openreach
Connecting you to your network

Site Registration & CAD
A Developers Guide
Version 3.3 (Under Consultation)

Ryan Christie/Alex Baker
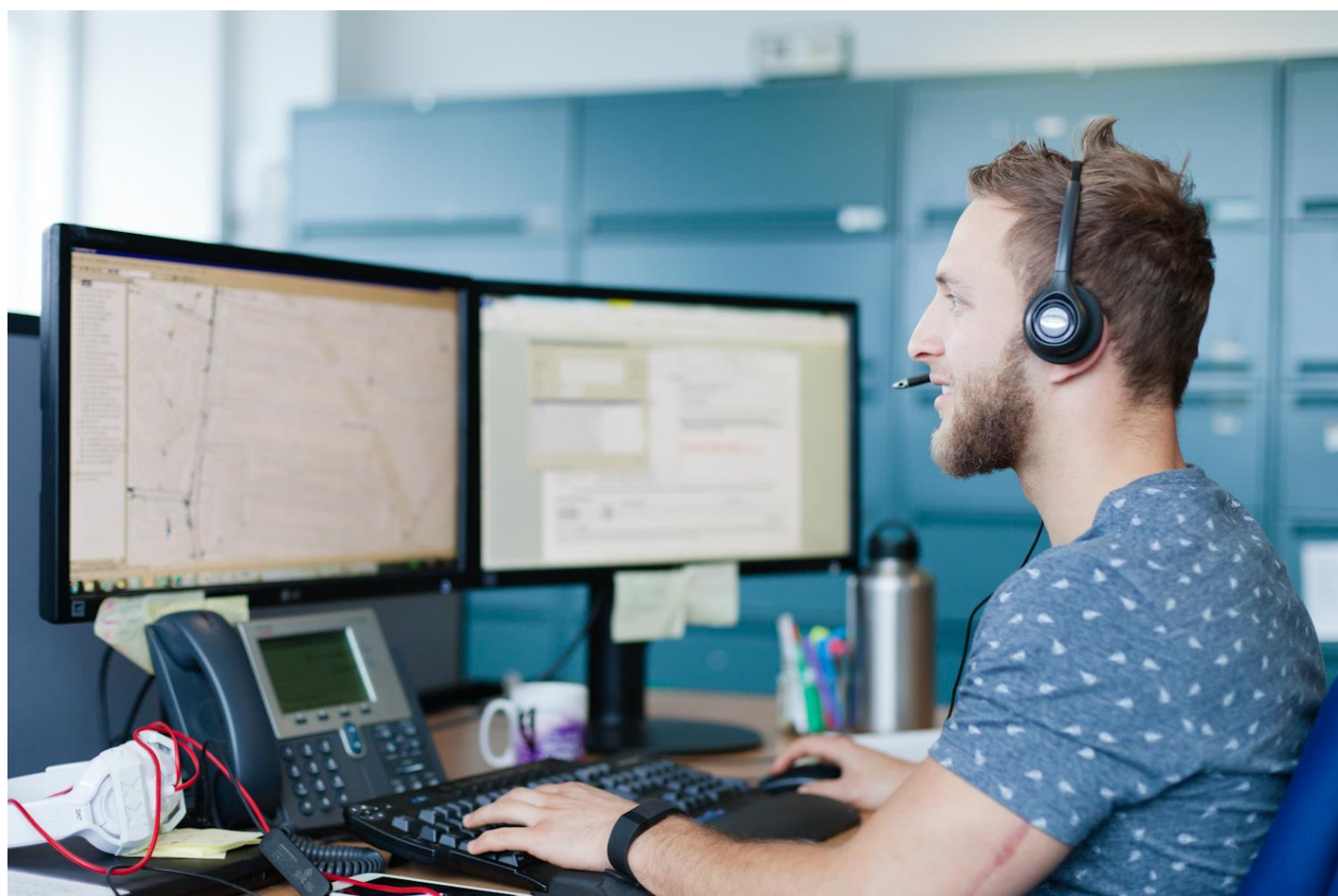October 2019

CAD for Developers

An introduction

In Openreach, we recognise there is a real desire to change our Site Registration process and based on your feedback and input we are delighted to advise that we now accept proposals from developers in CAD format (.dxf)

This is the first step in change as we strive to align our technology with developers – our 'boffins' in Research and Development are already looking at BIM and Revvit, amongst others.

By allowing CAD files on our planning systems, this means that for developers:

- You no longer need to create separate JPEG/PNG plans

- We can process proposals much quicker

- By introducing planning system automation we can reduce human errors

- Removing errors at the outset will reduce the volume of re-plans that may be needed.

- CAD files will be returned with our network overlaid already, no more working from two separate files

- You can register New Sites via the Openreach registration website using CAD files NOW!
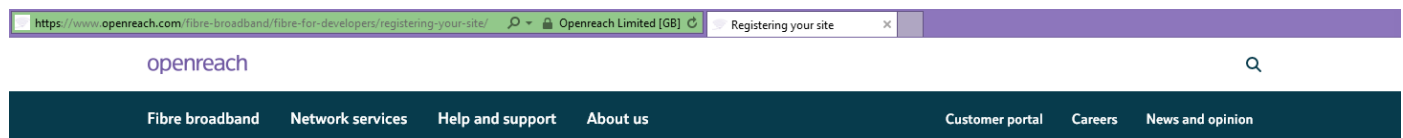
Contents

Registering your site

Openreach Website

To register your site please visit

https://www.openreach.com/fibre-broadband/fibre-for-developers/registering-your-site/

- Openreach will install Fibre to the Premises (FTTP) free of charge for developments of 30 or more premises
- For sites with 2-29 premises we'll assess our network to offer you the best available technology.

For further information please refer to our web site www.ournetwork.openreach.co.uk/

When you visit the website you will need to complete a Newsites Registration Form.

Within that form you will find a section that requires you to provide site plans

See below an image of where on the form you will need to attach your CAD drawings in **.DXF format**

For sites containing MDUs or multiple phases we will also require a document containing additional information

The CAD Registration Support Document can be found at www.openreach.com/registering-your-site/

The current webform does still require mandatory **.PDF** or **.DOC** formats to be uploaded in the Detailed Site and Location Plans sections, however if you are providing a valid CAD file you may upload the CAD Support Upload Document **(.PDF)** template instead of the requested **.PDF** site and location plans

This PDF Document is also available at www.openreach.com/registering-your-site/

The Planning Journey

Bringing it to life...

The diagram below, shows you how our planning journey works

Developer	• Creates the site plan • Registers the site
Reception Team	• Validates the plans • Acts as a touch-point for developers
Planning Team	• Plan the Openreach Network as per Planning Policies • Creates Proposal and send to Field Based Co-Ord
Field Based Co-Ord	• Meets with developer • Agrees and mutually signs off proposal with developer
Developer	• Agrees Proposal with Field Based Co-Ordi • Commences work

The CAD (.DXF) File requirements

What can we accept?

Over 1000 developers are registered with us to build sites and they all request Openreach provide network to their customers, as you can imagine this is over 1000 different ways of working. In order for us to accept CAD proposals there does need to be an element of standardisation. However, before we go into that though, lets think about the basic technical file requirements.

The file type

As it stands today, we need your CAD files converted to **AutoCAD R12 Release ASCII DXF** format, we recognise this is a much older version of CAD than you are used to, but this can be done fairly easily. The reason we have done this is so we can cover all versions that our developers may have acquired- and also because this is the latest 'back-compatible' version. This is a text based format that our planning tool (NetDesign) can read.

The file size

DXF ASCII files can be very large, when registering your site via the Openreach website size limit is **250Mb**, therefore we do not need every minute detail (internals of the properties etc). To keep the file size down we recommend you switch off/remove layers that would not be required

Files can also be zipped prior to attaching, this will also reduce size.

NOTE: *If you are sending a file via email to us (for example if you are liaising with the Reception Team and want to send a new file) the file MUST be zipped and in some cases (depending on your firewalls) password protected, please ensure that you provide the chosen password to our Reception Team when sending*

Example of a CAD Drawing (Model View)
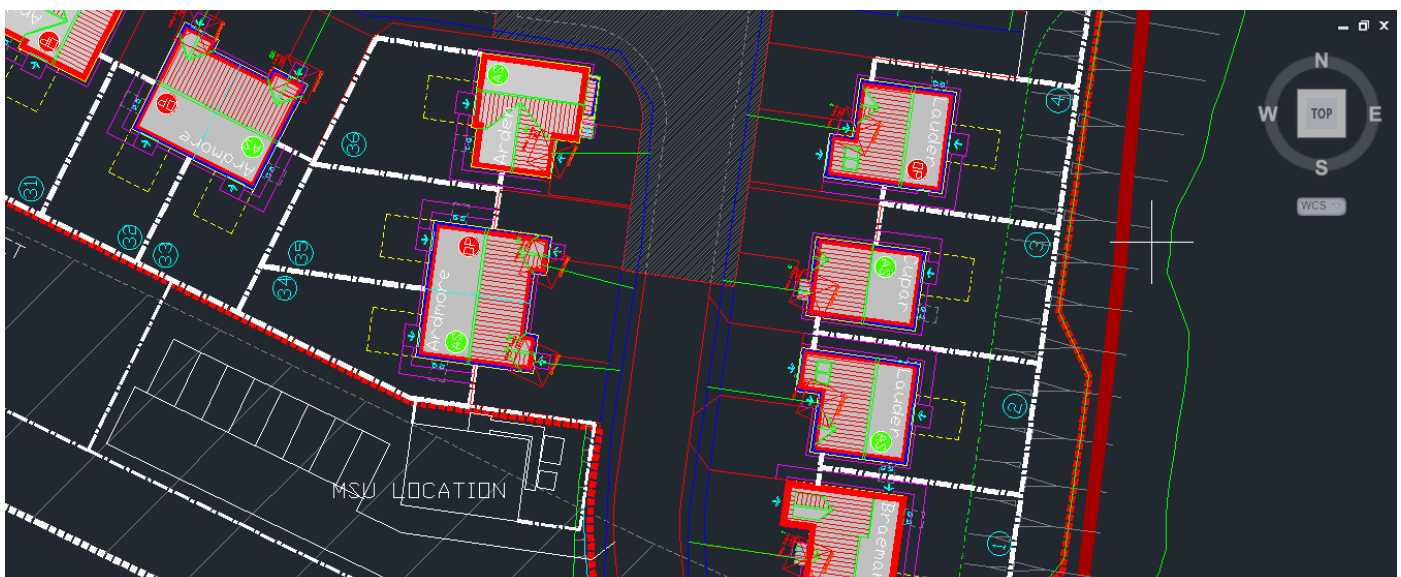
In the next section you will find more detail about what we need in terms of what the CAD file actually contains.

Openreach CAD Standards

What are Openreach Standard Blocks, and how are they used?

The Openreach Standard Blocks are CAD symbols. They contain attributes that allow NetDesign to process the file. The table below details the Openreach Standard Blocks, how they are used, and the associated attributes required.

OR_REF_A

- To be provided anywhere in the **uppermost left quadrant** of the CAD Drawing
- It must contain **Attributes** detailing **Northing** and **Easting** location of the point
- This should be provided in the **6 digit**
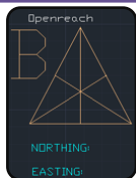
OR_REF_B

- To be provided anywhere in the **lowermost right quadrant** of the CAD Drawing
- It must contain **Attributes** detailing **Northing** and **Easting** location of the point
- This should be provided in the **6 digit format**

OR_PHASE

- Any site can be phased but if it is over **200 plots it MUST** be phased
- Symbols containing **Phase ID** and **Demand Attributes** are to be provided
- **Additional Phase details** are required in an **Excel attachment (See Section 6.5)**
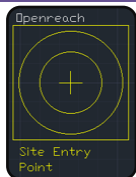
OR_SITE_ENTRY

- A symbol used to mark the **location of the main site entrance**
- In most circumstances this will be the most likely **main cable entry** to the site
- This is where we would expect to **connect with existing infrastructure**

OR_SDU_ENTRY_POINT (Single Dwelling Unit)

- Symbol marking the proposed **OR cable entry point to each SDU**
- Requires the **Plot ID** as **Attribute** data
- Additional **Attibutes** such as **Address** and **Postcode** can be added **if known**
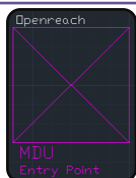
OR_MDU_ENTRY_POINT (Multiple Dwelling Unit)

- Symbol marking the proposed **OR cable entry point to each MDU**
- Requires the **Block ID** as **Attribute** data
- **MDU plot details** are to be provided in an **Excel attachment (See Section 6.6)**

OR_MAISONETTE_ENTRY_POINT

- Symbol marking the proposed **OR cable entry point to each Maisonette**
- Requires the **Plot number** as **Attribute** data
- Additional **Attibutes** such as **Address** and **Postcode** can be added **if known**

What are Poly Lines and what are they for?

Poly Lines are specific CAD layers that can be used to suggest potential duct routes crossings and lead in locations. They are contained within the Openreach Block Library along with the Symbols above. By providing this additional level of detail developers gain greater control over plans and help us provide faster turnaround time for proposals.
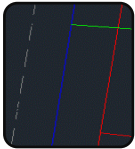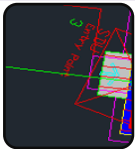

OR_PROPOSED_DUCT_ROUTES
• Used to mark suggested/preferred duct routes along pavements of development
• Starting from the OR_SITE_ENTRY point around the entire site
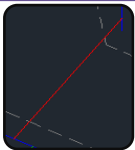
OR_PROPOSED_DUCT_CROSSING
• Used to mark suggested/preferred duct crossing accross carriageways
• Connected to OR_PROPOSED_DUCT_ROUTES on either side of roadways

OR_PREMISE_LEADIN
• To mark suggested/preferred duct routes to SDU, MDU or Maisonette entry points
• Connected from entry points to OR_PROPOSED_DUCT_ROUTES

Where do I find the Blocks, and how do I consume them?

The Openreach Block Library is now available on the Openreach website (Section 5 - The plans)

https://www.openreach.com/fibre-broadband/fibre-for-developers/registering-your-site

Once CAD users have downloaded the Block Library There are 2 methods for consuming the blocks and layers

• Blocks and layers can be copied and pasted into your existing CAD drawing from the Openreach file.
  - Symbols can be pasted multiple times or recopied from you own file once used
  - Polylines can be pasted into the drawing to provide the correct layer name. The duct routes would then be drawn using a series of new polylines created within that layer.
  - The original imported line can then be removed leaving only the proposed duct routes under the appropriate layer name

• Blocks and layers can be built into your own templates to be reused multiple times
  - The Symbol or Layer would be pasted from the Block Library into either an existing plan or your own frequently used blank CAD template
  - If the layer is then saved in your own template then it can be used again without the need to refer back to the Openreach file whenever new sites are created
  - While this may take a little more time in the first instance, saving the blocks to your own template would be the most economical option in the long run.

Further information and guidance on using the blocks including a series of videos will be published online with the block library shortly. If you still have further questions on the use of the CAD Symbols and layers required please contact:

developer.communications@openreach.co.uk

Please use the reference **CAD** in the subject field

Which Blocks and Attributes are Mandatory?

Not all of the Blocks contained in the Block Library are mandatory but using them can have benefits for both Developers and Openreach alike.

OR_REF_A and OR_REF_B are the 2 symbols that are mandatory for all sites.

These symbols are used by NetDesign to locate the site in the OS mapping systems and align the site to its geographic location. NetDesign cannot locate the site without these **6 digit geographic reference** points (often referred to as Northings and Eastings).

OR_SITE_ENTRY allows us to use NetDesign automation to locate the existing infrastructure to feed the site. While this is not mandatory it helps us to speed up the planning process and reduce human error.

OR_SDU_ENTRY_POINT, **OR_MDU_ENTRY_POINT** and **OR_MAISONETTE_ENTRY_POINT** symbols give the developer greater accuracy, flexibility and control over the precise location of the Openreach Premise Lead-In.

While this detail it is not mandatory it does significantly speed up the planning process by removing the need for Openreach Planners to manually 'Spot the Plots'.

Also by including the individual plot entry points and attributes we can reduce issues and errors experienced with plot identity, address matching and most importantly; future commissioning.

Phased Site Requirements

Phases can be provided if required for any sites over **30 plots**, however **Phasing is a mandatory requirement for any sites of 200 plots or above**

For a site plan having several phases or part of larger development, developers need to identify the different phases and expected number of premises within those phases. This allows Openreach to correctly dimension the duct infrastructure and prepare for the future demand. Our preferred method is for developers to use the **OR_PHASE** CAD symbol to provide this Phase ID and Phase Demand Attributes.

If you have worked on a phased site before you may already be aware that contact with the Reception Team is usually required to confirm all the phase details required.

We are now providing an additional **.XLS** template for you to provide everything we need to progress to Proposal Planning **without need for further contact.**

The form shown below can be found in the **PHASE DATA Tab** of the CAD Registration Support Document. It should be saved in **.XLS** format and attached with the **.DXF** plan during Site Registration on openreach.com

PHASING DATA		e.g. PHASE 1	e.g. PHASE 2	DEVELOPER INPUT PHASE 1	DEVELOPER INPUT PHASE 2	DEVELOPER INPUT PHASE 3	DEVELOPER INPUT PHASE 4
ATTRIBUTES	PHASE_ID	A	B				
	DEMAND (PLOTS PER PHASE)	150	85				
PLOT RANGE	FIRST PLOT IN PHASE	1	151				
	LAST PLOT IN PHASE	150	235				
KEY DATES	PHASE SITE START DATE	01/02/2020	31/01/2021				
	PHASE FIRST OCCUPANCY DATE	01/09/2020	01/09/2021				
PLOT BREAKDOWN	HOUSES (SDU)	100	85				
	FLATS (PLOTS WITHIN MDU)	39	0				
	RETAIL PREMESIS	8	0				
	COMMERCIAL/INDUSTRIAL	3	0				
	OTHER	0	0				
CALCULATED FIELDS>	TOTAL PLOTS	150	85	0	0	0	0
	CHECK	Plots Matched	Plots Matched	Plots Matched	Plots Matched	Plots Matched	Plots Matched

Multiple Dwelling Units (MDU)

When submitting Plans for blocks of flats (MDU) there is additional information required that would be difficult to diplay on the **.DXF** site plan or within the CAD block attributes. Therefore we have a couple of additional requirements when you are submitting plans for MDUs

- MDU Floor Plans

A **ground floor/basement plan** for each MDU should be provided as an additional tab in the **CAD (.DXF)** file clearly showing the duct intake/cable entry point and a clearly marked riser for distribution to the upper floors.

We do not necessarily require detailed plans of each floor as these could increase the file size substantially.

We do currently require an **Accommodation Schedule** for some specific, detail information that cannot be provided within the Openreach CAD Block Attributes

- The Accommodation Schedule

For Openreach to plan MDU requirements accurately and efficiently we need some fairly specific and detailed pieces of information. As with the phasing data you may have experienced the need for further contact with the Reception Team post registration to request this data if not provided at the outset.

By providing the information below in the **ACCOMMODATION SCHEDULE Tab** of the CAD Registration Support Document you can help **reduce the need for further contact** and help us **speed up our Planning process**.

The CAD Registration Support Document is available to download from the Openreach website

The example below shows the information required to **reduce the need for further contact**

ACCOMMODATION SCHEDULE				DEVELOPER INPUT		
			e.g.			1
ATTRIBUTES	BLOCK_ID		A	BLOCK_ID		
	NUMBER_OF_FLOORS		8	NUMBER_OF_FLOORS		
	TOTAL DEMAND		39	TOTAL DEMAND		
FLOOR_DEMAND	FLOOR NAME	PLOTS PER FLOOR	PLOT IDS	FLOOR NAME	PLOTS PER FLOOR	PLOT IDS
	BASEMENT	0				
	GROUND	6	1-6			
	1	6	7-12			
	2	6	13-18			
	3	6	19-24			
	4	6	25-30			
	5	6	31-36			
	6	3	37-39			
CALCULATED FIELDS>	TOTAL PLOTS	39		TOTAL PLOTS	0	
	CHECK	Plots Matched		CHECK	Plots Matched	
	TOTAL FLOORS	8		TOTAL FLOORS	0	
	CHECK	Floors Matched		CHECK	Floors Matched	

The data required is the Block ID, the number of floors (including basements and floors with no demand) and the total demand for the block.

We also then require the floor names and the Plot demand per floor, and the plot numbers on those floors

The completed file should be saved and attached with the **.DXF** plan during Site Registration

What happens next?

Newsites Reception Validation

Once CAD plans have been submitted they will arrive with the New Sites Reception Team

Once we receive both the **.DXF** file and the **CAD Registration Support Document** we can run the files through our NetDesign Validation tool. This tool searches for the various Blocks, Layers, Attributes and data that you have provided in these files and confirms whether or not the CAD plans are ready to be passed through to our planning teams to create the Site Proposal

Successful submissions

Upon successful validation of the plans and supporting documents the information is ready to be passed on to our Planning Team who will use NetDesign to effectively plan the network and provide a detailed site network proposal back to you. This Proposal will then be refined and agreed between yourselves and our Field Based Co-Ords who will liaise with our planning teams for any changes that may occur prior to or during the build.

Invalid plans

If there is an issue identified with the CAD file during Validation the Newsites reception team will come back to you and advise on the missing requirements.

The most likely cause of failures will be:

- No OR_REF_A and/or OR_REF_B given
- Geographical Attributes (Northings and Eastings) of OR_REF_A and/or OR_REF_B not present
- Northing and Easting not provided in the correct format
- Insufficient Phase Data provided (CAD Registration Support Document)
- Insufficient or misaligned MDU information provided CAD Registration Support Document)

The Developer Portal

What is the Developer Portal?

The Developer Portal will be your new gateway to managing developments with Openreach. It is being been built in collaboration with developers considering your needs at every stage of the process.

It is currently still in the development and test stages but once launched, the Developer Portal will allow you to manage your sites throughout the entire installation journey

Once you have created company and user accounts you will be able to:

- Register New Sites
- Upload site plans (This is where CAD comes in)
- View My Site and Individual Plot details
- Request Plot Call offs
- Make in flight EDC changes

How does this link to CAD?

The portal is being designed to not only accept your **CAD .DXF** file submissions, but to make providing the required supporting information easier for you. The current registration process does not capture all the information we need for Phased sites and MDUs. This usually leads to contact being required through the Reception Team to request additional information, this can slow down the process of providing a Proposal.

The new '**Register My Site'** function in the Portal will capture everything we need upfront removing the need for multiple documents to be attached. **We intend for just one single .DXF file to be required**

Additional Resources

Where can I find more Information?

The Developer section of the Openreach Website has multiple resources and information on what Openreach will require to help you build your site

https://www.openreach.com/fibre-broadband/fibre-for-developers

Specific information Guides and Handbooks for Developers are availble via the URL

https://www.openreach.com/fibre-broadband/fibre-for-developers/guides-and-handbooks

Further information on Openreach Network services can be found at the URL

www.ournetwork.openreach.co.uk/

The Openrach Block Library, CAD Registration Support Document (Excel) and CAD Support Upload Document **(.PDF)** are all available on the Openreach Website at the URL

https://www.openreach.com/fibre-broadband/fibre-for-developers/registering-your-site

We will also be providing Videos detailing how to consume the Block Library.

NOTE: *These will be available from the link above however these are not yet available at time of print (18/11/2019)*

Who can I contact?

If you require more information on the CAD process, if you have any feedback or if you would like to discuss how this can be of benefit to both yourselves and Openreach then please do not hesitate to get in touch

You can contact the Developer Relationship Management team via developer.communications@openreach.co.uk

Or you can contact the Project Managemant team working on the CAD Process

Ryan Christie   -   ryan.christie@openreach.co.uk

Alex Baker   -   alex.2.baker@openreach.co.uk

Correct as of 18/11/2019

Thank You

Thank you very much for reading this document and for taking an interest in the new CAD process for submitting New Sites plans. We hope to receive your CAD plans soon ☺

Openreach are working hard to provide you with new innovative solutions to make the process of connecting your site communications infrastructure as simple and quick as possible.

openreach