



ORDNANCE SURVEY GB

OS VECTORMAP LOCAL – TECHNICAL SPECIFICATION

Version history

Version	Date	Description
2.0	10/2018	Specification changes, data updates and the addition of two new formats to the product – GeoPackage and GeoTIFF.
3.0	01/2022	Introduction of vector tiles format to the product. Minor formatting updates to the document.

Purpose of this document

This document provides information about and insight into the OS VectorMap Local product and its potential applications. For information on the contents and structure of OS VectorMap Local, please refer to the Overview.

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I. Introduction to the product

OS VectorMap Local is a mapping dataset designed for providing contextual mapping output on paper, PCs, hand-held devices or the Internet. The vector format of the product consists of layers to enable you to customise and style the output to suit your needs.

The product is generated automatically from the OS Large-Scale Topographic Database with no manual cartographic input. This database is used to update other OS products, including OS MasterMap Topography Layer.

This Technical Specification contains detailed technical information about the data in both raster and vector formats. For basic information required to understand and use OS VectorMap Local, please refer to the Overview, which is available on the [Product Support page on the OS website](https://www.ordnancesurvey.co.uk/business-government/tools-support/vectormap-local-support) (<https://www.ordnancesurvey.co.uk/business-government/tools-support/vectormap-local-support>).

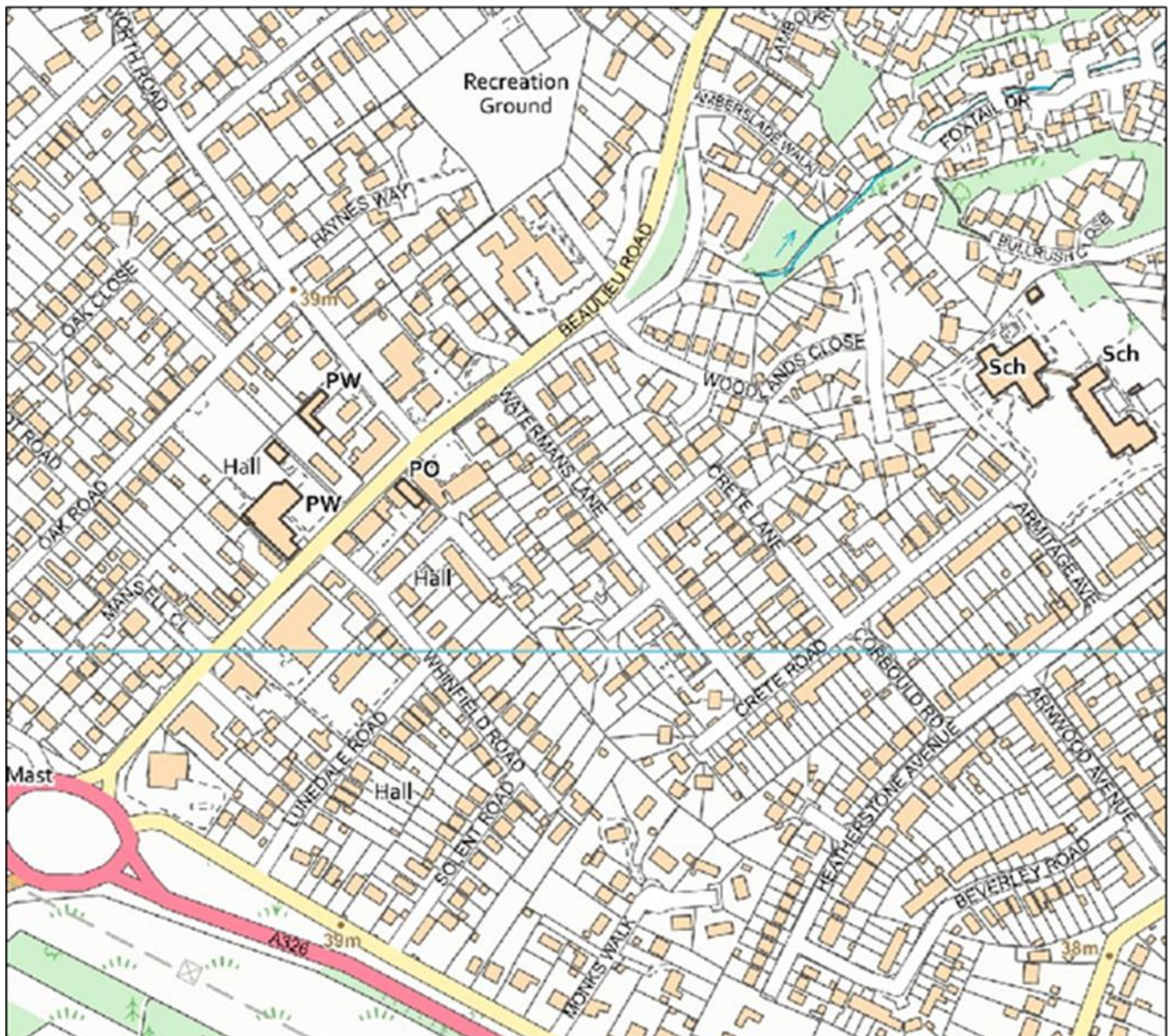


Figure 1: OS VectorMap Local Full Colour Raster map example.

2. Raster data

2.1 Available formats

OS VectorMap Local raster data is supplied in GeoTIFF file format (Geographic Tagged Image File Format). The product is available in three raster formats: Full Colour, Backdrop and Black & White.

3. GeoTIFF LZW overview

GeoTIFF LZW (Lempel Ziv Welch) is a TIFF file which has geographic (or cartographic) data embedded as tags within it. The geographic data can then be used to position the image in the correct location and with precise geometry on the screen of a geographic information display.

3.1 Image compression

When an image is compressed, duplicated data that has no value is removed or saved in a shorter form, reducing a file's size. For example, if large areas of water are the same tone, only the value for one pixel needs to be saved, together with the locations of the other pixels with the same colour. When the image is edited or displayed, the compression process is reversed. When raster data is compressed, not only are the data volumes reduced, but the user can download, display, edit and transfer images more quickly.

There are two forms of compression: lossless and lossy. OS VectorMap Local raster tiles are lossless compressed.

Lossless compression

As its name suggests, lossless compression does not lose information within an image. A lossless compression retains the original quality of an image when it is uncompressed. This process doesn't provide much compression, so file sizes remain large. Lossless compression is used mainly where detail is important, such as when planning to make large prints.

3.2 Raster specification

3.2.1 Full Colour and Backdrop

- GeoTIFF 8-bit LZW compressed
- 400 dots per inch (DPI)

3.2.2 Black & White

- GeoTIFF 1-bit LZW compressed
- 400 dots per inch (DPI)

4. Vector data

4.1 Available formats

OS VectorMap Local is available in three vector formats:

- Geography Markup Language (GML) 3.2.1
- GeoPackage
- Vector tiles (MBTiles)

These file formats contain a set of features and identifiers which conform to the data structures outlined in the following sub-sections.

4.2 Identifiers

In OS VectorMap Local vector data for GML, vector tiles and GeoPackage formats, each feature is given a unique identifier: a featureID. The featureIDs are maintained between iterations. For GML only, this allows feature-level change-only updates (COUs) to be delivered. The COUs will consist of a selection of inserts and deletes related to real-world and generalisation generated change (see the GML overview section of this document for more information). Vector tiles and GeoPackage formats do not have a COU option.

4.3 UML class diagrams and table conventions

The data structure is described below by means of unified modeling language (UML) class diagrams and accompanying tables containing text. The UML diagrams conform to the approach specified in the ISO 19103 Conceptual Schema.

Colour conventions have been used in the diagrams and tables to distinguish the properties that have been added in this specification. In the UML class diagrams, feature types in the Ordnance Survey product specification are coloured orange. The tables which follow in this Technical Specification use orange for a feature type, blue for a code list and purple for a data type.

4.4 Stereotypes

The following stereotypes are used on UML elements:

Table 1: The stereotypes used on UML elements.

Stereotype	UML element	Description
FeatureType	Class	A spatial object type [ISO 19136].
Codelist	Class	A controlled set of values for a free text data type that may be extended.
DataType	Class	Structured data type.

5. GeoPackage overview

OS VectorMap Local is supplied in GeoPackage format. GeoPackage (*.gpkg) is an open, non-proprietary, platform-independent, standards-based data format for geographic information systems (GIS), as defined by the Open Geospatial Consortium (OGC). It is designed to be a lightweight format that can contain large amounts of varied and complex data in a single, easy to distribute and ready to use file. GeoPackage is natively supported by numerous software applications. GeoPackage offer users the following benefits:

- The single file is easy to transfer and offers the end-user a rich experience.
- Attribute names are not limited in length, making the format user-friendly.
- The file size limit is very large at 140 TB¹
- It supports raster, vector and database formats, making it a highly versatile solution.
- It is an OGC standard.
- In most cases, it is a plug-and-play format.

For information on how to open, use and understand a GeoPackage dataset, please refer to our [‘Getting Started with GeoPackage’ guide](https://www.ordnancesurvey.co.uk/documents/getting-started-with-geopackage.pdf) (<https://www.ordnancesurvey.co.uk/documents/getting-started-with-geopackage.pdf>), which is available on the OS website. Further detailed information on GeoPackage can be taken from the [GeoPackage website](https://www.geopackage.org/) (<https://www.geopackage.org/>).

5.1 Booleans in GeoPackage

GeoPackage outputs Booleans as integers, either ‘1’ or ‘0’, where ‘1’ = ‘true’ and ‘0’ = ‘false’. These data types are used on override, suppressed and inTunnel attributes for the RoadCLine Feature Type and on suppressed and inTunnel attributes for the RailCLine Feature Type (see Figure 2). GML outputs Booleans as ‘true’ and ‘false’ values.

5.2 GeoPackage tables

In instances where a particular feature class is not present in the GML, no tables will be created in the output GeoPackage. For example, some of the sparsely populated tiles may not contain a road or rail feature; in this case, the GeoPackage will be created without RoadCLine and / or RailCLine tables.

¹ A file size limit might be imposed by the file system to which the file is written.

5.3 GeoPackage data structure and attribution



Figure 2: UML class diagram of the OS VectorMap Local feature types for the GeoPackage supply,

6. GML overview

Geography Markup Language (GML) is an XML grammar for expressing geographic features. GML serves as a modeling language for geographic systems as well as an open interchange format for geographic transactions on the Internet. More information can be found on the [Geography Markup Language Standards page on the Open Geospatial Consortium \(OGC\) website](https://www.ogc.org/standards/gml) (<https://www.ogc.org/standards/gml>).

The XML specifications that GML is based on are available from the [World Wide Web Consortium \(W3C\) website](https://www.w3.org/) (<https://www.w3.org/>).

Information about Unicode and UTF-8, the character encoding we have chosen, is available on the [Unicode Consortium website](https://home.unicode.org/) (<https://home.unicode.org/>).

6.1 Clarification of terms used in this section

- **Feature attribute:** A property of a feature implemented as an XML element, as defined in ISO 19109.
- **XML attribute:** Attribute as used in an XML context is referred to as an XML attribute.
- **Property:** Most feature attributes are encoded as GML properties – property means a GML property.

6.2 Schema overview and location

XML schemas are used to define and validate the format and content of the GML. The GML 3.2.1 specification provides a set of schemas that define the GML feature constructs and geometric types. These are designed to be used as a basis for building application-specific schemas, which define the data content.

The Ordnance Survey application schemas, which are referenced by the data, are available online. These schemas make use of XML schema definitions (XSDs) and document type definitions (DTDs) produced by the W3C, which are available from the [W3C website](https://www.w3.org/XML/1998/namespace.html) (<https://www.w3.org/XML/1998/namespace.html>).

6.2.1 Schema descriptions

The W3C-provided XSDs and DTDs are as follows:

- **xml.xsd:** to allow the use of the xml:lang attribute for language qualification.
- **XMLSchema.dtd:** Required by xml.xsd.
- **datatypes.dtd:** Required by XMLSchema.dtd.

The OGC-provided schemas are:

- **feature.xsd:** The feature and property constructs.
- **geometry.xsd:** The geometric constructs, such as polygon and point.

- **xlinks.xsd:** A schema based on the W3C XLINK recommendation provided by the OGC to make use of the XLINK constructs.

The Ordnance Survey-provided schema is as follows:

- **OSVectorMapLocal.xsd:** The feature type, complex type, and simple type declarations.

6.3 Code list dictionaries

- [Code list dictionary for FeatureCodeValue](https://www.os.uk/xml/codelists/FeatureCodeValue.xml) (<https://www.os.uk/xml/codelists/FeatureCodeValue.xml>)
- [Code list dictionary for FeatureDescriptionValue](https://www.os.uk/xml/codelists/FeatureDescriptionValue.xml) (<https://www.os.uk/xml/codelists/FeatureDescriptionValue.xml>)
- [Code list dictionary for TextFontValue](https://www.os.uk/xml/codelists/TextFontValue.xml) (<https://www.os.uk/xml/codelists/TextFontValue.xml>)
- [Code list dictionary for DrawLevelValue](https://www.os.uk/xml/codelists/DrawLevelValue.xml) (<https://www.os.uk/xml/codelists/DrawLevelValue.xml>)
- [Code list dictionary for AnchorPositionValue](https://www.os.uk/xml/codelists/AnchorPositionValue.xml) (<https://www.os.uk/xml/codelists/AnchorPositionValue.xml>)

6.4 Format description

6.4.1 Documentation

The 'OSVectorMapLocal' schema document defines the following XML namespaces:

- local <http://namespaces.ordnancesurvey.co.uk/cmd/local/v2>
- gml <http://www.opengis.net/gml>
- xsi <http://www.w3.org/2001/XMLSchema>

The location of the schema is defined as:

<https://www.ordnancesurvey.co.uk/xml/cmdschema/local/V2/OSVectorMapLocal.xsd>

6.4.2 Simple Features Profile – Level 0

GML is designed to support a wide variety of capabilities, ranging from simple contextual mapping, such as OS VectorMap Local, to products that include complex geometric property types or even spatial and temporal topology. The Simple Features Profile of GML 3.2.1 defines a restricted subset of GML, allowing scope for greater interoperability.

This product conforms to Simple Features Profile – Level 0.

6.4.3 Geometry

A geometric property is one that describes a specific geometry. All geometric properties are encoded according to the Simple Features Profile, as referenced above.

The XML attribute 'srsName' shall be set to 'urn:ogc:def:crs:EPSG::27700', which uses eastings and northings specified in metres.

NOTE: EPSG (European Petroleum Survey Group) provides numeric identifiers for many common projections and associated projections or coordinate metadata (such as measurement units or central meridian) for each identifier.

6.5 Changes in GML data formats

OS VectorMap Local data is available in GML 3.2.1, the most up-to-date version of GML used by Ordnance Survey. This is a simplified single file schema. Code lists will be managed as Code list dictionaries, residing outside of the product schema. Enumerations have been removed.

GML 3.2.1 is supported by most software suppliers and can be read natively with multiple GIS packages without the need for a translator.

6.6 Feature level change

OS VectorMap Local will provide GML feature-level change-only updates (COUs). Only change features will be supplied, rather than all of the data within a tile that has change within it. The product contains maintained feature-level identifiers to enable change to be detected between releases. These identifiers will not have version information.

The features within a COU file will be supplied as transactions. In the OS VectorMap Local product, a transaction identifies whether a feature is new or if it has been removed from the product. These two types of transaction are defined as follows:

1. **<os:insert>** These are features which have been newly inserted into the product or the customer's area of interest (AOI) since the last product supply.
2. **<os:delete>** These are features which have ceased to exist in the last product release or features that have moved out of the customer's AOI. Features which have been deleted will be supplied with the entire feature's attribution. These features should be removed from the customer's live data holding.

Note: Existing features which have undergone a generalisation, geometry or attribution change since the previous release will be managed in the following way: the feature that existed in the previous release will be entered as a deleted feature in the new COU release, and a new feature with a new ID will be added as an insert, replacing the deleted feature.

6.6.1 Non-tile-bound features

In order to maintain the topological relationships of features, the product will not ‘cut’ features at tile edges. This will remove the requirement to merge features which have been separated artificially at tile edges. Exceptions to this include contours, tidal limits (mean high and mean low water) and boundary features.

This will require holdings to be de-duplicated once all tiles have been loaded due to duplication of features which cross tile edges.

6.6.2 Modifications to feature types, feature codes and descriptions

In order to remove legacy data and improve the analytical capability of the product, we have added an additional feature class, RailCLine. A number of feature codes have been added, while others have been removed.

6.7 GML data structure and attribution

The unified modeling language (UML) class diagram of OS VectorMap Local in GML format can be seen in Figure 3. In the UML diagram, feature types from the Ordnance Survey product specification are orange, all code lists are coloured blue and data type is purple.

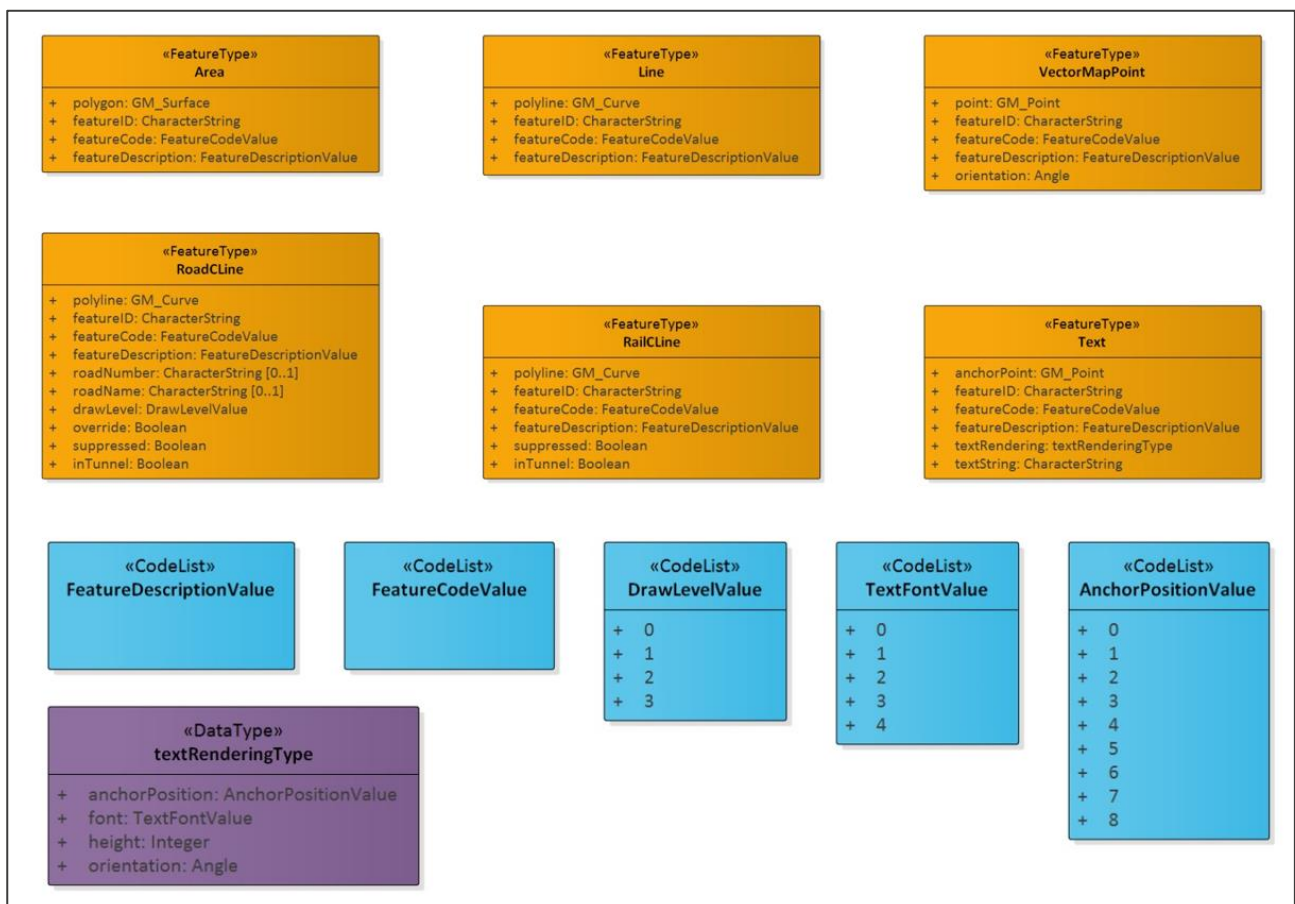


Figure 3: UML class diagram showing the OS VectorMap Local feature types, code lists and data type for the GML supply.

6.7.1 Area Feature Type

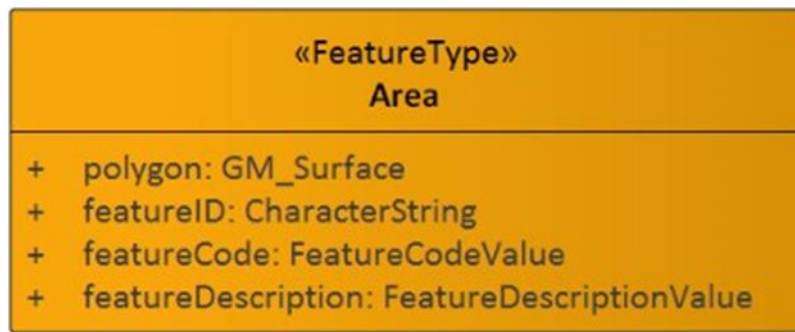


Figure 4: UML diagram showing the Area Feature Type in the GML supply.

«FeatureType» Area		
Definition: Features representing topographic objects that have a polygon-based geometry.		
Attribute: polygon		
Definition: A polygon is a single closed region defined by a set of lines that represent the boundaries.		
Type: GM_Surface	Length: N/A	Multiplicity: [1]
Attribute: featureID		
Definition: A unique feature identification. IDs will be retained between iterations, but they will not be version controlled.		
Type: CharacterString	Length: 38	Multiplicity: [1]
Attribute: featureCode		
Definition: A unique feature code to facilitate analysis and styling.		
Type: FeatureCodeValue	Length: 5	Multiplicity: [1]
Attribute: featureDescription		
Definition: A description of the feature code.		
Type: FeatureDescriptionValue	Length: 60	Multiplicity: [1]

6.7.2 Line Feature Type

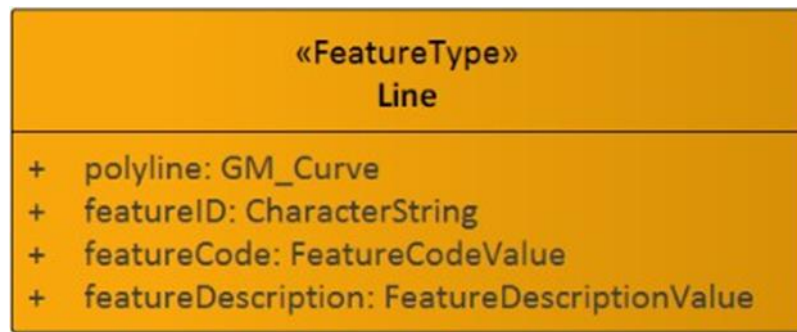


Figure 5: UML diagram showing the Line Feature Type in the GML supply.

«FeatureType» Line		
Definition: Features representing topographic objects and concepts that have a line-based geometry.		
Attribute: polyline		
Definition: An ordered set of points forming a line feature.		
Type: GM_Curve	Length: N/A	Multiplicity: [1]
Attribute: featureID		
Definition: A unique feature identification. IDs will be retained between iterations but will not be version controlled.		
Type: CharacterString	Length: 38	Multiplicity: [1]
Attribute: featureCode		
Definition: A unique feature code to facilitate analysis and styling.		
Type: FeatureCodeValue	Length: 5	Multiplicity: [1]
Attribute: featureDescription		
Definition: A description of the feature code.		
Type: FeatureDescriptionValue	Length: 60	Multiplicity: [1]

6.7.3 VectorMapPoint Feature Type

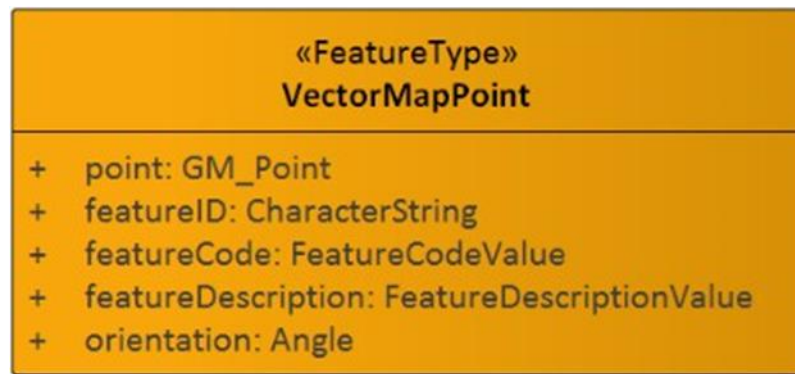


Figure 6: UML diagram showing the VectorMapPoint Feature Type in the GML supply.

«FeatureType» VectorMapPoint		
Definition: Features representing topographic objects and other concepts that have a point-based geometry.		
Attribute: point		
Definition: A pair of easting and northing co-ordinates in metres, defining a horizontal location in the British National Grid spatial reference system.		
Type: GM_Point	Length: N/A	Multiplicity: [1]
Attribute: featureID		
Definition: A unique feature identification. IDs will be retained between iterations but will not be version controlled.		
Type: CharacterString	Length: 38	Multiplicity: [1]
Attribute: featureCode		
Definition: A unique feature code to facilitate analysis and styling.		
Type: FeatureCodeValue	Length: 5	Multiplicity: [1]
Attribute: featureDescription		
Definition: A description of the feature code.		
Type: FeatureDescriptionValue	Length: 60	Multiplicity: [1]
Attribute: orientation		
Definition: The orientation of symbol features for cartographic placement. Given in tenths of a degree anticlockwise from due east (0–3599).		
Type: Angle	Length: 4	Multiplicity: [1]

6.7.4 RoadCLine Feature Type

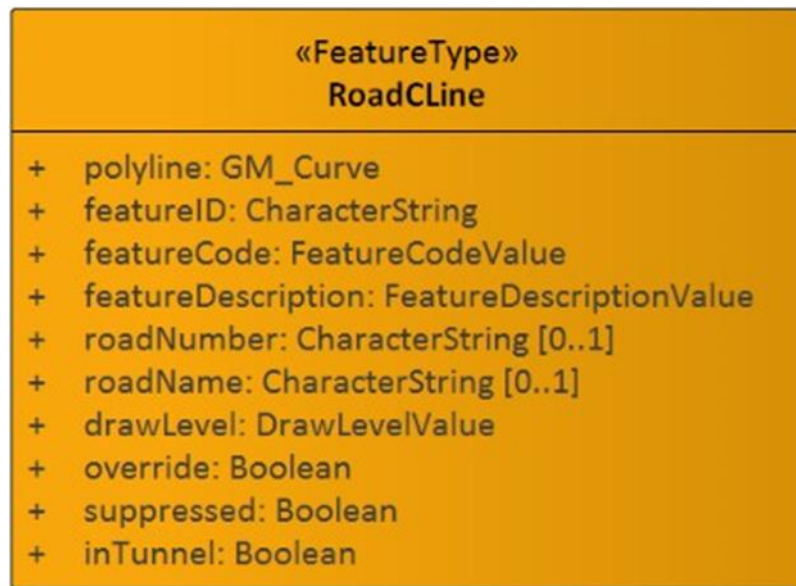


Figure 7: UML diagram showing the RoadCLine Feature Type in the GML supply.

«FeatureType» RoadCLine		
Definition: Line representing the alignment of a road centre line.		
Attribute: polyline		
Definition: An ordered set of points forming a line feature.		
Type: GM_Curve	Length: N/A	Multiplicity: [1]
Attribute: featureID		
Definition: A unique feature identification. IDs will be retained between iterations but will not be version controlled.		
Type: CharacterString	Length: 38	Multiplicity: [1]
Attribute: featureCode		
Definition: A unique feature code to facilitate analysis and styling.		
Type: FeatureCodeValue	Length: 5	Multiplicity: [1]
Attribute: featureDescription		
Definition: A description of the feature code.		
Type: FeatureDescriptionValue	Length: 60	Multiplicity: [1]
Attribute: roadNumber		
Definition: The number of the road defined by the Department for Transport.		
Type: CharacterString	Length: 5	Multiplicity: [0..1]

«FeatureType» RoadCLine		
Attribute: roadName		
Definition: The name of the road as reflected in local signage.		
Type: CharacterString	Length: 100	Multiplicity: [0..1]
Attribute: drawLevel		
Definition: The drawLevel value of the Road, used for cartographic styling. The valid values are defined in the DrawLevelValue code list.		
Type: DrawLevelValue	Length: 1	Multiplicity: [1]
Attribute: override		
Definition: The override value of the Road, used for cartographic styling.		
Type: Boolean	Length: N/A	Multiplicity: [1]
Attribute: suppressed		
Definition: The suppressed value of the Road, used for cartographic styling.		
Type: Boolean	Length: N/A	Multiplicity: [1]
Attribute: inTunnel		
Definition: Determines whether the road alignment is in a tunnel and is used for cartographic styling.		
Type: Boolean	Length: N/A	Multiplicity: [1]

6.7.5 Code list: DrawLevelValue

Code list: DrawLevelValue	
Value	Description
0	The default draw level. Roads with draw level 0 are to be displayed first, with draw levels 1, 2 and 3 overlaid on top.
1	Used for road bridges and overpasses. Roads with draw level 1 are to be overlaid on top of draw level 0.
2	Used when there are several coincident levels of road bridge or overpass. Roads with draw level 2 are to be overlaid on top of draw levels 0 and 1.
3	Used when there are several coincident levels of road bridge or overpass. Roads with draw level 3 are to be overlaid on top of draw levels 0, 1 and 2.

6.7.6 RailCLine Feature Type

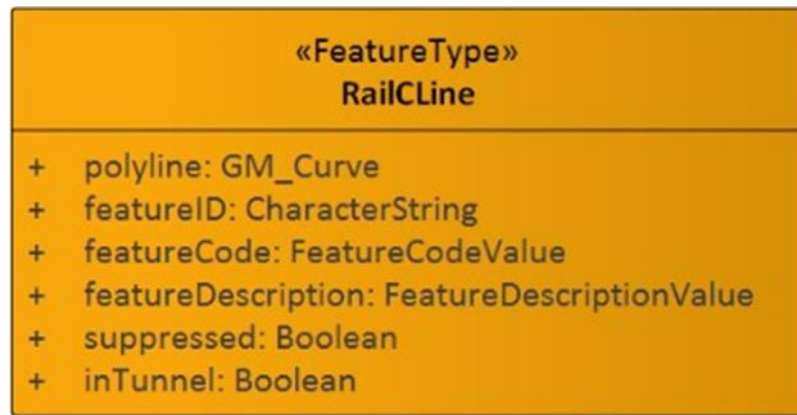


Figure 8: UML diagram showing the RailCLine Feature Type in the GML supply

«FeatureType» RailCLine		
Definition: Line representing the estimated centre line of a rail.		
Attribute: polyline		
Definition: An ordered set of points forming a line feature.		
Type: GM_Curve	Length: N/A	Multiplicity: [1]
Attribute: featureID		
Definition: A unique feature identification. IDs will be retained between iterations but will not be version controlled.		
Type: CharacterString	Length: 38	Multiplicity: [1]
Attribute: featureCode		
Definition: A unique feature code to facilitate analysis and styling.		
Type: FeatureCodeValue	Length: 5	Multiplicity: [1]
Attribute: featureDescription		
Definition: A description of the feature code.		
Type: FeatureDescriptionValue	Length: 60	Multiplicity: [1]
Attribute: suppressed		
Definition: The suppressed value of the Road, used for cartographic styling.		
Type: Boolean	Length: N/A	Multiplicity: [1]
Attribute: inTunnel		
Definition: Determines whether the road alignment is in a tunnel and is used for cartographic styling.		
Type: Boolean	Length: N/A	Multiplicity: [1]

6.7.7 Text Feature Type

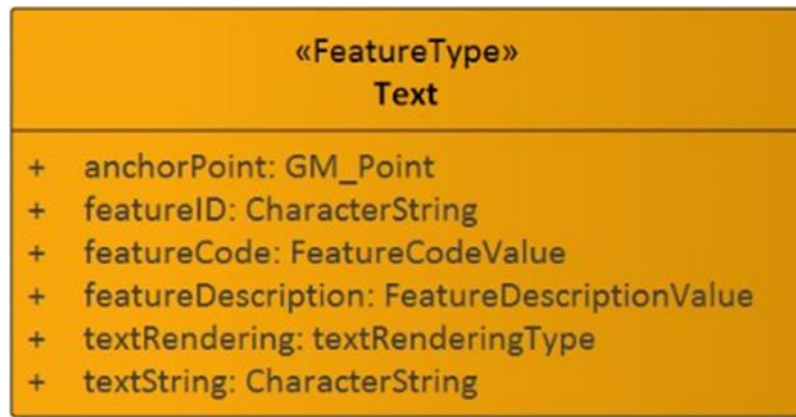


Figure 9: UML diagram showing the Text Feature Type in the GML supply

«FeatureType» Text		
Definition: Text features fixed positionally by one co-ordinate pair.		
Attribute: anchorPoint		
Definition: The coordinate position that a piece of text is positioned relative to.		
Type: GM_Point	Length: N/A	Multiplicity: [1]
Attribute: featureID		
Definition: A unique feature identification. IDs will be retained between iterations but will not be version controlled.		
Type: CharacterString	Length: 38	Multiplicity: [1]
Attribute: featureCode		
Definition: A unique feature code to facilitate analysis and styling.		
Type: FeatureCodeValue	Length: 5	Multiplicity: [1]
Attribute: featureDescription		
Definition: A description of what the feature codes represent.		
Type: FeatureDescriptionValue	Length: 60	Multiplicity: [1]
Attribute: textRendering		
Definition: Provides the information to graphically display a text string in harmony with the underlying map detail and consists of anchorPosition, font, height and orientation.		
Type: textRenderingType	Length: N/A	Multiplicity: [1]
Attribute: textString		
Definition: Textual information that can be rendered using the textRendering attribute.		
Type: CharacterString	Length: 150	Multiplicity: [1]

6.7.8 Data type: textRenderingType

«DataType» textRenderingType		
Definition: Attribution that defines text placement and appearance.		
Attribute: anchorPosition		
Definition: A number between 0 and 8 that specifies which part of the text is bound to the anchorPoint.		
Type: AnchorPositionValue	Length: 1	Multiplicity: [1]
Attribute: font		
Definition: A value of 0, 1 or 4 that can be used as a basis for determining which font to use when displaying the text.		
Type: TextFontValue	Length: 1	Multiplicity: [1]
Attribute: height		
Definition: The height of Text. The height is expressed as the distance on the ground covered by the text, in metres.		
Type: Integer	Length: 3	Multiplicity: [1]
Attribute: orientation		
Definition: The orientation of text or symbol features for cartographic placement, and for text. Given in tenths of a degree anticlockwise from due east (0–3599).		
Type: Angle	Length: 5	Multiplicity: [1]

6.7.9 Code list: AnchorPositionValue

Code list: AnchorPositionValue	
Value	Description
0	Lower left text anchor position.
1	Middle left text anchor position.
2	Upper left text anchor position.
3	Lower middle text anchor position.
4	Centre text anchor position.
5	Upper middle text anchor position.
6	Lower right text anchor position.
7	Middle right text anchor position.
8	Upper right text anchor position.

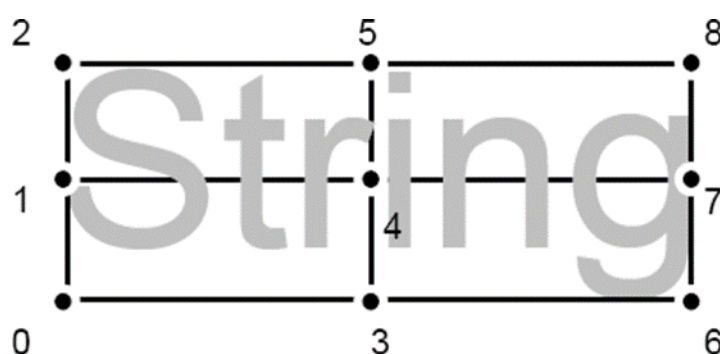


Figure 10: Illustration of AnchorPositionValue.

6.7.10 Code list: TextFontValue

Code list: TextFontValue	
Value	Description
0	Antiquity descriptions
1	Default
2	N/A (obsolete value that's no longer utilised in the Text Feature Type)
3	N/A (obsolete value that's no longer utilised in the Text Feature Type)
4	Detailed road names

6.8 Feature codes and descriptions

Code list: FeatureCodeValue	Code list: FeatureDescriptionValue	Notes (where applicable)
I5010	Building Outline	N/A
I5011	Important Building Outline	Buildings defined as important by OS (see Annex A).
I5013	Glasshouse Outline	N/A
I5017	Building Name	N/A
I5014	Building Polygon	Building polygons over 20m ² .
I5015	Important Building Name	N/A
I5016	Glasshouse Polygon	Glasshouse's polygons over 50m ² .
I5030	Urban Extent	An OS approximation of the extents of urban development.

Code list: FeatureCodeValue	Code list: FeatureDescriptionValue	Notes (where applicable)
I5031	Urban General Line Detail	Real-world linear features, including fences, hedges, walls and other minor detail within OS urban areas.
I5032	Rural General Line Detail	Real-world linear features, including fences, hedges, walls and other minor detail in rural areas.
I5033	Urban General Pecked Detail	Tracks and paths and other non-obstructing features within urban areas.
I5044	Rural General Pecked Detail	Tracks and paths and other non-obstructing features within rural areas.
I5100	Tunnel Alignments	N/A
I5101	Overhead Peck Detail	Overhead features that are not power lines, for example, aerial ropeways and ski lifts.
I5102	Electricity Transmission Line	N/A
I5104	Pylon	N/A
I5110	Point Feature I	Generic topographic features which are too small to be represented by an area feature, for example, posts, poles, masts, and wind turbines.
I5120	Antiquity Site	N/A
I5121	Antiquity Building Name	N/A
I5112	Miscellaneous Name	Most generic text, including towns, cities, buildings and general areas names, for example, commons or woodland, etc.
I5122	Antiquity Miscellaneous Name	N/A
I5200	Parish Or Community Boundary	N/A
I5201	District Or LB Boundary	N/A
I5202	County, Region Or Island Boundary	N/A
I5203	Parliamentary Boundary	N/A
I5210	Boundary Text	N/A
5211	Boundary Point	N/A
I5300	Multi Track Railway	N/A
I5302	Narrow Gauge Railway	N/A
I5301	Single Track Railway Or Siding	N/A

Code list: FeatureCodeValue	Code list: FeatureDescriptionValue	Notes (where applicable)
I5303	Railway Bridge	N/A
I5304	Footbridge	N/A
I5400	Standard Contour Line	5m vertical interval contour intervals.
I5401	Index Contour Line	25m vertical interval contour intervals.
I5403	Index Contour Label	Index contour height value.
I5404	Spot Height Label	N/A
I5405	Spot Height Position	N/A
I5406	Air Height Position	N/A
I5407	Air Height Label	N/A
I5408	Triangulation Station	N/A
I5409	Standard Contour Label	Standard contour height value.
I5410	Ridge Or Rock Line	N/A
I5442	Refuse Or Slag Heap	N/A
I5500	Coniferous Woodland	N/A
I5501	Coniferous Woodland And Shrub	N/A
I5502	Mixed Woodland	N/A
I5503	Mixed Woodland And Shrub	N/A
I5504	Broad-leaved Woodland	N/A
I5505	Broad-leaved Woodland And Shrub	N/A
I5506	Orchard	N/A
I5507	Shrub	N/A
I5508	Shrub And Heathland	N/A
I5509	Shrub And Unimproved Grass	N/A
I5510	Shrub And Unimproved Grass And Boulders	N/A
I5511	Shrub And Marsh	N/A
I5512	Shrub And Marsh And Heath	N/A
I5513	Shrub And Marsh And Unimproved Grass	N/A

Code list: FeatureCodeValue	Code list: FeatureDescriptionValue	Notes (where applicable)
I5514	Shrub And Heathland And Unimproved Grass	N/A
I5515	Shrub And Heathland And Boulders	N/A
I5516	Shrub And Boulders	N/A
I5517	Heathland	N/A
I5518	Heathland And Unimproved Grass	N/A
I5519	Heathland And Unimproved Grass And Boulders	N/A
I5520	Heathland And Boulders	N/A
I5521	Heathland And Marsh	N/A
I5522	Unimproved Grass	N/A
I5523	Unimproved Grass And Boulders	N/A
I5524	Unimproved Grass And Shingle	N/A
I5525	Unimproved Grass And Sand	N/A
I5526	Marsh	N/A
I5527	Marsh And Unimproved Grass	N/A
I5528	Reeds	N/A
I5529	Inland Rock	N/A
I5530	Boulders	N/A
I5531	Boulders And Shingle	N/A
I5532	Boulders And Sand	N/A
I5533	Boulders And Mud	N/A
I5534	Shingle	N/A
I5535	Shingle And Sand	N/A
I5536	Shingle And Mud	N/A
I5537	Sand	N/A
I5538	Mud	N/A
I5540	Vegetation Or Landform Limit	N/A

Code list: FeatureCodeValue	Code list: FeatureDescriptionValue	Notes (where applicable)
I5550	Custom Landform Polygon	A polygon to contain representations of rocks, cliffs, scree and extensive areas of slope.
I5560	Top Of Standard Slopes	N/A
I5562	Top Of Cliff	N/A
I5600	Water Feature	N/A
I5601	Aqueduct	N/A
I5603	Water Name	N/A
I5604	Mean High Water	N/A
I5605	Mean Low Water	N/A
I5606	Point Feature Water I	Generic water features which are too small to be represented by an area feature, for example, wells, springs and collects.
I5608	Sea Polygon	N/A
I5609	Inland Water Polygon	Larger inland water bodies, for example, lakes and ponds.
I5610	Standard Flow Arrow	Indicates direction of flow.
I5611	Large Flow Arrow	Indicates direction of flow on larger water bodies.
I5701	General Road Name	N/A
I5710	Motorway, Alignment	N/A
I5711	Motorway, Road Number	N/A
I5712	Motorway, Road Name	N/A
I5720	A Road, Trunk, Alignment	N/A
I5721	A Road, Trunk, Road Name	N/A
I5722	A Road, Trunk, Road Number	N/A
I5723	A Road, Primary, Alignment	N/A
I5724	A Road, Primary, Road Name	N/A
I5725	A Road, Primary, Road Number	N/A
I5726	A Road, Primary And Trunk, Alignment	N/A
I5727	A Road, Primary And Trunk, Road Name	N/A

Code list: FeatureCodeValue	Code list: FeatureDescriptionValue	Notes (where applicable)
I5728	A Road, Primary And Trunk, Road Number	N/A
I5729	A Road, Alignment	N/A
I5730	A Road, Road Name	N/A
I5731	A Road, Road Number	N/A
I5740	B Road, Primary, Alignment	N/A
I5741	B Road, Primary, Road Name	N/A
I5742	B Road, Primary, Road Number	N/A
I5743	B Road, Alignment	N/A
I5744	B Road, Road Name	N/A
I5745	B Road, Road Number	N/A
I5750	Minor Road, Alignment	N/A
I5751	Minor Road, Road Name	N/A
I5760	Local Road, Alignment	N/A
I5782	Restricted Local Access Road, Alignment	N/A
I5761	Local Road, Road Name	N/A
I5790	Local Road, Shared Use Carriageway, Alignment	N/A
I5770	Secondary Access Road, Alignment	N/A
I5791	Local Road, Shared Use Carriageway, Road Name	N/A
I5771	Secondary Access Road, Road Name	N/A
I5793	Restricted Local Access Road, Guided Busway, Alignment	N/A
I5780	Local Access Road, Alignment	N/A
I5794	Restricted Local Access Road, Guided Busway, Road Name	N/A

Code list: FeatureCodeValue	Code list: FeatureDescriptionValue	Notes (where applicable)
15781	Local Access Road, Road Name	N/A
15783	Restricted Local Access Road, Road Name	N/A
15795	Enclosed Traffic Area, Alignment	Used to ensure road connectivity through enclosed traffic areas, for example, car parks.

7. Vector tiles overview

OS VectorMap Local is supplied as a national vector tiles set in a single MBTiles file (combined from individual PBF tiles). This is a lightweight set of tiles that are efficient and fast to render in supported software, provide high-resolution data and give a seamless experience when zooming in and out. The data is supplied in Web Mercator projection (EPSG:3857).

7.1 Vector tiles schema

The vector tiles schema is detailed in the following table. In the zoom levels columns within the table, the letter *N* indicates that the specified layer and attribute is not mapped within that zoom level, whereas the letter *Y* indicates that the specified layer and attribute is mapped within that zoom level.

Layer	Attribute	Zoom levels						
		0 to 8	9	10	11	12	13	14
area	feature_id	N	Y	Y	Y	Y	Y	Y
	feature_code	N	Y	Y	Y	Y	Y	Y
	feature_description	N	Y	Y	Y	Y	Y	Y
line	feature_id	N	Y	Y	Y	Y	Y	Y
	feature_code	N	Y	Y	Y	Y	Y	Y
	feature_description	N	Y	Y	Y	Y	Y	Y
vector_map_point	feature_id	N	Y	Y	Y	Y	Y	Y
	feature_code	N	Y	Y	Y	Y	Y	Y
	feature_description	N	Y	Y	Y	Y	Y	Y
	orientation	N	Y	Y	Y	Y	Y	Y
road_cline	feature_id	N	Y	Y	Y	Y	Y	Y
	feature_code	N	Y	Y	Y	Y	Y	Y
	feature_description	N	Y	Y	Y	Y	Y	Y
	road_number	N	Y	Y	Y	Y	Y	Y
	road_name	N	Y	Y	Y	Y	Y	Y
	draw_level	N	Y	Y	Y	Y	Y	Y
	override	N	Y	Y	Y	Y	Y	Y
	suppressed	N	Y	Y	Y	Y	Y	Y
	in_tunnel	N	Y	Y	Y	Y	Y	Y

Layer	Attribute	Zoom levels						
		0 to 8	9	10	11	12	13	14
rail_cline	feature_id	N	Y	Y	Y	Y	Y	Y
	feature_code	N	Y	Y	Y	Y	Y	Y
	feature_description	N	Y	Y	Y	Y	Y	Y
	suppressed	N	Y	Y	Y	Y	Y	Y
	in_tunnel	N	Y	Y	Y	Y	Y	Y
text	feature_id	N	Y	Y	Y	Y	Y	Y
	feature_code	N	Y	Y	Y	Y	Y	Y
	feature_description	N	Y	Y	Y	Y	Y	Y
	text_rendering_anchor_position	N	Y	Y	Y	Y	Y	Y
	text_rendering_font	N	Y	Y	Y	Y	Y	Y
	text_rendering_height	N	Y	Y	Y	Y	Y	Y
	text_rendering_orientation	N	Y	Y	Y	Y	Y	Y
	text_string	N	Y	Y	Y	Y	Y	Y

Annex A: Important Buildings classification

The following OS-defined Functional Sites have been classified as Important Buildings in OS VectorMap Local:

Emergency services

- Coastguard Lookout
- Fire Service Training
- Fire Station
- Hospice
- Hospital
- Lifeboat Station
- Police HQ
- Police Services
- Police Station

Education

- First School
- Further Education
- Higher Education
- Infant School
- Junior School
- Middle School
- Non-State Primary Or Preparatory School
- Non-State Secondary School
- Primary School
- School
- School For Special Needs
- Secondary School
- University
- University College

Places of Worship

- Place Of Worship
- Cathedral
- Chapel
- Church
- Citadel
- Gurdwara
- Kingdom Hall
- Minster
- Mosque
- Synagogue
- Temple

Transport

- Bus Station
- Coach Station
- Funicular Railway Station Or Stop
- Passenger Ferry Terminal
- Preserved Line Railway Station Or Stop
- Principal Railway Station
- Railway Station
- Ship Passenger Terminal
- Vehicular Ferry Terminal
- Vehicular Ferry Terminal International
- Vehicular Rail Terminal
- Tram Station Or Stop
- Underground Railway System Station

Museums

- Aviation Museum
- Industrial Museum
- Maritime Museum
- Military Museum
- Museum
- Science Museum
- Transport Museum

Government Buildings

- Central Government Services
- Customs Inspection
- HM Detention Centre
- HM Prison Service
- Law Court
- Local Government Services

Miscellaneous

- Conference Or Exhibition Centre
- Hostel
- Library
- Observatory
- Post Office
- Tourist Information
- Youth Hostel