British Standard 7666:2006 (parts 0, 1 and 2) its impact & use within local government

Ordnance Survey

Local Government Association

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Background to British Standard (BS) 7666

BS7666:2006 is one of around 27,000 British Standards. BS7666:2006 refers specifically to the standards for geographical referencing. It comprises of parts one to five. The table below summarises the different parts of BS7666:2006.

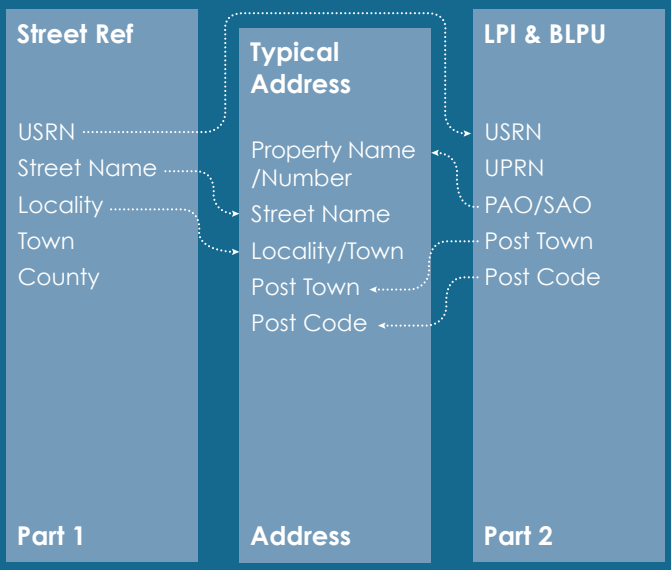
Part	Name	Contents
BS 7666-0:2006	**General model for gazetteers and spatial referencing**	• defines the essential components of a gazetteer of geographic locations, and • provides a general model of spatial references based upon named spatial units in the United Kingdom • defines the attributes of each geographic location and defines the metadata associated with the gazetteer • provides the basis for the other parts of BS 7666 by defining general structures
BS 7666-1:2006	**Spatial datasets for geographical referencing. Specification for a street gazetteer**	• specifies the data to be maintained in a gazetteer of streets, consistent with Part 0 of this standard • enables different users of street information to use the same data with consistency of content, accuracy, currency and format • different ways of referencing a street are defined so that data can be accessed by street name, description, route number, unique reference number or external cross-reference • specifies the means of representing the geometry of the street in terms of coordinates • intended for use by those compiling street gazetteers for purposes of highways and streetworks management, property addressing and navigation
BS 7666-2:2006	**Spatial datasets for geographical referencing. Specification for a land and property gazetteer**	• specifies the logical data structure for a gazetteer of land and property, consistent with Part 0 of this standard • based upon the concept of a basic land and property unit (BLPU), and specifies the data to be recorded and maintained in a gazetteer • specifies the way in which the boundary of a BLPU may be represented and linked to the gazetteer • does not provide a database design or a transfer format • intended for use by those compiling land and property gazetteers, for a range of purposes including property records and addressing • enables different users of land and property information to link different land and property identifiers (LPI) via a common unique property reference number (UPRN)
BS 7666-5:2006	**Spatial datasets for geographical referencing. Specification for a delivery point gazetteer**	• specifies the logical data structure and data content for a gazetteer of delivery points • for purposes of identification, access and validation of service requests • provides a method of referencing delivery points by means of unique references and descriptive delivery addresses • does not provide a database design or a transfer format • intended for use by suppliers of delivery and collection services, such as distribution organizations • facilitates data sharing to enable the provision of collaborative services • provides a consistency of references for analysis and planning purposes

Source: http://www.bsigroup.com/en/

The BS7666 standard has been revised several times since its inception in 1994, with the most recent revision being in 2020. The local authority address and street data GeoPlace holds within GeoHub conforms to parts 0 and 1 and additionally the address data conforms to Part 2. BS7666:2006 specifies a standard format for holding details on every property and street.

In terms of streets information, each street may be recorded at a simple or complex level. The simple level provides a street name or description and location elements, such as locality and town, together with spatial extremity points – all referenced to a unique street reference number (USRN). At the complex level, additional section detail (Elementary Street Units) is added to each street including all the coordinate information required to represent the full geometric centre-line representation of that street. Additional street information is recorded against each elementary street unit such as status, restrictions, etc.

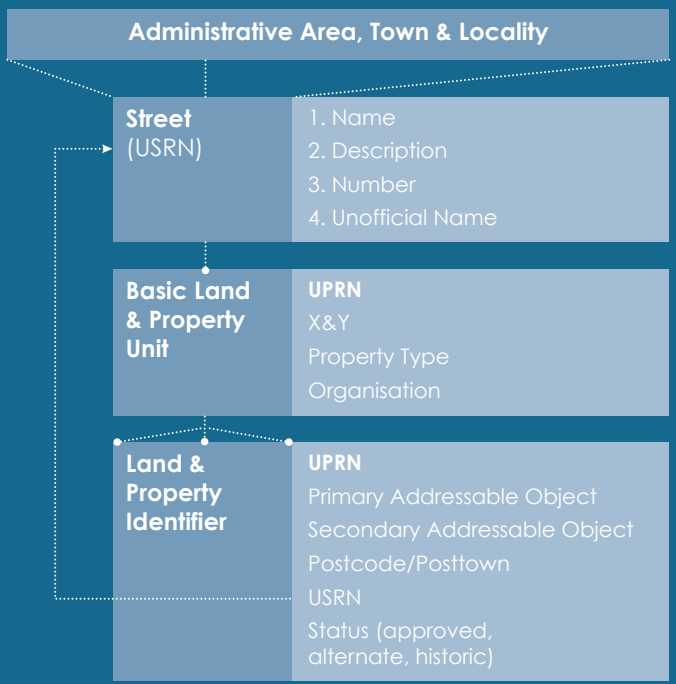
BS7666 – Land, Property & Streets



As far as properties are concerned, the standard is based on the concept of a land parcel unit known as a Basic Land and Property Unit (BLPU). A BLPU is defined in BS7666 part 2 as "an area of land in uniform property rights or, in the absence of such ownership evidence or where required for administration purposes, inferred from physical features, occupation or use". Examples of BLPUs include residential houses, commercial units, parks and statues.

Each BLPU has a unique property reference number (UPRN), a spatial reference (easting and northing) and one or more Land and Property Identifiers (LPI). The LPI is basically the address of the BLPU in a standard format that uniquely identifies the BLPU and references each one to a street as defined and held in the National Street Gazetteer (NSG). The principal components of the LPI are the UPRN from the BLPU, the Unique Street Reference Number (USRN) from the NSG and sufficient elements from the hierarchy of Primary and Secondary Addressable Objects (PAOs and SAOs) which contain for example house names and numbers, necessary to uniquely identify the BLPU.

The following diagram demonstrates how this works in terms of recording of data:



Similarly, as the previous diagram demonstrates, the standard enables both a typical address to be created for use as well as more detailed information which is then available as a national resource.

The following diagram demonstrates how this works in practice using the example of the O2 Arena.

Benefits of standards

Overall, the benefits of BS7666 to local government include:

- **sharing of data according to a common standard** reduces costs in duplication, data processing, and enables interoperability.
- **written by experts** and based on national/ international best practice
- **breadth and flexibility** of the system means that the wide variety of street and property information can be recorded in a standard way across England and Wales
- **encourages common understanding** and terminology at point of creation and use
- **facilitates interoperability** through data sharing and compatibility
- **single data model reduces duplication** of software development and future-proofs investment
- **compatibility with other standards** (e.g. ISO 19112) is managed by BSi and ISO at the standards level, reducing similar effort at implementation level
- **provides a basis for excellent data quality** and consistency
- **provides a well recognised and trusted** source of reference
- **has official approval and has a robust change management process** which enables continuity within the local government sector
- **provides the opportunity to develop robust processes** for the creation and maintenance of data.

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