BARNSLEY
Metropolitan Borough Council

Listed Building Consent Application

Installation of WiFi at

Elsecar Heritage Centre



Contents

- Introduction
- Background
- Design and Access Statement
- Location Plan and Site Description
- Planning Statement
- Proposed Work
- Heritage Statement
- Listing Information
- Recent Planning Applications
- Appendix 1 – Examples of Equipment
- Appendix 2– Colour Charts

Introduction

Barnsley Council operate five museum sites across the borough. These visitor attractions currently have very limited or no wi-fi connectivity for staff and corporate guests, and no connectivity for the public. Consent is sought to improve and install equipment to enable wifi connectivity throughout key buildings and outdoor areas at Elsecar Heritage Centre.

Background

Barnsley Museums welcome over £1.3M visitors annually to the council owned visitor attractions at Cannon Hall, Elsecar Heritage Centre, the Cooper Gallery, Experience Barnsley Museum and Worsbrough Mill. The visitor attraction market is highly competitive and expectations of today's visitors have gone way beyond simple learning through seeing and reading. Visitors want to stay fully connected throughout their visit. It's increasingly important that visitors can use their phones to engage with our interpretation and offer and connect to social media during their visit. In addition we need this connectivity to support our business clients who want to hire the venues but need and expect good connectivity. All Barnsley Museums are free to enter so it is important to continue to attract visitors to boost donations. Improving our offer will achieve this.

Wi-fi connectivity is poor or non-existent in many areas of the museum buildings in which our teams are currently based which limits agile working.

The proposal to improve and install wifi at our museum sites supports the council's commitment to Digital First agenda, and the delivery of Barnsley Museums' Digital Strategy, a requirement as a National Portfolio Organisation and the Barnsley 2030 priorities (Digital Barnsley).

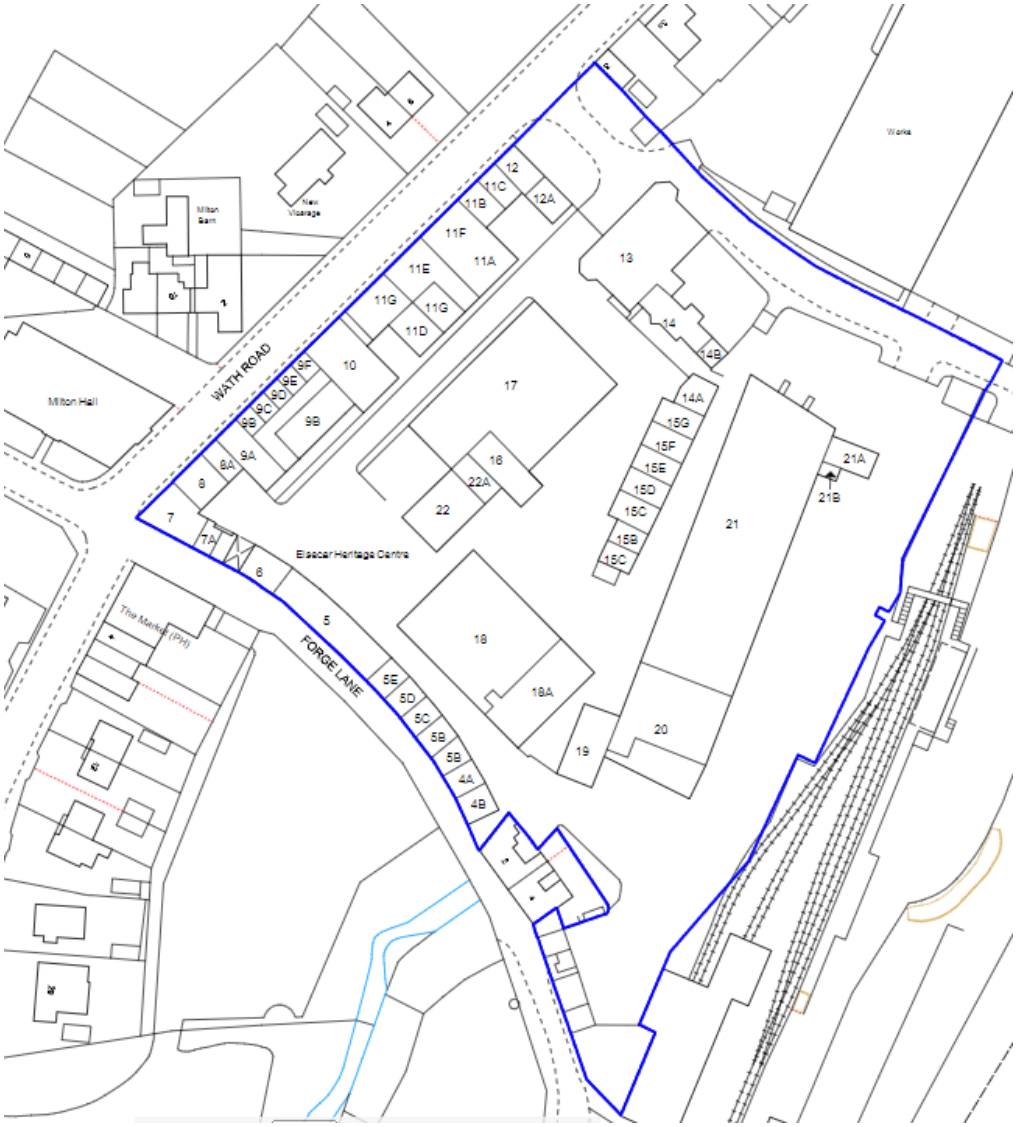
Capital Funding to undertake the project was agreed by Cabinet on 14/07/2021 Cab.14.7.2021/11. Work has taken place in conjunction with key stakeholders to further develop plans and we are now in a position to seek Listed Building Consent to complete the work.

Design and Access Statement

This statement is to support the application for the proposed addition of wifi to key buildings within the Elsecar heritage complex.

Location Plan and Site Description

Elsecar Heritage Centre is in the village of Elsecar which is 6 miles south of Barnsley and 8 miles north east of Sheffield. It is near to the town of Hoyland and village of Wentworth. The Heritage Centre comprises of a visitor centre, shops, galleries and craft studios, an events hall, tea rooms and a play centre.



The buildings are listed Grade II*. Elsecar Heritage Centre is a named Heritage Action Zone (HAZ), which is a partnership between Barnsley Museums and Historic England to further explore the history of the site. As a result of the HAZ, there have been 6 new listings on the site and 9 existing Grade II listings have been upgraded to Grade II* status, which puts them into the top 10% of England's most important historic buildings.

The Former Elsecar Ironworks Site, the boundary of which sits behind Building 15, was also recently given Scheduled Monument status, which further adds to the historic value of the wider site and the village of Elsecar.

Planning Statement

Relevant Legislation/Planning Policy:

Planning (Listed Buildings and Conservation Areas) Act 1990

In terms of the impact on the special character and appearance of the listed building, Section 16 (2) of the Planning (Listed Buildings and Conservation Areas) Act 1990, states:

In considering whether to grant listed building consent for any works the local planning authority or the Secretary of State shall have special regard to the desirability of preserving the building or its setting or any features of special architectural of historic interest which it possesses

The National Planning Policy Framework (NPPF)

NPPF para 189 and 190: The NPPF requires applicants to describe the significance (heritage) of any heritage asset affected by a proposal including any contribution made by the setting of the asset. The level of detail should be proportionate to the importance of the asset and the degree of intervention the proposal represents. The local Planning Authorities will take the heritage significance of an asset into account and consider any impacts on the asset to avoid conflict with the conservation of the asset.

NPPF para 193: Great weight given to an asset's conservation, irrespective of the degree of harm

NPPF para 194: Any harm to or loss of significance will require clear and convincing justification

Barnsley Local Plan Policies

Barnsley Local Plan Policy HE1: The Historic Environment: Positively encourage developments that help in the management, conservation and understanding of the historic environment

Barnsley Local Plan Policy HE3: Developments affecting Historic Buildings: Proposals involving historic buildings should conserve and where appropriate enhance, respect historic precedents, and capitalise on opportunities to reveal significance

Proposed Works

The addition of wifi to key buildings and outdoor areas at Elsecar Heritage Centre, using internal and external wifi access points (AP) and point to point radio bridge link technology. Pictures and dimensions of equipment are in appendix A. The bridge links enable two or more buildings to be connected to the data network without the need for cables.

The Council's IT contractor has provided a proposal to achieve this. The contractor has worked on similar projects in the past for the British Museum, the British Library and cities of York and Bath.

There will be six internal access points, five external access points and six bridge links required to fulfil the project brief. Bridge links enable the data network to extend to other buildings without the use of cables.

Internal AP



Dimensions: W x L x H 21.6cm x 21.6cm x 4.3 cm

External AP



Dimensions : W x L x H 25.9cm x 23.3cm x 8.1 cm

Bridge Link



Dimensions: H x W x D: 16.9 cm x 10.0 cm x 5.4 cm

The internal and external APs have internal antennae to minimise their appearance. (See appendix A for further information) Where required, the APs and other equipment can be wrapped to blend in with décor or surroundings. (See appendix B)

The structured data cables, installed as part of the project to provide power and up to 1Gbps data network services to the wireless access points, will be Leviton category 6 unshielded twisted pair (UTP). The cables will be run through existing and/or new surface mounted trunking where needed. Any new trunking installed will be done in an aesthetically sensitive way.

Works to install power, as described below, will be undertaken by Barnsley Property Services.

Elsecar B22 network cabinet – 1 x fused spur + Building Functional Earth (BFE)
Elsecar B21 network cabinet – 1 x fused spur + BFE
Elsecar B2 bridge and AP – 1 x fused spur (or 13A outlet acceptable)
Elsecar B18 bridge and AP – 1 x fused spur (or 13A outlet acceptable)

Example of fused spur below:



Where it is appropriate aesthetically, wall mount 2P+E Industrial Power Sockets may be used rather than a fused spur. Example below:



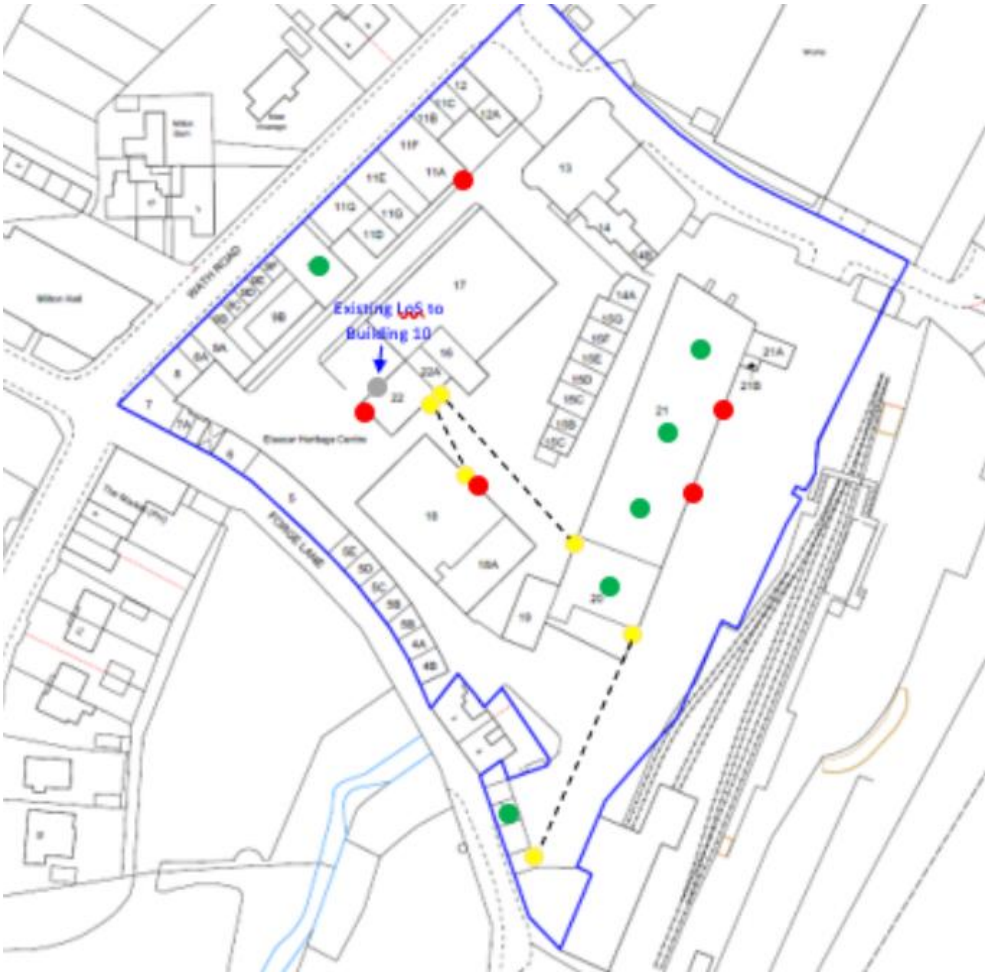
The sites identified for the APs in this proposal should be sufficient to meet the project brief. However, the proposed locations may be subject to minor changes, dependent upon availability of suitable cable routes and digital wifi signal mapping survey by the contractor. In the event of this situation, preservation of the asset would come first. If changes are required, they will be discussed and agreed with the Council's Conservation Officer.

The plan below shows how the proposed wifi scheme will work.

Red dots – External APs

Green dots – Internal APs

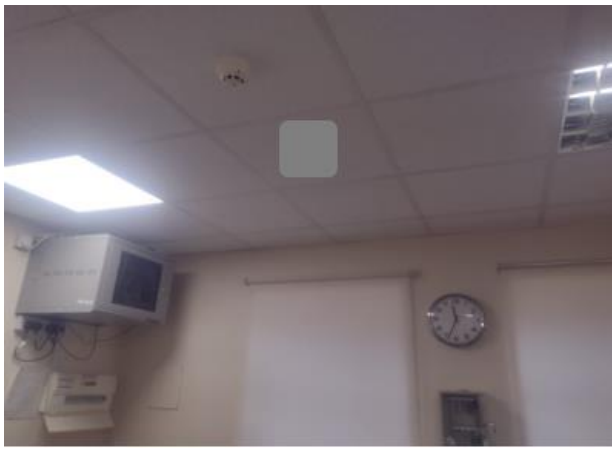
Yellow dots – Point to point bridge links



Visitor Centre

Internal access point in the Visitor Centre ground floor office





The photo above right provides an example of an access point fitted to a ceiling tile.

An AP is needed downstairs in the Visitor Centre as the coverage from the AP upstairs is insufficient. The location could either be in the office, shop or information area to the rear of the building. An AP in this location would also help visitors to engage digitally with interpretations in the Visitor Centre.

Building 22

A bridge link exists between the Visitor Centre and Building 22. Cables for the link come into building 22 just under the window in the corner of the room. This was put in place to provide wired network access when building 22 was used as a Project Office for Council employees. This bridge link can be reused and is essential to the rest of the project to enable wifi throughout the complex. Cables will be routed through the existing trunking to a network cabinet in the downstairs of the building under the staircase. This will also require a cupboard or cage installing to keep the network cabinet safe and tamper proof.

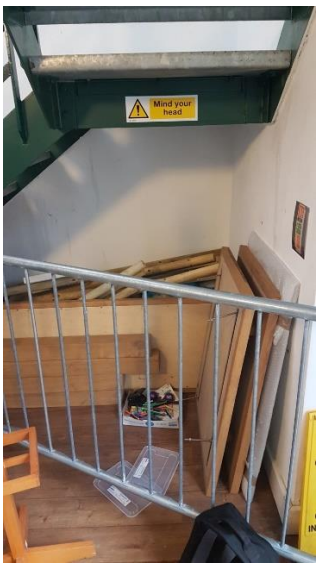
Building 22 Project Office



Existing bridge link (round, black object)



Understairs cabinet location



Installation of point to point bridge equipment on the exterior wall near gutter

The photo on the right shows an example of where the bridge link could be located. (black rectangle)





Installation of the equipment in this location is essential to enable the wifi scheme to work throughout Elsecar. Bridge links have been chosen as digging trenches to lay cables could damage the archaeology of the site.

External access point on front left of building







An external AP in this area will provide wifi coverage into Powerhouse Square. As mentioned above, There is already a point to point receiver positioned under the window above the street sign. The black rectangle on the right hand photo is an example of where the external AP could be located.

Antiques Centre

Installation of bridge receiver and external AP



The picture above shows the planned mural on the side of Elsecar's Antiques Centre. The bridge and AP will be wrapped to blend in and positioned suitably. The external AP will provide wifi coverage in the space between the shops and the Playmania building. The artist is aware of the plans to install wifi equipment in this location and has provided the paint colour information needed to match the wrapping.

Building 21

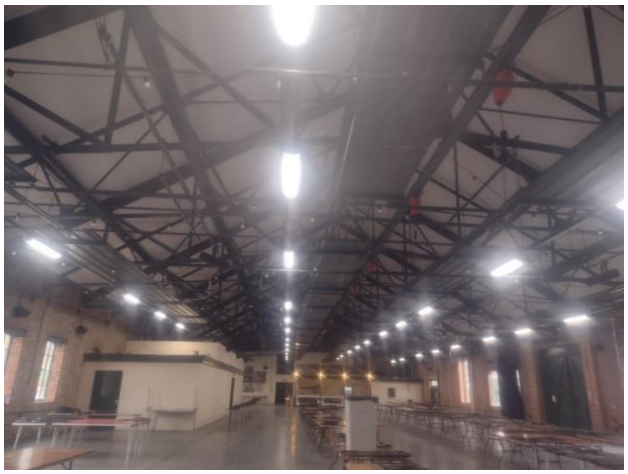
Installation of bridge link to the exterior wall of building 21 facing building 22. The black rectangle (indicated by red arrow) shows an example of where the bridge link could be placed.





The bridge link will be placed as close to the gutter as possible.

Three internal APs to be fitted to the beams



Three internal APs have been chosen so that coverage is sufficient for the potential amount of people attaching to the wifi during large events. The APs can be wrapped to blend in.

Installation of network cabinet in upstairs boiler room

The bridge link on the outside of building 21 will be connected to a new network switch mounted in a new network cabinet to be installed in the boiler room. The boiler room is located upstairs in building 21.



Two external APs fitted to rear of building 21 facing the railway





The external APs will be installed as close to the guttering as possible so will be out of sight.

Installation of bridge link to the end of building 21

The black rectangle indicates a potential location for the bridge link.



This will enable the data network to be extended to building 2 which will be used as an office for Council employees.

Building 20

One internal AP for building 20 for when it is converted into events space. There is no photo for this location as the works to convert the building haven't yet taken place.

Building 2

Installation of bridge link on building 2. The potential location for this is indicated by the red arrow on the photo below.



An internal AP will be located within building 2 when turned into an office. The exact location is not yet known. The Conservation Officer will be consulted on the location before work to install the AP commences. Wifi is necessary in this area to enable people to work digitally. A cabled connection would mean digging trenches to lay cables.

Building 11

Cabling from Visitor Centre to end of building 11 via the shop exteriors on Nasmyth Row will lead to an external AP on the end of building 11. Cabling routes already exist in this location.









External AP on end of building 11. (photo above right)

The AP would be positioned alongside the other objects on the wall, as close to the gutter as possible.

Heritage Statement

Consultation has taken place with the Senior Conservation Officer and advice given has been fully incorporated into this submission.

Any external access points, cabling, point to point bridge technology will be attached to the mortar of the building(s) rather than to the stone/brickwork, or alternatively attached to a piece of wood and then this attached to the mortar if this would cause less disturbance to walls. The wood would be painted to be in keeping with the surrounding environment.

Anything which is attached to the buildings will be as unobtrusive as possible. Where able, the external fittings will be tucked under guttering and/or vinyl wrapped to disguise them, or be in a colour that blends in with the surroundings.

Point to point radio wireless bridge link solutions will be used to enable wifi to be distributed throughout the site. This will avoid trenches being dug which could damage archaeology and the scheduled monument.

Existing structured cabling will be utilised wherever possible. Where new structured cabling has to be installed it will comply to the Telecommunication Industry Standard (TIA) category 6 standard for unshielded twisted pair and be installed in dual surface mount outlets. The use of dual outlets will enable other system to be developed in the future without a repeat of the cable installation process, e.g. CCTV or Internet of Things (IoT) networks.

Internal access points will be mounted out of the line of sight, wherever possible. Where it is not possible to do this, access points can be wrapped to match with the decoration of the room, or placed near other existing wall/ceiling mounted equipment, eg CCTV, exit signs etc. A colour chart is included in appendix B for reference of stock colours, however bespoke colour wraps can be created at a cost. Cables will follow existing routes where possible and any new trunking painted to match décor.

Consultation has taken place with the Collections and Exhibitions Manager, Visitor Services Manager and with the Museums Team to ensure that the collections can be kept safe throughout this work. Arrangements will be made with the Museums Team to move and/or protect artefacts or enlist the services of specialist removers, if needed, prior to work commencing.

The Group Leader for Heritage and Arts has been fully consulted and briefed about all aspects of this project.

The Council's IT contractor is fully appreciative of the protected status of the museum sites and has worked on similar projects for the British Museum, British Library and cities of York and Bath. The contractor has stated that they are fully committed to working alongside the Conservation Officer and all relevant stakeholders in the undertaking of this project.

This project has given great consideration to the conservation of the Elsecar Heritage Centre. The proposed addition of wifi would not cause any significant degree of harm to the asset, either inside or outside. The wifi will enable improvements to the management, conservation and understanding of the site. It will improve the visitor and commercial offer which in turn will contribute to the conservation of the site.

Overall, we would suggest the proposal is justified and represents no harm to the heritage significance of the listed building(s) and is therefore in accordance with local and national planning policy.

Listing Information

The former Elsecar Ironworks
Heritage Category: Scheduled Monument
List Entry Number: 1465668
Date first listed: 20-Oct-2020
Location Description:
The eastern portion of Elsecar Heritage Centre, Wath Road, Elsecar, extending uphill eastwards to include the terrace on Furnace Hill which was the former charge yard, along with associated features.

Buildings 20a and 21, former rolling mill at Elsecar Ironworks, including two halved colliery pit wheels
Heritage Category: Listed Building
Grade: II*
List Entry Number: 1151097
Date first listed: 04-Dec-1986
Date of most recent amendment: 19-Oct-2020
Statutory Address:
Elsecar Heritage Centre, Wath Road, Elsecar, Barnsley, S74 8HJ

Building 22 former Joiner's Shop, including chimney and rebuilt boiler house (building 16)
Heritage Category: Listed Building
Grade: II*
List Entry Number: 1315025
Date first listed: 04-Dec-1986
Date of most recent amendment: 19-Oct-2020
Statutory Address:
Elsecar Heritage Centre, Wath Road, Elsecar, Barnsley, S74 8HJ

Buildings 2 & 3 and boundary wall, former Elsecar Ironworks entry range
Heritage Category: Listed Building
Grade: II*
List Entry Number: 1465834
Date first listed: 04-Dec-1986
Date of most recent amendment: 19-Oct-2020
Statutory Address:
Elsecar Heritage Centre, Wath Road, Elsecar, Barnsley, S74 8HJ

Buildings 8-12, former workshops, offices and warehousing of the former Elsecar Central Workshops
Heritage Category: Listed Building
Grade: II*
List Entry Number: 1465837
Date first listed: 04-Dec-1986
Date of most recent amendment: 19-Oct-2020
Statutory Address:
Elsecar Heritage Centre, Wath Road, Elsecar, Barnsley, S74 8HJ

Recent Planning Applications For Elsecar Heritage Centre

Reference	Description	Site Address	Valid From	Decision	Status
2022/0294	Replacement boilers and new condensate drain (Listed Building Consent)	Playmania, Building 17, Elsecar Heritage Centre, Forge Lane, Barnsley, South Yorkshire, S74 8HJ	1 March 2022	Under Consideration	Registered
2021/1088	Replacement roof and rainwater goods (Listed Building Consent)	Building 15 Elsecar Heritage Centre, Wath Road, Elsecar, Barnsley, S74 8HJ	11 August 2021	Approve with Conditions	Final Decision
2021/1087	Replacement roof and rainwater goods	Building 15, Elsecar Heritage Centre, Wath Road, Elsecar, Barnsley, S74 8HJ	11 August 2021	Approve with Conditions	Final Decision

Appendix A

Equipment information

External AP

The Cisco Catalyst 9124AX Series outdoor access points are next-generation Wi-Fi 6 access points encased in a rugged and robust design that service providers and enterprises can easily deploy.



Figure 1.
Cisco Catalyst 9124AX Series Access points

Dimensions : W x L x H : 25.9 x 23.3 x 8.1 cm (excluding mounting bracket)

Internal AP

The Cisco Catalyst 9120AX Series Access Points are the next generation of enterprise access points. They are resilient, secure, and intelligent.



Access point (without mounting brackets): C9120AXI: 21.6 x 21.6 x 4.3 cm

Mounting bracket is invisible behind the AP and is attached to the wall/ceiling by four screws.

Point to point bridge link equipment



Dimensions

H x W x D: 16.9 cm x 10.0 cm x 5.4 cm

Cabling and trunking

The cabling will be Leviton Category 6 (which meets the minimum requirement of BS 6701, Euroclass Cca-s1b,d2,a2 in accordance with BS EN 13501-6). The trunking and components will be

Marshall Tufflex Plastic Mini Trunking and components. Marshall Tufflex Plastic conduit 20mm and components will also be used.

Example of Tufflex Mini Trunking (left) Marshall Tufflex Plastic conduit 20mm (right).



Network Switches and Cabinets

The Cisco Catalyst 9300 Series is made up of nineteen modular uplink switch models and fourteen fixed uplink switch models.



Figure 1.
Cisco Catalyst 9300 Series switches

The network switches will be housed in network cabinets. Network cabinets are used to store the networking equipment and accessories.



Above is an example of a 600x600mm floor standing cabinet. Cabinets can also be wall mounted and come in different colours eg black. The cabinets lock to prevent tampering of the equipment.

Appendix B


productoverview
Supreme Wrapping Film
Gloss
White SW 900-101-O
Black SW 900-190-O
Yellow SW 900-225-O
Ambulance Yellow SW 900-234-O
Dark Yellow SW 900-245-O
Orange SW 900-370-O
Soft Red SW 900-427-O
Red SW 900-415-O
Cardinal Red SW 900-433-O
Carmine Red SW 900-436-O
Burgundy SW 900-475-O
Light Blue SW 900-632-O
Intense Blue SW 900-667-O
Blue SW 900-677-O
Dark Blue SW 900-681-O
Indigo Blue SW 900-699-O
Lime Green SW 900-731-O
Grass Green SW 900-758-O
Emerald Green SW 900-771-O
Dark Green SW 900-792-O
Grey SW 900-832-O
Dark Grey SW 900-865-O
Pearlescent
White Pearlescent SW 900-109-S
Orange Pearlescent SW 900-327-S
Gold Orange Pearlescent SW 900-326-S
Red Pearlescent/ Red Rush Pearl Metallic SW 900-437-S
Light Green Pearlescent SW 900-777-S
Dark Green Pearlescent/ Emerald Pearl Metallic SW 900-796-S
Conform Chrome
Conform Black Chrome SF 100-196-S
Conform Gold Chrome SF 100-604-S
Conform Blue Chrome SF 100-256-S
Conform Silver Chrome SF 100-843-S
Matte
Matte White SW 900-102-O
Matte Black SW 900-180-O
Matte Orange SW 900-321-O
Matte Emerald Green SW 900-751-O
Matte Dark Grey SW 900-856-O
Gloss Metallic
Black Metallic SW 900-192-M
Cherry Red Metallic SW 900-440-M
Gold Metallic SW 900-215-M
Brown Metallic SW 900-929-M
Bright Blue Metallic SW 900-646-M
Dark Blue Metallic SW 900-653-M
Silver Metallic SW 900-803-M
Grey Metallic SW 900-807-M
Quick Silver Metallic SW 900-814-M
Carbon Fiber
White Carbon Fiber SW 900-115-X
Matte Metallic
Silver Matte Metallic SW 900-857-M
Anthracite Matte Metallic SW 900-858-M
Gunmetal Matte Metallic SW 900-840-M
Charcoal Matte Metallic SW 900-845-M
Pink Matte Metallic SW 900-520-M
Cherry Matte Metallic SW 900-444-M
Garnet Matte Metallic SW 900-472-M
Blaze Orange Matte Metallic SW 900-371-M
Brown Matte Metallic SW 900-950-M
Midnight Sand Matte Metallic SW 900-797-M
Green Matte Metallic SW 900-768-M
Apple Green Matte Metallic SW 900-745-M
Emerald Matte Metallic SW 900-771-M
Frosty Blue Matte Metallic SW 900-643-M
Powder Blue Matte Metallic SW 900-614-M
Black Carbon Fiber SW 900-194-X
Lagoon Blue Matte Metallic SW 900-648-M
Blue Matte Metallic SW 900-639-M
Brilliant Blue Matte Metallic SW 900-671-M
Purple Matte Metallic SW 900-565-M
Night Blue Matte Metallic SW 900-623-M
Brushed Metallic
Black Brushed Metallic SW 900-193-X
Aluminum Brushed Metallic SW 900-812-X
Titanium Brushed Metallic SW 900-832-X
Steel Brushed Metallic SW 900-813-X
Bronze Brushed Metallic SW 900-933-X
Satin
NEW Bubblegum Pink Satin SW 900-514-O
NEW Carmine Red Satin SW 900-438-O
NEW Black Satin SW 900-197-O
NEW White Satin SW 900-116-O
NEW White Pearlescent Satin SW 900-117-O
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Color Flips
Chrome