

**Data Management and Analysis Group**

# **Ordnance Survey Data - Land-Line Plus**

**DMAG Briefing 2002/11**

**November 2002**

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## Ordnance Survey Data – Land-Line Plus

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## Introduction

Under the terms of the Service Level Agreement (SLA) signed between the Greater London Authority (GLA) and Ordnance Survey (OS), a number of OS datasets are made available for use by the GLA. The current agreement will run until 31 March 2004.

The participants in this SLA are:

- The core GLA
- The functional bodies of the GLA
- Participants in the Local Authority SLA with responsibilities in London – the 33 London boroughs

Under the terms of the SLA, the participants do not need to purchase mapping in an ad hoc manner but will receive the following services for their geographical area in return for an annual payment direct to Ordnance Survey:

- Provision of the following Ordnance Survey data products:
  - Land-Line Plus<sup>®</sup> (1:1250 & 1:2500 scales)
  - 1:10000 Scale Raster
  - OSCAR Asset Manager<sup>®</sup>
  - OSCAR Traffic Manager<sup>®</sup>
  - Address-Point<sup>®</sup>
  - Boundary-Line<sup>™</sup>
  - Land-Form PROFILE<sup>®</sup> (only available to GLA, Transport for London, and London Development Agency)
  - 1:50000 Scale Raster
  - Meridian 2 (only available to GLA, Transport for London, and London Development Agency)
- Code-Point<sup>®</sup> with polygons
- Internet Street Mapping
- Provision of continuous regular updates for all of the above Ordnance Survey data products
- Copyright licence for use of all Ordnance Survey and Ordnance Survey-based material in both digital and graphic form used in connection with services provided by the SKLA participants
- Advice and support on Ordnance Survey mapping issues

The following table gives further details of these datasets.

| Product   | Coverage                         | Description   | Tile Size (where applicable)                 |
|---|----------------------------------|---|--|
| Land-Line Plus                                  | M25 + Havering and LU extensions | Definitive large-scale dataset surveyed to a high degree of accuracy. Vector data format with full coding for 37 feature types. Most of the London coverage is at a scale of 1:1250, but there are a few area on the outskirts that are at a scale of 1:2500. | 500m by 500m (1:1250)<br>1km by 1km (1:2500) |
| 1:10,000 Colour Raster                          | SE England                       | 1:10000 scale raster  | 5km by 5km                                   |
| Land-Form Profile – Digital Terrain Model (DTM) | M25 + Havering and LU extensions | 1:10000 scale digital height dataset consisting of a gridded array of heighted points at 10m intervals, which have been mathematically interpolated from the contours.  | 5km by 5km                                   |
| 1:50,000 Colour Raster                          | England                          | 1:50,000 scale raster   | 20km by 20km                                 |

| Product                  | Coverage   | Description  | Tile Size (where applicable) |
|--------------------------|------------|--|------------------------------|
| ADDRESS-POINT            | SE England | Identifies residential, business and public postal addresses. Each address has a unique OS ADDRESS-POINT Reference (OSAPR) and is coded to the National Grid.  | 1km by 1km                   |
| OSCAR Asset Manager      | M25        | Digital road centreline network, featuring the full public road network, with a selection of private roads included. It is supplied as a vector (link and node) data structure. Attributes associated with features include length in metres, Department of Transport classification, road name and road-over-road intersection information.                 | 5km by 5km                   |
| Meridian 2               | GB         | A vector link and node dataset available as two themed layers - communication and topographic. The communication theme contains roads and railways, while the topological theme contains coastline, Developed land use areas (DLUA), boundaries, settlement names, hydrology, woodlands and gridded heights.   | 5km by 5km                   |
| Boundary Line            | GB         | A vector dataset produced annually to show the administrative and voting boundaries of Great Britain as at the first week of May.  |                              |
| Internet Street Mapping  | England    | Adapted for internet use from the 1:10000 scale raster dataset, it is designed explicitly for use on web sites and corporate Intranet sites.   | 5km by 5km                   |
| Code-Point with polygons | GB         | Provides exact geographical locations for postcode units, and is derived by taking the mean of the best available ADDRESS-POINT coordinates. The polygons are produced by tessellation of individual address records from ADDRESS-POINT and selectively clipped to roads, railways, rivers, etc. They are nested within royal Mail postcode sector polygons. | GB                           |

Ordnance Survey products are supplied in a variety of formats, most of which require some form of translation or registration. The latest updates of these datasets have now been supplied by OS, and the translation software has also now been made available to the GI Team within DMAG. This Briefing Note which deals with the Land-Line product, is the second in a series which describe the datasets available following their translation and/or registration.

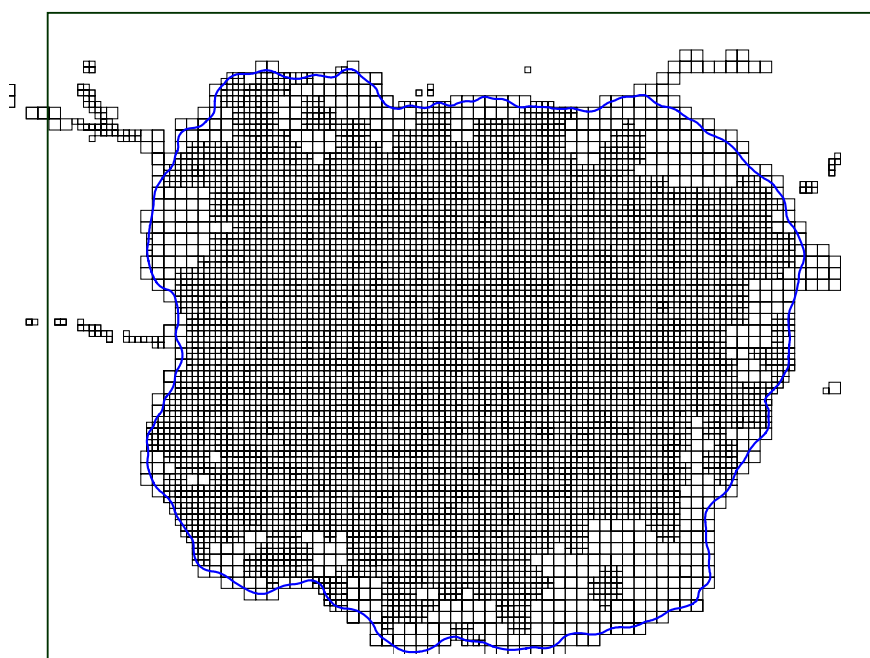
## Land-Line Plus

Land-Line is the original highly-detailed large-scale dataset which shows both man-made and natural features, including buildings, road and rail networks, rivers and administrative boundaries. Surveyed to a high degree of accuracy, it is fully maintained and continuously updated to incorporate changes to the landscape. In addition to the standard layers Land-Line Plus offers features such as slopes, woodland, and vegetation information.

Land-Line Plus is supplied by Ordnance Survey as individual tiles, the size and resolution of which depend on the type of area as follows:

|              |               |           |
|--------------|---------------|-----------|
| Urban areas  | 1:1250 scale  | 500m*500m |
| Rural areas  | 1:2500 scale  | 1km*1km   |
| Remote areas | 1:10000 scale | 5km*5km   |

Note that there are no remote areas in the area covered by the Greater London datasets. Figure 1 below shows the areas that are mapped at 1:1250 scale, and those that are mapped at 1:2500 scale. This also shows the areas for which Land-Line Plus is available outside the M25.



**Figure 1. Areas for which 500 metre and 1 kilometre tiles are available.**

The Land-Line Plus tiles are updated on a quarterly basis – the last update was received on 18 September 2002. A tile is updated if there has been a single unit of surveyed change within that tile.

The Land-Line Plus datasets are an excellent base for GIS for onscreen integration, manipulation and presentation of data, and provide the ability to pinpoint individual properties and precise sites when a high level of detail is required. They can also be overlaid with user data to provide a geographical context for referencing and analysis.

The Land-Line plus dataset consists of 63 separate layers, each of which depicts a particular feature of topographic detail. For ease of use, these 63 layers have been concatenated into 12 layers for storage and use within the GLA. The initial 63 layers and the concatenated layer into which each has been placed is shown in the following table.

| <b>Feature code</b> | <b>Feature code name</b>                                  | <b>Feature Layer</b> | <b>Feature Layer Name</b> |
|---------------------|---|----------------------|---------------------------|
| 1                   | Building outline  | Building             | Building                  |
| 4                   | Building outline (overhead)                               | Building             | Building                  |
| 7                   | Civil parish or community boundary                        | Boundary             | Boundary                  |
| 8                   | District, LB or UA boundary                               | Boundary             | Boundary                  |
| 9                   | County boundary   | Boundary             | Boundary                  |
| 10                  | Electoral division or ward boundary                       | Boundary             | Boundary                  |
| 11                  | Boundary post or stone                                    | Boundary             | Boundary                  |
| 13                  | Boundary half mereing symbol                              | Boundary             | Boundary                  |
| 14                  | Railway (narrow gauge)                                    | Railways             | Railway                   |
| 15                  | Railway (standard gauge)                                  | Railways             | Railway                   |
| 21                  | Road (public) edge of metalling                           | Road Edge            | Roadedge                  |
| 25                  | Triangulation point                                       | Points               | Points                    |
| 26                  | Bench mark  | Points               | Points                    |
| 27                  | Spot height   | Points               | Points                    |
| 30                  | General line or minor building detail                     | General Lines        | Genlines                  |
| 32                  | General ground level or minor overhead detail             | General Lines        | Genlines                  |
| 33                  | Underground detail or course of antiquity                 | General Lines        | Genlines                  |
| 35                  | Vegetation or landform limit (suppressed)                 | Landscape            | Landscape                 |
| 36                  | Vegetation or landform limit                              | Landscape            | Landscape                 |
| 43                  | Overhead detail   | General Lines        | Genlines                  |
| 49                  | Pylon   | Points               | Points                    |
| 52                  | Minor detail  | General Lines        | Genlines                  |
| 57                  | Point feature   | Points               | Points                    |
| 59                  | Water detail  | Water Lines          | Waterlns                  |
| 69                  | Flow arrow  | Water Lines          | Waterlns                  |
| 71                  | Mean high water (springs)                                 | Water Lines          | Waterlns                  |
| 72                  | Mean low water (springs)                                  | Water Lines          | Waterlns                  |
| 79                  | European, parliamentary or assembly constituency boundary | Boundary             | Boundary                  |
| 98                  | Road centreline   | Road Centre          | Roadcntr                  |
| 321                 | Roofed building indicator                                 | Buiding Seeds        | Bldseeds                  |
| 323                 | Glasshouse indicator                                      | Buiding Seeds        | Bldseeds                  |
| 372                 | Positioned coniferous tree                                | Landscape            | Landscape                 |
| 373                 | Positioned non-coniferous tree                            | Landscape            | Landscape                 |
| 374                 | Top of slope  | Landscape            | Landscape                 |
| 375                 | Top of cliff  | Landscape            | Landscape                 |
| 376                 | Bottom of slope or cliff                                  | Landscape            | Landscape                 |
| 377                 | Boulders  | Landscape            | Landscape                 |
| 378                 | Boulders, scattered                                       | Landscape            | Landscape                 |
| 379                 | Coniferous trees  | Landscape            | Landscape                 |
| 380                 | Coniferous trees, scattered                               | Landscape            | Landscape                 |
| 381                 | Coppice or osiers   | Landscape            | Landscape                 |
| 382                 | Marsh, saltmarsh or reeds                                 | Landscape            | Landscape                 |
| 384                 | Non-coniferous trees                                      | Landscape            | Landscape                 |
| 385                 | Non-coniferous trees, scattered                           | Landscape            | Landscape                 |
| 386                 | Orchard   | Landscape            | Landscape                 |
| 387                 | Heath   | Landscape            | Landscape                 |
| 388                 | Rock  | Landscape            | Landscape                 |
| 389                 | Rock, scattered   | Landscape            | Landscape                 |
| 390                 | Rough grass   | Landscape            | Landscape                 |

| <b>Feature code</b> | <b>Feature code name</b>               | <b>Feature Layer</b> | <b>Feature Layer Name</b> |
|---------------------|--|----------------------|---------------------------|
| 392                 | Scrub                                  | Landscape            | Landscape                 |
| 395                 | Upper level of communication indicator | General Lines        | Genlines                  |
| 396                 | Cliff indicator                        | Landscape            | Landscape                 |
| 397                 | Slope indicator                        | Landscape            | Landscape                 |
| 400                 | Water indicator                        | Water Seeds          | Watseeds                  |
| 1000                | Road name or number                    | Text                 | Text                      |
| 1005                | Administrative boundary text           | Text                 | Text                      |
| 1006                | House number or building names         | Text                 | Text                      |
| 1009                | Miscellaneous text                     | Text                 | Text                      |
| 1010                | Water text                             | Text                 | Text                      |
| 1013                | Land parcel number                     | Text                 | Text                      |
| 1210                | Scree                                  | Landscape            | Landscape                 |
| 1211                | Positioned boulder                     | Landscape            | Landscape                 |
| 1212                | Ridge or rock line                     | Landscape            | Landscape                 |

The Land-Line tiles are to be found in:

**K:\ORDNANCE SURVEY\LAND-LINE**

where the K: drive is mapped to:

**Mapinfo\$ on BPRDATA**

This directory also contains the Ordnance Survey Land-Line user guide as a PDF file:

**Land-Line user guide.pdf.**

Within the LAND-LINE folder referred to above, the structure is as follows:

**<10km tile name>\<tile><featurelayername>**

where <featurelayername> is as shown in the final column of the above table.

There is also a London-wide layer covering the whole of the area shown in the earlier map, and these are to be found in:

**K:\ORDNANCE SURVEY\ LAND-LINE\_LONDONWIDE**

again where the K: drive is mapped to:

**Mapinfo\$ on BPRDATA**

Within this LAND-LINE\_LONDONWIDE folder, the individual layers are named as

**<featurelayername>**

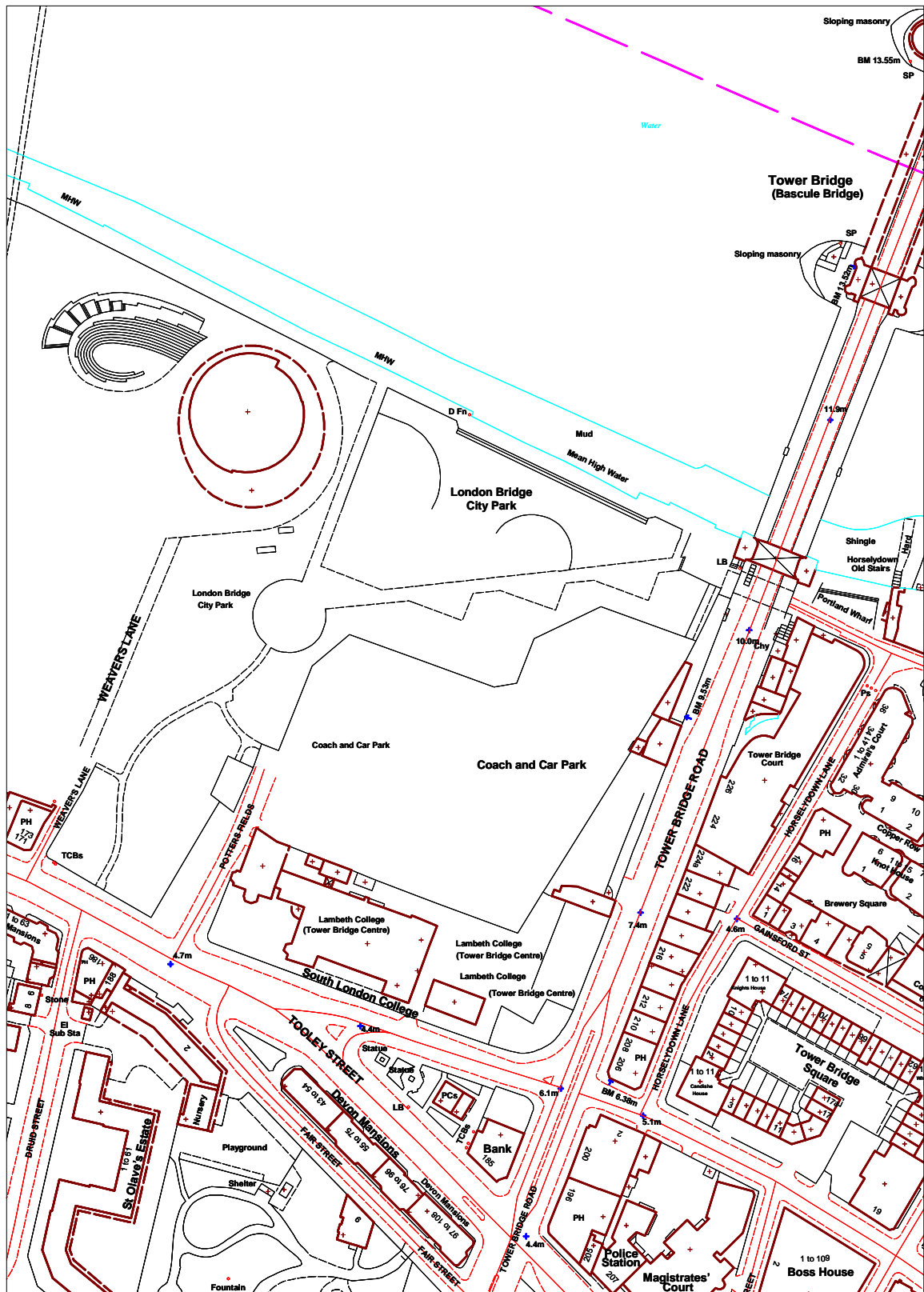
where <featurelayername> is again as shown in the final column of the above table.

## **Using the Land-Line Plus Tiles.**

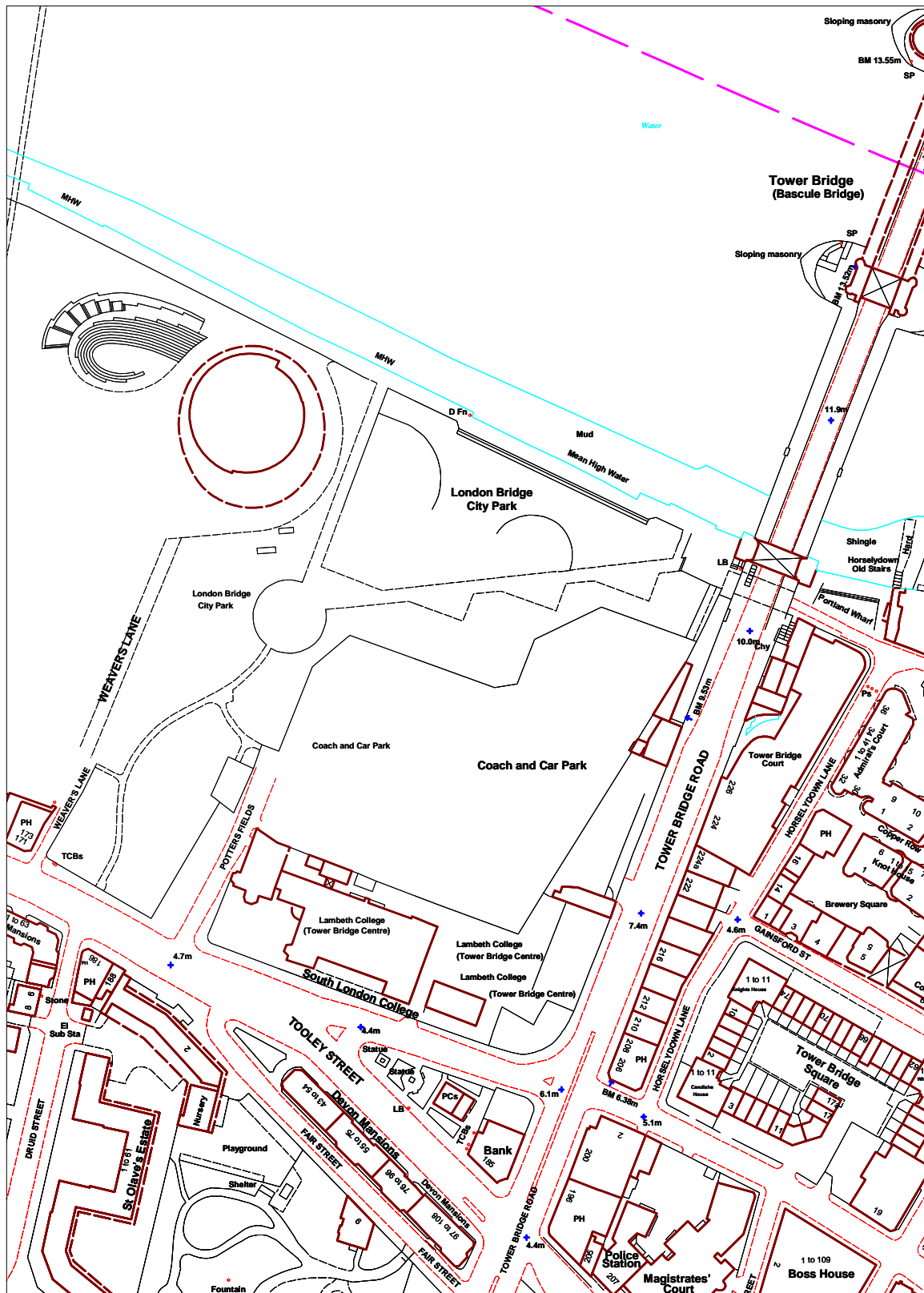
The images on the following pages show the contents of each of the layers for the area immediately surrounding City Hall, which itself is shown as two rings. The inner one denotes the building footprint, while the outer one denotes the greatest extent of the overhang. Note that there is a large expanse of open unmarked ground to the South West of City Hall denoting its current status as a building site. Eventually when construction is complete we will receive updates which will show the new buildings and roadways.

It is important to note that as the Land-Line product shows images at a large scale, it is most suitable for smaller areas. Attempting to use it for a large area is likely to produce a large blob on your screen.

The layers may be combined with each other, and with other vector or raster datasets to depict a required image. The first image shows the effect of mapping all twelve concatenated layers together, while others show the effect of using layers singly or in combination.

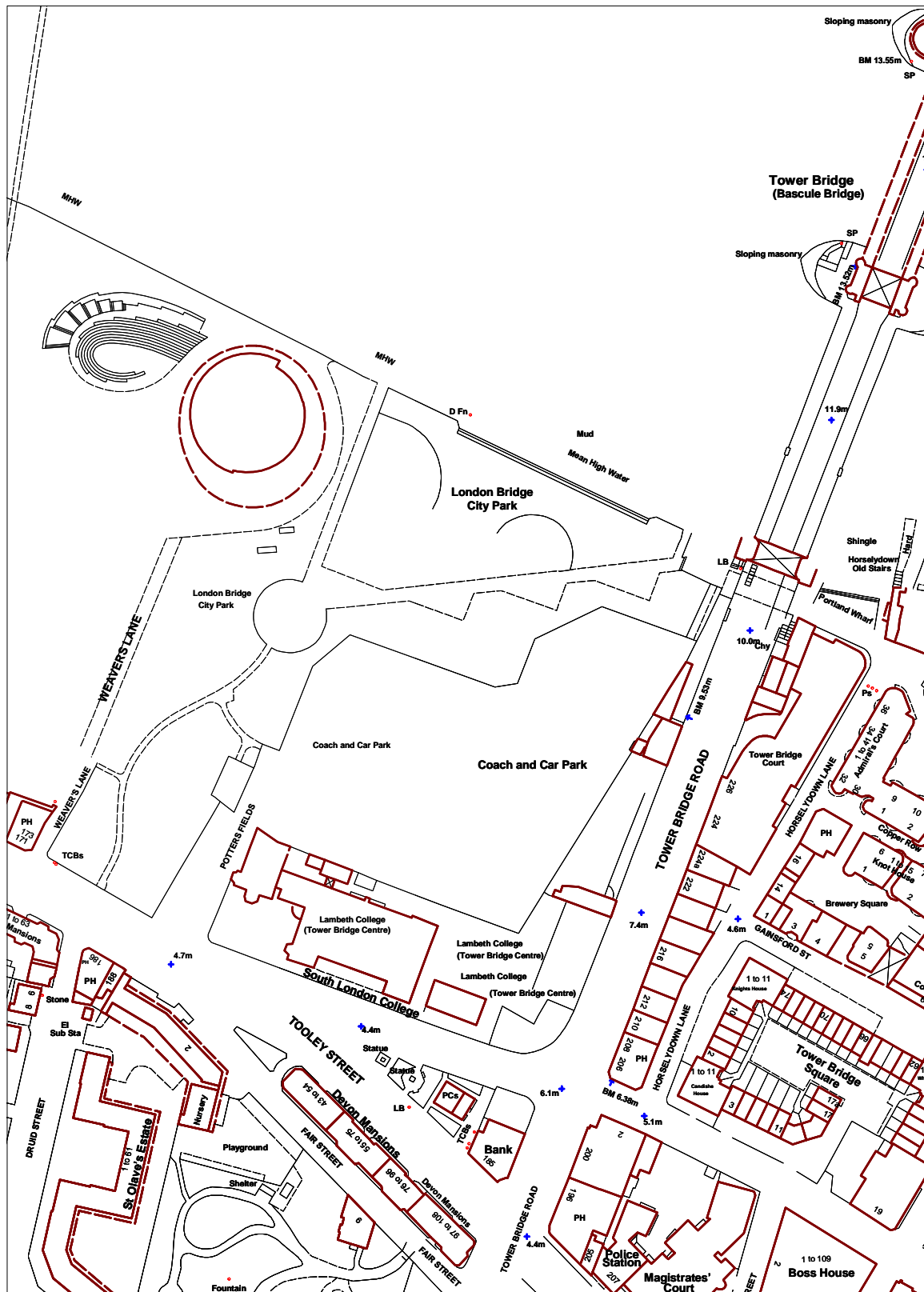


Map 1: All layers



**Map 2: All layers, except Road Centre Lines and Building Seeds.**

Note that the red lines delineating the road centres, and the dot (building seed) in the centre of City Hall have disappeared.



### Map 4: Land-Line superimposed on an Aerial Photograph

## Regular briefings and data from GLA Data Management and Analysis Group

We have instituted a new series of publications, covering all aspects of DMAG work. *DMAG Briefings* will now incorporate the Census Information Notes (CIN) and Population Advice Notes (PAN), both of which will still appear regularly.

Recent subjects of briefings include:

- Working Families Tax Credit
- ILO Unemployment
- 2001 Census: First Results and Implications for London Plan
- 2001 Census: First Population Statistics
- Ordnance Survey Service Level Agreement

The full list of DMAG Briefings is:

|              |  |                                       |                |
|--------------|--|---------------------------------------|----------------|
| DMAG 2002-1  | ILO Unemployment   | Lorna Spence                          | February 2002  |
| DMAG 2002-2  | Education in London<br>- Key Facts 1997-2001                             | Karen Osborne/<br>Iryna Pylypchuk     | May 2002       |
| DMAG 2002-3  | Greater London Demographic Review 2000                                   | John Hollis/Baljit Bains              | July 2002      |
| DMAG 2002-4  | GLA 2001 Round Ethnic Group  | John Hollis/Baljit Bains              | August 2002    |
| DMAG 2002-5  | 2001 Census: First Results and<br>Implications for the draft London Plan | Population Projections<br>John Hollis | September 2002 |
| DMAG 2002-6  | 2001 Census: First population statistics                                 | Eileen Howes                          | October 2002   |
| DMAG 2002-7  | Mid-year Estimates   | John Hollis/Baljit Bains              | October 2002   |
| DMAG 2002-8  | 2001 Census: First population<br>statistics - London Plan Sub Regions    | Eileen Howes                          | October 2002   |
| DMAG 2002-9  | Census Information Note 2002-1   | Eileen Howes                          | October 2002   |
| DMAG 2002-10 | Ordnance Survey Data - Boundary-Line                                     | Hywel Davies                          | November 2002  |

If you would like copies of previous briefings, please contact Jackie Maguire at the GLA, [jackie.maguire@london.gov.uk](mailto:jackie.maguire@london.gov.uk).

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