be provided by NPT IT department. Cable will be secured using white 3.5mm cleats until it meets the trunking. This is where the cable will enter this room and enter the comms room on the opposite side of this wall. I have highlighted the drilling point with a blue circle. This will be 12mm in diameter and will be drilled through to create access to the comms room. This will be placed through an Alkathene pipe and will end 10mm either side sealed with silicone. NPT building services will “make good” the hole with mortar and lye to return the hole to an original state.



The cable will then be secured in the plastic trunking which will be along the blue route. The red route will be secured with 3.5mm white cleats but if there is trunking present, we will use that instead of the cleats.



The cable will follow the blue route in trunking and the ONT will be placed directly into the comms cab and will be powered internally with a mains socket which will be inside the cab. No drilling required to secure the ONT.



Mitigation for Margam Castle

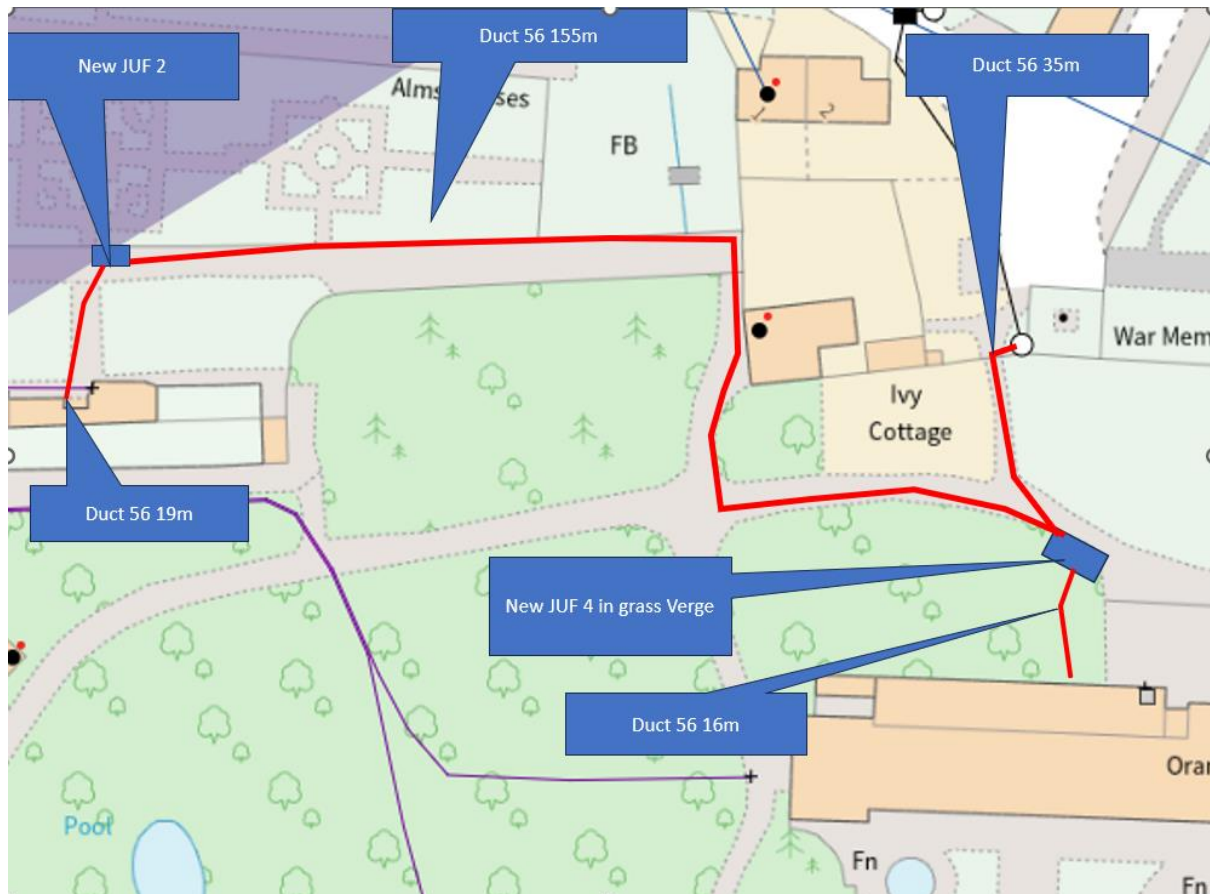
Mitigation for the castle is that we are using existing holes as much as possible with the plan to “make good” the holes with assistance from building services so that they can fill the holes with mortar and lye so that it can aesthetically match the building. This will then return the hole that is currently there to an original state. With the capping and internal CSP I can deliver the equipment ahead of time before the works begin so that Margam Park have an opportunity to paint, scuff and make the equipment look like the building so that it can blend into the building. We will be installing the duct route along a road which has recently been redone so the chances of excavation any historical artifacts would be lowered. Internally we will work with building services to “make good” any holes that we make and to protect the cavity with an alkathene pipe so this will protect the cable long term to avoid any revisits and unnecessary works in future.

Full fibre broadband is a much more reliable form of telecommunication network rather than copper which can break down with earth faults, water damage and general breakdown over time. Another mitigation factor will be the removal of the “Airband satellite” internet connection which is unreliable and also can be removed from the castle turret (unconfirmed if NPT would like to remove this entirely but this is a viable option)

Internal networks will be much more reliable and faster enabling the park to hold events, complete transactions at kiosks and hold meeting virtually with customers without the worry of connection dropping and enabling more staff to be able to use the internet without fear of the connection dropping out.

Orangery and Gardeners Mess Room – listed building

Below pictured are the proposed duct routes that will “feed” the orangery and the gardeners mess room. Both buildings are listed, and a route has been planned to avoid placing unnecessary duct work or poles through the park. We have identified a route that ends close to Margam Abbey, and we will be ducting from an electricity pole to bring our network into the Margam park grounds to feed the Orangery and Gardeners mess room.



There will be 2 new underground structures built which will be a JUF 4 and a JUF 2. Please see below for the dimensions of the underground structures. Duct 56 has a circumference of 50mm and will be placed along the red routes. This will be placed at a depth of 250mm – 350mm.

JUF 2 Dimensions



Depth(mm)	515	JUF2A
	665	JUF2B

JUF 4 Dimensions



Depth(mm)	665	JUF 4B
	815	JUF 4C
	965	JUF 4D

The route to the Orangery will have duct 56 placed. This will be 50mm in diameter and will be placed at a depth of 250mm-350mm. The excavation for the duct route to feed the orangery is below.

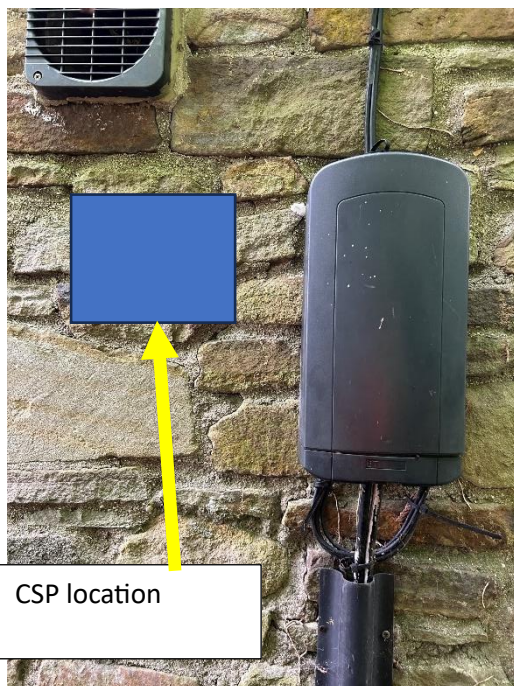


As seen above the new JUF 4 will be placed in the grass verge so over time the grass can regrow and cover the structure. The duct routes are highlighted in red and labelled. The route to the orangery will need to be hand dug and possibly using an air lance to excavate the duct route to avoid damaging the tree roots.

The duct route to the orangery will follow the fence line as much as possible. This has been previously excavated but will need to be carefully excavated using hand digging techniques and to use an air lance to avoid damaging the tree roots.



On installing the duct this will then end at the same point where the copper feed is attached to the building. This copper feed is still live and feeds the telephone line for the orangery. The new CSP will be placed next to the copper distribution point and will be fixed to the wall using 2x 1.5-inch-deep screws with wall plugs that will be drilled with a 110v drill. These holes will be 6mm in diameter. The CSP will be grey or brown. This will be an external CSP as pictured below.

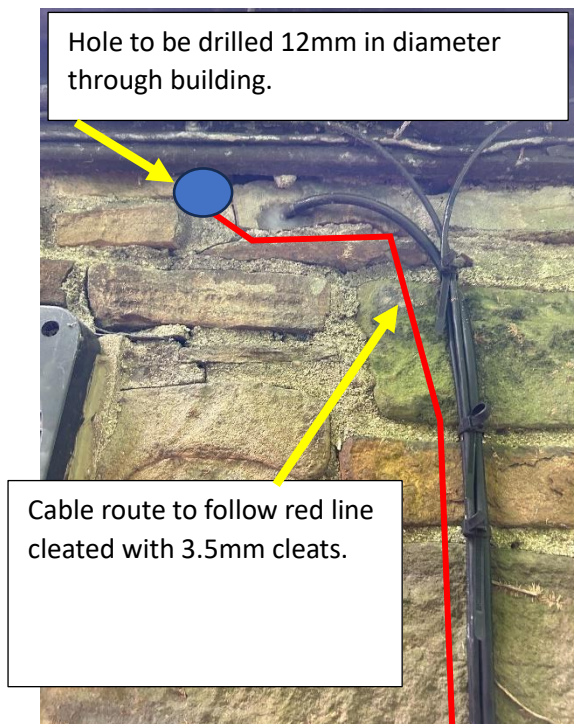


CSP location



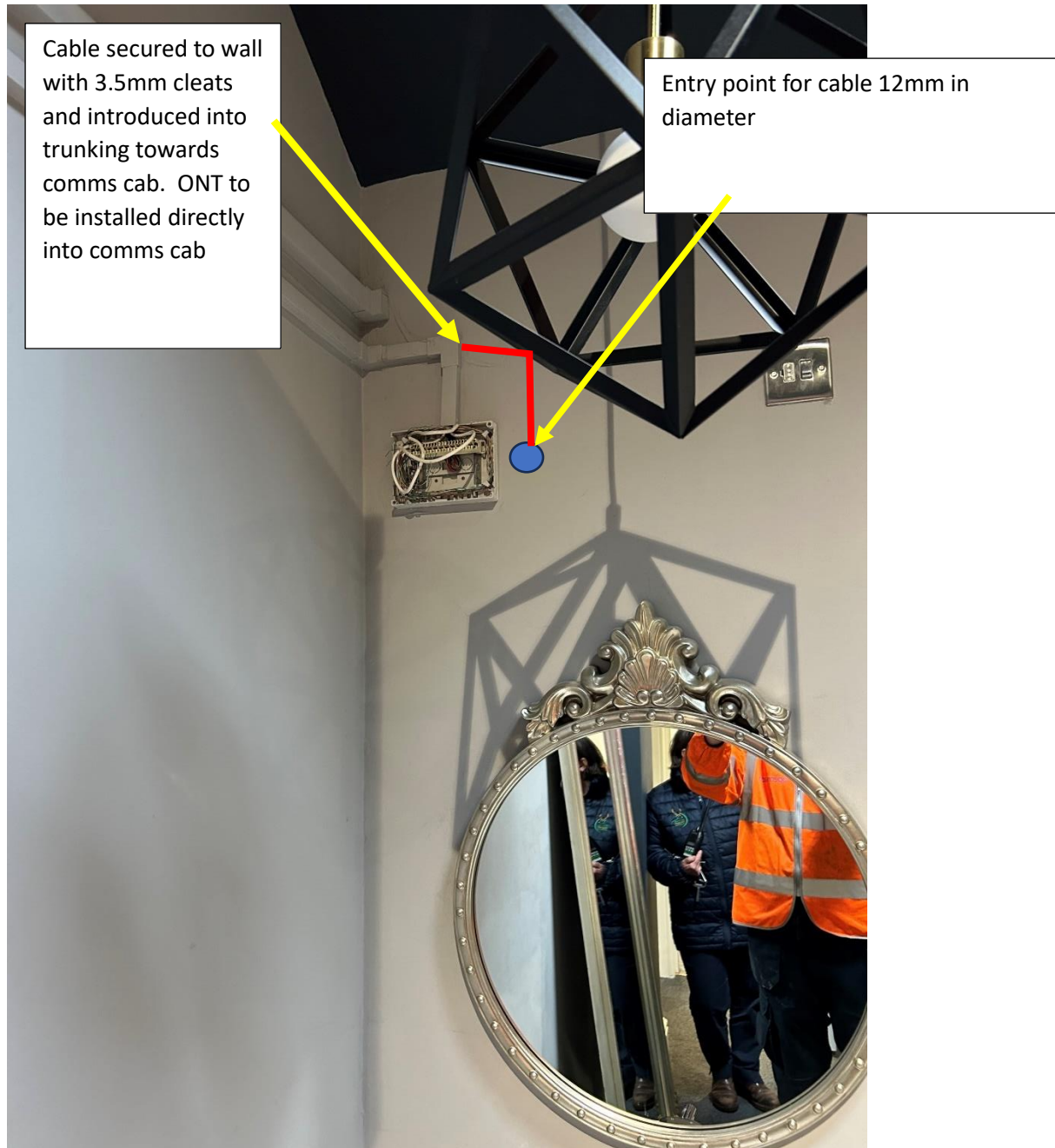
The Cable will be protected with a grey elephant's foot and capping. The CSP does not have to be installed at the same height as the copper DP so we can install it lower so that it is not within sight of the public and will be less visible to protect the characteristics of the building. The elephant's foot and the capping will be fixed to the building with 4-8 1.5 inch-deep screws with wall plugs and will be drilled with a 110v drill with a 6mm hole with a masonry drill bit.

Below is the entry point for the existing copper cable. This is currently filled with silicone and does not look like there would be much more room for out cable. We would need to drill a 12mm hole straight through the building protecting the cable with an alkathene pipe which will be sealed either end with silicone 15mm either side of the drill hole. NPT building services will then need to patch the hole with mortar and lye to "make good" the hole so that it will match the rest of the building and also to protect the building. The cable will need to be secured to the building using 3.5mm black cleats following the existing copper cable route.



The internal work required would be to introduce the cable through the drilled hole and placed inside a alkathene pipe which would be sealed with silicone 15mm either side of the hole. This will then be sealed by NPT building services using mortar and lye to blend the hole in with the rest of the building.

The internal work would enter the building and be installed into the existing capping which is pictured below. The capping goes directly into the coms cabinet which will have power that will power up the ONT. Any gaps in capping or route towards the capping from the entry point will need to be cleated using 3.5mm white cleats.



Mitigation - Orangery

Mitigation for the Orangery would be that the copper equipment on the outside of the building and inside can be removed when the service is live, and the telephone line transfers onto the fibre circuit. This would mean that the black capping, black cables and also the black copper DP (which is pretty large and looks a bit like Darth Vaders head) can be removed from the building. The new equipment would be a lot smaller, look neater as Margam Park will have the option to spray and scuff up the equipment so that it matches the building and will blend into the background. Another factor would be that this area where the equipment is being installed is not easily accessible to the public as is behind a large tree and has other vegetation that would cover the work.

Please see below



Another mitigating factor would be that the internal copper distribution point can be removed when the service goes live. This will improve the look of the internal work in the bridal suite as it would be minimal in future with 1 cable (a lot smaller than the current copper cable) with no equipment installed on the internal wall as it would be hidden away in trunking or if visible would be secured with 3.5mm cleats.

Gardeners mess room

The gardeners mess room is along a route that has an ancient road situated below a gravel path, please see pictures below for the proposed route.

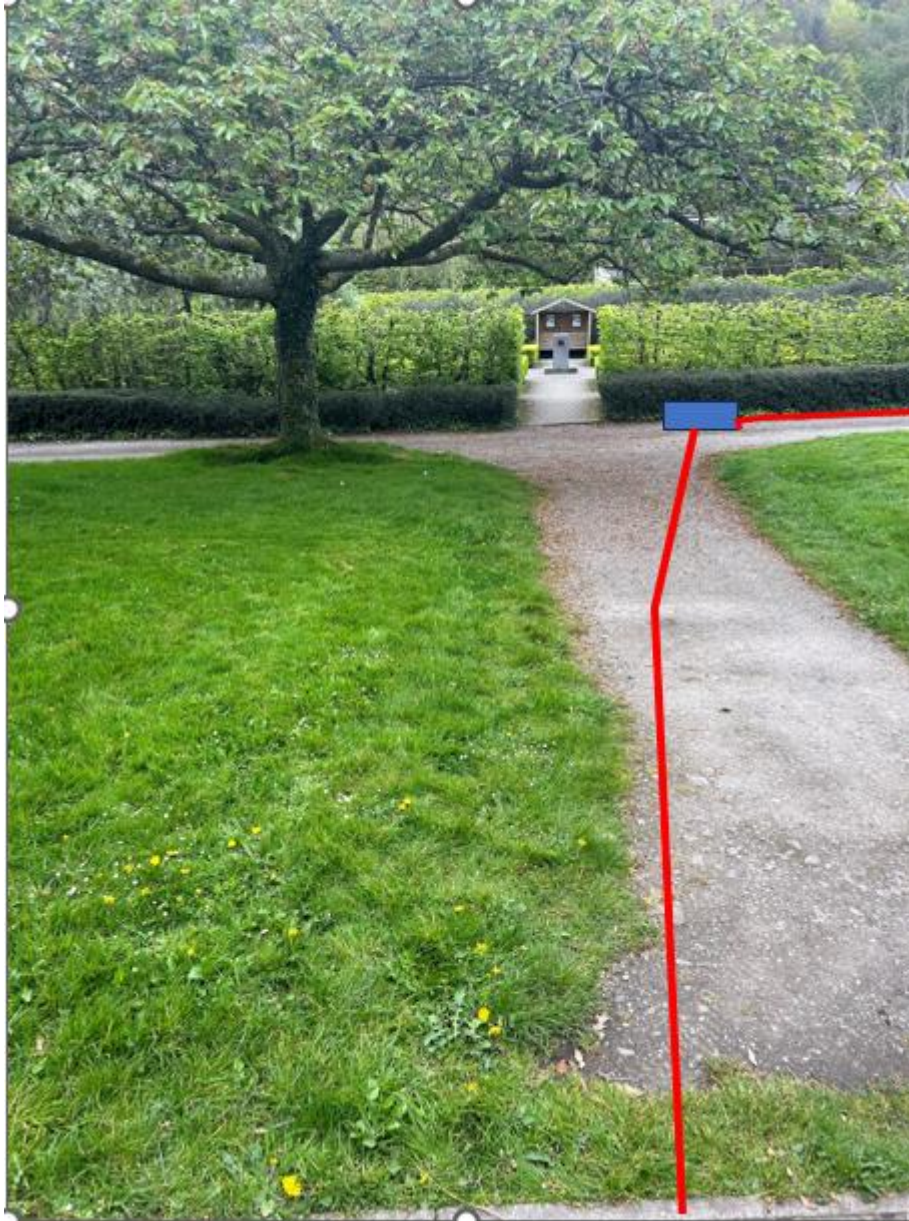
The duct route below is highlighted in red. We have proposed this route to hug the



hedgerow as much as possible due to there being an ancient road present under the gravel track. We aim to minimise any potential excavations of historical artifacts. A watching brief may be required for this section for any potential archaeological finds.

Below is the proposed duct route and the new JUF 2 which will be located just on the edge of grass verge as pictured roughly below. This route will try and avoid as much of the

ancient road as possible. The underground structure can be covered with gravel or grass depending on what the park feels appropriate to hide the structure so that it can blend in with the surrounding environment.



The duct route will then end at the base of this door and will be placed under the stone slabs.



The duct will be placed under the stone slabs along the red route. These will have to be carefully lifted by the civils team completing the work.

The cable entry point is already in place as there is a gap in the stonework. The cable can be introduced through this gap using an alkathene pipe to protect the cable being sealed with silicone either side and the pipe will need to have a 15mm gap either side of the wall so that NPT building services can “make good” the wall and place mortar and lye putty to repair the wall so that it can be returned to its original state.

On the cable exiting the duct mouth we will have to place an elephant’s foot with capping to protect the cable on entry into the building. This will require 4-6x 1.5inch deep holes around 6mm in diameter secured with wall plugs. This will then cover the cable and entry point to cover the capping. Margam park will have the option to spray paint and scuff up the capping to blend it into the wall so that it does not impact the look of the building.



Entry point into the building



On entry to the building, we will install an internal CSP. This will be installed within 2 meters of the cable entering the building to comply with fire regulations.

Proposed location of the CSP which will be fitted with 2x 1.5 inch deep holes and 2x wall plugs to fix in place at 6mm in diameter.

On installing the CSP we will connect the internal cable to the external cable via the CSP. There is not an agreed place for the comms cab yet, but it is believed to be free standing and will be installed along the same wall where the CSP is going to be installed. The ONT will be placed directly into the comms cabinet and for the purposes of commissioning the circuit and making it live we will not secure the ONT to the wall if the comms cab is not in place. NPT will place trunking for the cable to comms cab and then the ONT will be placed directly into the cab.

Mitigation – Gardeners mess room.

Mitigation for the gardener's mess room would be that there is no telecommunication infrastructure currently around the building. This infrastructure will need to be installed to feed the building. We will not fix the cable or ONT internally in the building as this will avoid any potential damage to the internal walls as NPT will fix capping and the comms cab will be close to where the CSP will be fixed. The ONT will be able to be installed directly into the comms cab and there will be no need for any cleats.

Margam Park Kiosk

The car park kiosk is not a listed building and already has existing duct work and structures along with a duct leading to the boundary of the building. We will be using the existing infrastructure to feed this with no exaction.

We will be fixing an elephant's foot, capping along with an external CSP. The ONT will be installed in the best possible location on the day of installation. Installation will be completed to policy.

Summary of works – Civils

Contractor will provide a method statement on how they will carry out the below works. A contractor will survey the civils work required prior to works starting.

380 meters of duct work installed 250mm-350mm deep.

Underground structure - JMF 4 x1 (outside orangery) - dimensions 915mmx445mm and will be installed 665mm-815mm deep.

Underground structure - JMF2 x1 (to feed gardeners mess room) - dimensions 725mmx255mm and will be installed 515mm-665mm deep.

Contractor will plan with the park on best possible dates and times to complete work

Acquire an air lance and use hand digging to complete the duct work on the leading to the orangery

Summary of works – Openreach

Connectorized block terminals x4 installed in underground in above UG chambers.

Small fibre node x3 installed in UG structures.

Customer splice points (grey) x4 (2x internal) fixed to the buildings - Compact size (L: 166/ W:144/ H:33 mm)

ONTx4 (internal) - The ONT is a small white plastic box (180mm x50mm x 120mm)

Elephants foot and capping x4 – these will be fixed to the buildings with 4-8 1.5inch deep with wall plugs and the holes will be 6mm in diameter (depending on the length required)

3.5mm cleats white/black – these will be fixed to secure the cables both internally and externally. These will only be used on sections where there is no plastic capping that will be provided by the NPT IT department.

Source alkathene (or similar) product to protect cable on entry to buildings and through walls (pipe to be sealed with silicone 15mm either side for external walls and 10mm either side for internal walls) and NPT building services will seal the holes with mortar and lye putty to repair the listed buildings to protect the listed buildings (does not apply to car park kiosk which will follow normal policy)

Drills will not exceed 110V to protect the cavity walls in the listed buildings.

Removal of any redundant copper cables to improve the aesthetics of the buildings to return them to an original look

Openreach will plan with Margam Park on the best possible dates and times to complete the works required for installing full fibre broadband to the park

Summary of works – Neath Port Talbot Council

Listed buildings – repair drill holes with mortar and lye putty on completion of works to “make good” the listed buildings and return them to an original look.

IT department to provide trunking (Margam castle, Gardeners mess room and other buildings that you feel appropriate to install) Any trunking will be used by Openreach and will avoid any hammering and cleating of cables.

Paint/ scuff up capping and CSP's so that it will blend in with the look of the buildings.

Cover UG structures as required to blend in with environment. Plan with civils teams on arrival for requirements of additional depth of covers so it can easily be covered with gravel or grass to match surrounding area.