



Ordnance Survey

OS MasterMap Greenspace

Technical specification

OS MasterMap Greenspace Layer

Technical specification

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Preface

Purpose of this specification and disclaimer

This is the product specification (hereafter referred to as the specification) applicable to OS MasterMap Greenspace Layer (hereafter referred to as MasterMap Greenspace). Changes to this specification may be made in collaboration with Greenspace stakeholders.

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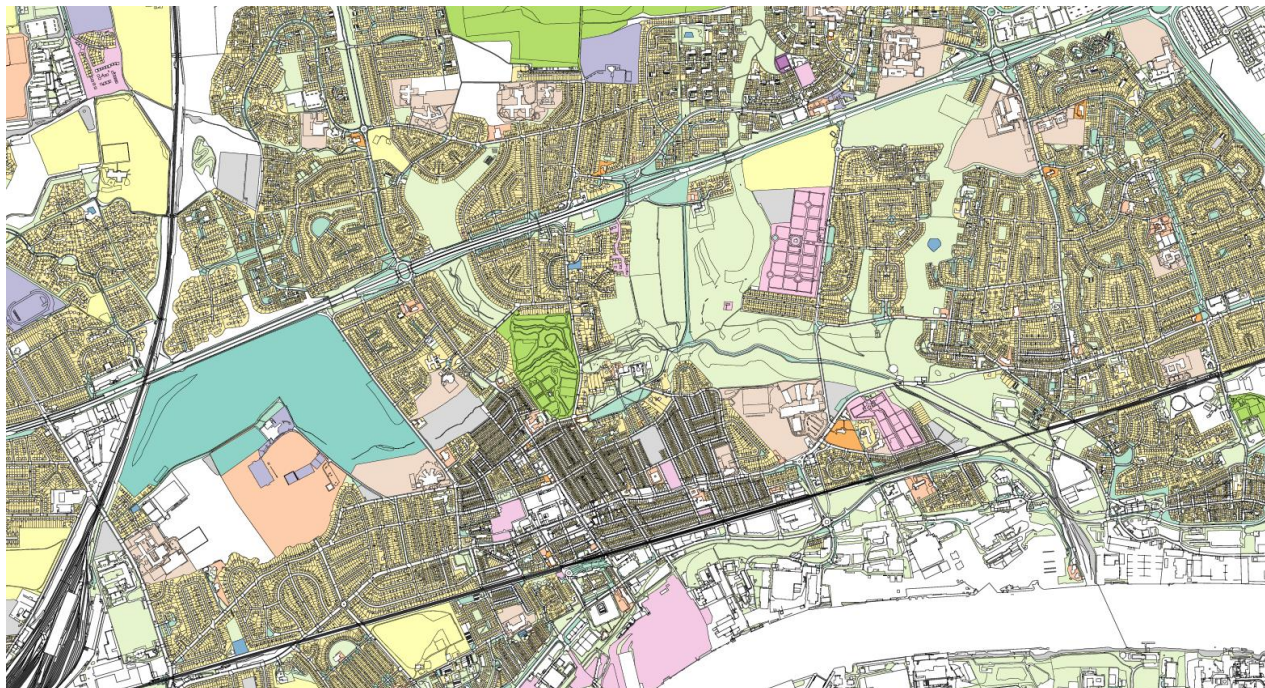
Using this specification

The documentation is supplied in portable document format (PDF) only. Free Adobe® Reader® software, which displays the specification, incorporates search and zoom facilities and allows you to navigate within. Hyperlinks are used to navigate between associated parts of the specification and to relevant Internet resources by clicking on the blue hyperlinks and the table of contents.

Chapter 1 Introduction

Product Overview

MasterMap Greenspace Layer gives a comprehensive view of the greenspaces within an urban area. The dataset comprises of topographic areas published in OS MasterMap Topography Layer, with additional greenspace-specific attribution to describe their function. It includes both publicly accessible and private greenspaces. This product is designed for Public Sector Mapping Agreement (PSMA) and One Scotland Mapping Agreement (OSMA) customers.



Greenspace MasterMap data showing detailed polygons, overlaid on OS MasterMap Topography Layer

Chapter 2 Data Classification and Structure

MasterMap Greenspace Classification scheme

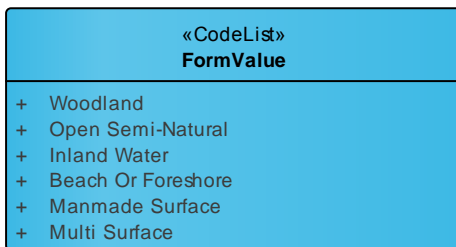
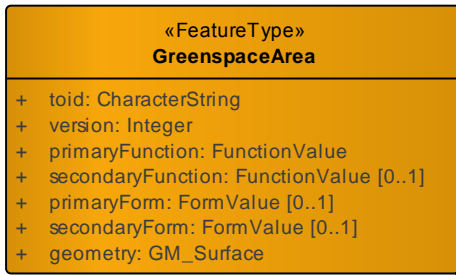
MasterMap Greenspace consists of the following general classifications:

- Public parks or gardens
- Private gardens or grounds
- Amenity greenspace
- Play spaces
- Sports areas and playing fields
- Natural or semi-natural greenspaces
- Allotments or community growing spaces
- Churchyards or burial grounds
- Camping or caravan sites
- Areas undergoing land use change

A full list of the definitions of these classifications is included in the code lists below.

Model Overview

MasterMap Greenspace is constructed as per the following UML diagram:



Feature Type and Geometry

MasterMap Greenspace is comprised of a subset of the *TopographicArea* polygons from OSMM Topography Layer (which represent topographic objects that have a polygon-based geometry). Only polygons which have been classified as a type of greenspace will be supplied. This subset of polygons will have the Topographic Identifier (TOID) and Version number from Topography Layer (to enable the datasets to be used in conjunction) plus additional attributes providing the greenspace specific information.

Attribution

MasterMap Greenspace data contains one feature type with the following attribution:

«FeatureType» GreenspaceArea		
Definition: Polygon defining the area of the feature		
Attribute: toid		
Definition: The unique reference number of the feature in OSMM Topography Layer. Combined with the version number, this enables joins with the Topography Layer dataset.		
Type: CharacterString	Length: 20	Multiplicity: [1]
Attribute: version		
Definition: The version number of the feature in OSMM Topography Layer. This identifies the specific version of Topography Layer feature this dataset was created from. Combined with the TOID, this enables joins with the Topography Layer dataset.		
Type: integer	Length: 3	Multiplicity: [1]
Attribute: primaryFunction		
Definition: The main function of the greenspace area.		
Type: Function	Length: 40	Multiplicity: [1]
Attribute: secondaryFunction		
Definition: The secondary function of the greenspace area, if applicable.		
Type: Function	Length: 40	Multiplicity: [0..1]
Attribute: primaryForm		
Definition: Type of land cover present.		
Type: Form	Length: 20	Multiplicity: [0..1]
Attribute: secondaryForm		
Definition: Secondary type of land cover present, if applicable.		
Type: Form	Length: 20	Multiplicity: [0..1]
Attribute: geometry		
Definition: The geometry of the greenspace area.		
Type: GM_Surface	Length:	Multiplicity: [1]

Code Lists

Primary and Secondary Function types

All features will have a primary function. Where appropriate for the feature, a secondary function may also be recorded.

Code List: Function	
http://www.os.uk/xml/codelists/GreenspaceFunctionValue.xml Value defining the function of the greenspace feature.	
Value	Description
Allotments Or Community Growing Spaces	Areas of land for growing fruit, vegetables, and other plants, either in individual allotments or as a community activity. Produce is for the growers own consumption and not primarily for commercial activity.

Amenity - Residential Or Business	Landscaped areas providing visual amenity or separating different buildings or land uses for environmental, visual or safety reasons. Where the area is better described by another category this will be used in preference (e.g. playing field, public park, play space).
Amenity - Transport	Landscaped areas providing visual amenity or separating different buildings or land uses for environmental, visual or safety reasons when related to a transport function, such as a road, or within a transport hub.
Land Use Changing	Areas of land that are currently under development or awaiting redevelopment.
Bowling Green	A specially prepared area intended for playing bowls.
Camping Or Caravan Park	An organised area of ground designated for tents or caravans, intended for temporary occupation by holidaymakers.
Cemetery	Areas of land associated with burial areas or crematoriums.
Golf Course	A specially prepared area intended for playing golf
Institutional Grounds	Areas of land normally enclosed and associated with institutions. Grounds may be reserved for private use or have restricted access. Includes: Universities, Hospitals, Nursing homes, Emergency Services, Prisons, Military Sites, Government and Community Buildings providing public services, Libraries, Museums, Zoos and Theatres.
Natural	Land use areas with no other greenspace function but with Form attribute of woodland, open semi-natural, open water, beach or foreshore.
Other Sports Facility	Land used for other sports not specifically described by other categories. Includes facilities for sports spectating (e.g. stadiums) as well as participation.
Religious Grounds	Areas of land associated with churches and other places of worship.
Play Space	A specially prepared area intended for children's play, usually linked to housing areas or parks and containing purpose built equipment. Not captured if within schools or paid-for tourist attractions.
Playing Field	Large, flat areas of grass or specially designed surfaces, generally with marked pitches, used primarily for outdoor sports, i.e. football, rugby, cricket.
Private Garden	Areas of land normally enclosed and associated with private residences and reserved for private use.
Public Park Or Garden	Areas of land designed, constructed, managed and maintained as a public park or garden. These normally have a defined perimeter and free public access, and generally sit within or close to urban areas. Access is granted for a wide range of uses and not usually restricted to paths or tracks within the area. May include areas with managed facilities such as benches and flowerbeds, and more natural areas.
School Grounds	Areas of land normally enclosed that is associated with a school and primarily reserved for their use.
Tennis Court	A specially prepared area intended for playing tennis.

Primary and Secondary Form types

Features may have up to two of the following forms.

Code List: Form	
http://www.os.uk/xml/codelists/FormValue.xml	
Value defining the land cover of the greenspace feature.	
Value	Description
Woodland	Areas of land covered with trees with an area size larger than 0.1 hectares and width greater than 5m.
Open Semi-Natural	Areas of undeveloped or previously developed land with natural habitats (except woodland) for example, scrub, heath and rough grassland.
Inland Water	Static water bodies (e.g. reservoirs, lakes and ponds) and rivers above the normal tidal limit.
Beach Or Foreshore	Areas of beach above the tidal minimum low tide, for example, sand and shingle.
Manmade Surface	Manmade areas within sites used for exercise and recreation, for example paths and car parks within a public park.
Multi Surface	Polygons which may be comprised of multiple surface types, such as grass, decking and hard standing making up a private garden polygon. This applies to Private Gardens* and is generated from the Topography Layer Descriptive Term of Multi-Surface for the corresponding polygon.

* While the majority of polygons with this form will have a primary function of Private Gardens, this will not always be the case due to the Function Hierarchy (below).

Function Hierarchy

The population of Primary Function and Secondary Function attributes is driven by a hierarchy. This hierarchy is applied to the data to determine which function is primary and secondary in cases where more than one function applies for a single topographic area polygon. Not every polygon will have more than one function due to the nature of the primary function, for example, cemeteries and bowling greens are not likely to have secondary functions. This hierarchy only applies where more than one function exists.

The hierarchy has been developed to ensure the process applies the appropriate functions and does not imply any level of priority.

The following table declares this hierarchy:

Hierarchy	Function
1	Public Park Or Garden
2	School Grounds
3	Institutional Grounds
4	Golf Course
5	Amenity – Residential Or Business*
6	Amenity – Transport
7	Camping Or Caravan Park
8	Religious Grounds
9	Cemetery
10	Private Garden
11	Playing Field
12	Other Sports Facility
13	Tennis Court
14	Allotments Or Community Growing Spaces
15	Play Space
16	Bowling Green
17	Land Use Changing
18	Natural (features with no other function but with Form attribute of woodland, open semi-natural, open water, foreshore)

*Due to the way Amenity – Residential or Business function is defined (see [code list table](#)) features classified as this primary function would not be expected to have a secondary function.

Form Hierarchy

Where more than one Form value applies for a single topographic area polygon, the population of Primary Form and Secondary Form attributes is driven by a hierarchy. This hierarchy is applied to the data to determine which form is primary and secondary in cases where more than one form applies for a single topographic area polygon. Not all polygons will have a form and this hierarchy only applies where more than one form exists.

The hierarchy has been developed to ensure the process applies the appropriate forms consistently and does not imply any level of priority.

The following table declares this hierarchy:

Hierarchy	Form
1	Open Semi-Natural
2	Inland Water
3	Woodland
4	Beach Or Foreshore*
5	Manmade Surface
6	Multi Surface

*Due to the way beach and foreshore polygons are located, areas with this form would not be expected to have a secondary form.

Precision

MasterMap Greenspace geometry is published with a precision of 3 decimal places.

Chapter 3 OS Open Greenspace Look Up Table

OS has published two related products on greenspaces, OS Open Greenspace and OS MasterMap Greenspace Layer. For some applications, it is intended that these products are used together as they contain different information.

OS Open Greenspace is part of Ordnance Survey's Open Data portfolio, and depicts the location and extent of exercise and recreation facilities likely to be open to the public. It includes access points locating entrances and exits from greenspace sites and proper names. Full information regarding OS Open Greenspace can be found on our website and in the technical specification for that product.

A look up table exists to link between the two products. Where an Open Greenspace polygon and a MasterMap Greenspace polygon exist in the same location, the look up table provides this information. This can be used to join the two products together where appropriate, if the user wishes to use both datasets. MasterMap Greenspace and Open Greenspace will be maintained and released with the same currency to ensure that these datasets are synchronised and allowing them to be easily used together.

Records will only be included in the look up file where an appropriate match between a MasterMap Greenspace TOID and Open Greenspace ID can be made.

Attributes

OS Open Greenspace Look Up Table
Attribute: TOID
Definition: The OS MasterMap Greenspace Layer TOID
Attribute: GREENSPACESITEID
Definition: The OS Open Greenspace ID for a polygon which intersects with the relevant TOID

Format

The look up table is provided as a comma separated value (.csv) file. The file will be supplied with headers and the information contained is detailed in the attributes above. It will be supplied with all orders of OS MasterMap Greenspace Layer.

The full file will be supplied with each order. Therefore, customers not taking GB supply will find that the file contains some records which do not match to their holdings. These should be ignored when performing matches with your data.

Chapter 4 GML Overview

The MasterMap Greenspace product is supplied in GML version 3.2.1. This chapter describes how MasterMap Greenspace is defined in GML. An understanding of XML (eXtensible Mark-up Language) and XML schemas is required.

GML

GML is an XML grammar for expressing geographic features. GML serves as a modelling language for geographic systems as well as an open interchange format for geographic transactions on the Internet. More information can be found on the Open Geospatial Consortium (OGC®). <http://www.opengeospatial.org/standards/gml>

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

Information about Unicode and UTF-8, the character encoding we have chosen, is available on the Unicode Consortium website: <http://www.unicode.org>.

Use of examples

Any use of examples in this chapter that mention specific data content are to be taken as examples only.

Schema overview and location

XML schemas are used to define and validate the format and content of the GML. The GML v3.2.1 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 schema document defines the namespace, <http://namespaces.ordnancesurvey.co.uk/OSMM/Greenspace/1.0>, this is defined in the XSD at: <https://www.ordnancesurvey.co.uk/xml/open/ogsp/1.0/OSMMGreenspace.xsd>

Codelist Dictionaries

<http://www.os.uk/xml/codelists/GreenspaceFunctionValue.xml>

<http://www.os.uk/xml/codelists/FormValue.xml>

Example Record

GreenspaceArea

```
<os:featureMember>
  <gsp:GreenspaceArea gml:id="osgb1000000171855396">
    <gsp:toid>osgb1000000171855396</gsp:toid>
    <gsp:version>2</gsp:version>
    <gsp:primaryFunction
codeSpace="http://www.os.uk/xml/codelists/GreenspaceFunctionValue">Public Park Or
Garden</gsp:primaryFunction>
    <gsp:secondaryFunction
codeSpace="http://www.os.uk/xml/codelists/GreenspaceFunctionValue">Institutional
Grounds</gsp:secondaryFunction>
    <gsp:primaryForm codeSpace="http://www.os.uk/xml/codelists/FormValue">Open
Semi-Natural</gsp:primaryForm>
    <gsp:secondaryForm
codeSpace="http://www.os.uk/xml/codelists/FormValue">Woodland</gsp:secondaryForm>
    <gsp:geometry>
      <gml:Surface gml:id="osgb1000000171855396-0"
srsName="urn:ogc:def:crs:EPSG::27700" srsDimension="2">
        <gml:patches>
          <gml:PolygonPatch>
            <gml:exterior>
              <gml:LinearRing>
                <gml:posList>393705.6 808506.55
393705.85 808519.5 393705.85 808525.3 393705.9 808525.85 393706.37 808532.46 393706.6 808535.75 393706.7
808536.6 393706.8 808538.6 393706.75 808539.65 393706.2 808541.65 393706 808542.2 393705.7 808542.95
393705.6 808543.55 393705.7 808544.75 393705.7 808549.35 393705.3 808554.25 393705.25 808554.75 393704.9
808559.75 393704.55 808562.9 393703.9 808566.2 393703.4 808568.3 393702.25 808577.95 393696.05 808582.35
393694.4 808580.3 393692.87 808579.97 393692 808579.79 393694.05 808567.55 393693.54 808567.45 393692.63
808567.28 393691.7 808567.1 393696.9 808536.55 393694.26 808521.44 393698.98 808520.59 393698.8 808519.55
393698.4 808517.1 393697.6 808513.25 393697.18 808510.73 393696.95 808509.35 393700.1 808508.6 393699.75
808507.08 393705.6 808506.55</gml:posList>
              </gml:LinearRing>
            </gml:exterior>
          </gml:PolygonPatch>
        </gml:patches>
      </gml:Surface>
    </gsp:geometry>
  </gsp:GreenspaceArea>
</os:featureMember>
```

Chapter 5 GML to ESRI Shapefile Mapping

Attribute Mapping

The naming of attributes between GML and ESRI Shape file will be different as shape files are limited to 10 characters for an attribute name. Therefore, the following tables map the GML attribute name to the attribute name in the shape files.

The GML contains an attribute which describes the geometry of the feature; this is not applicable for a shape file as they are separated by their geometry.

GreenspaceSite

GML Attribute	ESRI Shape Attribute
toid	toid
version	version
primaryFunction	priFunc
secondaryFunction	secFunc
primaryForm	priForm
secondaryForm	secForm

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