NBS ❖ BIM Toolkit

Share: ◼ 160 ◼

CLASSIFICATION
First published 8th April 2015, last updated 26th April 2017.

Sarah Delany

Technical Author and Head of Classification at NBS

Uniclass 2015 is a unified classification for the UK industry covering all construction sectors. It contains consistent tables classifying items of all scale from a facility such as a railway down through to products such as a CCTV camera in a railway station. Sarah Delany, Technical Author and Head of Classification at NBS, introduces Uniclass 2015 in this article.

View and download the classification tables | Latest updates.

As part of the BIM Toolkit project, NBS are working on the next version of the Uniclass classification scheme. Originally released in 1997, Uniclass allows project information to be structured to a recognised standard. This original version has now been heavily revised, to make it more suitable for use with modern construction industry practice, and to make it compatible with BIM now and in the future.

As a key deliverable of the BIM Toolkit project, NBS have worked with experts from across the industry to develop the new classification system – Uniclass 2015. This builds on previous versions and developments of Uniclass, but significantly extends the scope and responds to industry feedback to the draft tables CPI published in 2013. Uniclass 2015 provides:

- A unified classification system for the construction industry. For the first time, buildings, landscape and infrastructure can be classified under one unified

scheme.

- A hierarchical suite of tables that support classification from a university campus or road network to a floor tile or kerb unit.
- A numbering system that is flexible enough to accommodate future classification requirements
- A system compliant with ISO 12006-2 that is mapped to NRM1 and supports mapping to other classification systems in the future
- A classification system that will be maintained and updated by NBS.
- Within the BIM toolkit a database of synonyms to make it as easy as possible to find the required classification using standards industry terminology.

WHAT WE'RE DOING AND WHY

Uniclass 2015 has been restructured and redeveloped to provide a comprehensive system suitable for use by the entire industry, including the infrastructure, landscape, engineering services as well as the building sector, and for all stages in a project life cycle.

The 2015 version of Uniclass has been in development for some time, previously referred to as Uniclass2. This version attracted considerable feedback which has been used to make changes, with the most significant change being the removal of the Work Results table.

Feedback and comment from professional institutes, construction professionals, librarians and manufacturers have all led to major restructuring of the tables themselves and changes to the terminology used, and we're still asking for feedback on both the published and draft tables, so we can improve them further.

Uniclass 2015 provides a means of structuring project information essential for the adoption of BIM level 2. Information about a project can be generated, used and retrieved throughout the life cycle.

The initial classification work has focussed on the 7 core tables that describe an asset required to support the Digital Plan of Work. Over the coming months we will consult with industry on the development of other tables covering Form of Information, Project Management, Construction aids and Properties and Characteristics.

We know that not everyone will want or be able to adopt it immediately, and so by providing a route between classification schemes, all BIM Toolkit users should be able to share in its benefits. Initially, this mapping will be

to NRM1, assisting in costing work, but other classification schemes can also be mapped to Uniclass 2015 in the future.

Uniclass 2015 has been carefully structured to be in accordance with ISO 12006-2 Building construction – Organization of information about construction works – Part 2: Framework for classification. This means that Uniclass 2015 will be particularly suited to use in an international context where mapping to other similarly compliant schemes around the world should be streamlined.

WHAT IT'S FOR

Uniclass 2015 is divided into a set of tables which can be used to categorise information for costing, briefing, CAD layering, etc. as well as when preparing specifications or other production documents.

These tables are also suitable for buildings and other assets in use, and maintaining asset management and facilities management information.
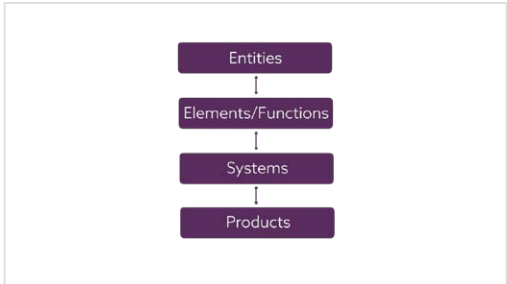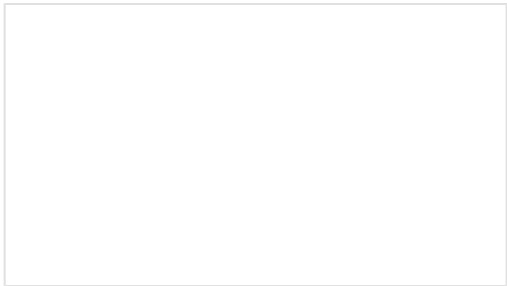
THE TABLES

The suite of tables are broadly hierarchical, and allow information about a project to be defined from the broadest view of it to the most detailed. The Complexes table describes projects in overall terms and can be thought of in terms of the provision of an Activity. Complexes can be broken down as groupings of Entities, Activities and Spaces depending on the particular use.

Entities can also be described using the Spaces and Activities tables if required.

For detailed design and construction, the main starting point are Entities.

The main architectural components of an entity are elements, for other requirements in an entity such as drainage, heating or ventilation, the activities table sets out these functions. These Elements and Activities are fully described in the Systems which in turn contain products.

Uniclass 2015 - Complexes, Entities, Spaces/Locations and Activities tables

Uniclass 2015 - Entities, Elements/Functions, Systems and Products tables

Looked at more closely, the tables comprise:

- **Complexes**
  This describes a project in overall terms. It can be a private house with garden, drive, garage and tool shed, or it can be a University campus with buildings for lecturing, administration, sport, halls of residence, etc. Rail networks and airports are also all examples of complexes.
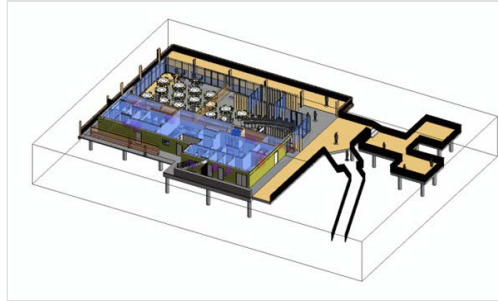 This Complex is a holiday village.

- **Entities**
  Entities are discrete things like buildings, bridges, tunnels etc. They provide the areas where different activities occur.
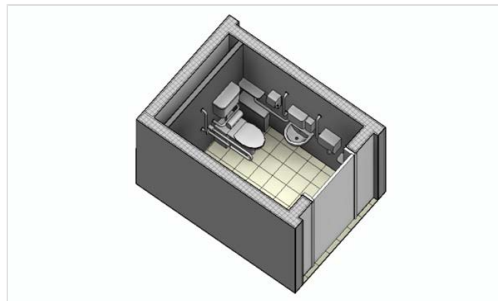 Within the holiday village above is a restaurant which is an Entity.

- **Activities**

  This defines the activities to be carried out in the complex, entity or space. For example a prison complex provides a Detention activity at a high level, but can also be broken down into individual activities like exercise, sleeping, eating, working, etc. The Activities table also includes surveys, operation and maintenance and services.
  These spaces in the restaurant provide for the activities of dining and access.

- **Spaces/Locations**

  In buildings, spaces are provided for various activities to take place. In some cases a space is only suitable for one activity, for example a kitchen, but a school hall may be used for assemblies, lunches, sports, concerts and dramas. Also classed as spaces are transport corridors that run between two locations, such as London Kings Cross to Newcastle, or the M1 from London to Leeds.
  This Space is for an accessible toilet with internal wall Elements.

- **Elements**

  Elements are the main components of a structure like a bridge (foundations, piers, deck) or a building (floors, walls and roofs).

- **Systems**

  Systems are the collection of components that go together to make an element or to carry out a function. For a pitched roof, the rafters, lining, tiles, ceiling boards, insulation and ceiling finish comprise a system, or a low temperature hot water heating system is formed from a boiler, pipework,

tank, radiators etc. A signal system for a railway has a number of components and products; and the scum removal system is part of a wastewater treatment entity.

This illustrates a ceiling system with ceiling tile products.

- **Products**
  Finally, the individual products used to construct a system can be specified, e.g. joist hangers, terrazzo tiles, gas fired boilers.

	Buildings	Linear Infrastructure	Geospatial infrastructure
Complexes	University campus Private home Hospital Airport	Rail network Road network	Wastewater treatment plant
Entities	Teaching block House Nurses residential Block	Bridge Tunnel	Primary wastewater treatment plant
Activities	Lecturing Tutorials Lighting Heating	Transportation Drainage	Wastewater treatment

Spaces / Locations	Student bar	Embarkation point	Control room
	Departure lounge	Workshops	
Elements	Roof	Rail track	
	Wall		
Systems	Timber roof framing system	Ballasted rail track system	Desludging systems
	Low temperature hot water heating system	Hot rolled paving system	Crossflow grit removal systems
Products	Joist hangers	Conductor rails	Chain and flight scrapers
	Terrazzo tiles	Rail track tie bars	Scum removal boards
	Gas fired boilers	Hot-rolled asphalt (HRA) surface courses and slurries	

USING THE CLASSIFICATION SYSTEM

The tables need to be flexible and to be able to accommodate enough coding's to ensure coverage, to allow for a multitude of items and circumstances, including new technologies and developments that are yet to emerge.

Work is being done to support the tables and their users: synonyms are being added to terms to aid searching, and mappings to other classification systems are being prepared, to allow a seamless cross-over.

Each code consists of either four or five pairs of characters. The initial pair identifies which table is being used and employs letters. The four following pairs

represent groups, sub-groups, sections and objects. By selecting pairs of numbers, up to 99 items can be included in each group of codes, allowing plenty of scope for inclusion.

For example, Systems are arranged in groups with subgroups which are sub divided, which leads to the final object code.

- 30 Roof, floor and paving systems
- 30_10 Pitched, arched and domed roof structure systems
- 30_10_30 Framed roof structure systems
- 30_10_30_25 Heavy steel roof framing systems

- 50 Disposal systems
- 50_75 Wastewater storage, treatment and disposal systems
- 50_75_67 Primary sewage treatment and final settlement systems
- 50_75_67_46 Lamella tank systems

EXAMPLE

As an example, consider a new school classroom block to provide facilities for teaching art and cookery.

The Client sets out the requirements in terms of the activities that need to be accommodated in the new classroom block. These can also be thought of as spaces.

Activity	Space or location
Art teaching	Art studio
Secondary teaching	Secondary classrooms
Cookery teaching	Teaching kitchen
Assembly Performance	School hall
Dining	School hall
Caretaking	Caretaker's office
Reception	Reception space

The relationship between activities and spaces

The school as a whole is a complex. The new block is a

building, which is an entity. Other entities will be required such as paths and roads to the new block, landscaped areas and possibly a car park.

The building (or entity) is divided into spaces which accommodate the required activities.

For the concept design, the entity can be described as being formed from elements – which can be thought of as the basic building blocks of a structure – and services such as heating, hot and cold water, drainage, power and lighting, etc. – all classed as services in Uniclass 2015 – are selected from the Activities table.

During the rest of the detailed design process through to construction itself, the details of how each elements should be constructed is described using the Systems table; systems are themselves made up of products.

As an example, consider a new wastewater treatment facility.

The Client sets out the requirements in terms of the activities such as primary and secondary wastewater treatment. The whole facility is a complex, each of types of treatment are carried out in 'small' entities. The entity is composed of a number of systems including a concrete vessel, wastewater distribution pipelines, sludge removal, scum removal etc.

USING CLASSIFICATION TO INTERROGATE MODELS

As a different example, imagine a requirement to check that all doors in a project model are compliant with the requirements of Part M of the Building Regulations. There may be hundreds of doors on the project but they are all classified as door systems using the Systems table:

- Ss_25_30_20 Door, shutter and hatch systems

The data can be searched for instances of this code to produce a list of all objects classified as doors. Once all the doors have been identified, software can interrogate the properties of the objects to determine for example, whether the clear opening width of each door is in accordance with the requirements of the regulations.

ASSET MANAGEMENT

An asset manager needs to be able to find details of plant and equipment quickly when issues arise, and having them classified can help with this.

The spaces within a building or other facility can be listed using their classification codes, along with all the activities associated with them. The systems serving each space and the products that form them can also be included by classification, providing a complete information trail. When a product reaches the end of its life and needs to be replaced, having it correctly classified makes it easy to identify which spaces are affected, so that arrangements can be made and people informed.

LATEST UPDATES (APRIL 2017)

This April issue is the next in the three-monthly updating programme. The Uniclass 2015 tables were last updated in January 2017. Between updates, we liaise regularly with a growing number of individuals and organisations using the tables to provide further information and assist with requests for new codes.

The April 2017 Update features minor changes to seven tables in response to user requests, respecting the need for a period of stability and minimum change to assist adoption of the Uniclass 2015 classification.

We have been working with the Environment Agency to assist their adoption of Uniclass 2015 as part of the BIM level 2 strategy. There are new codes for flood defence throughout the tables and some amendments to the existing codes, e.g. Reservoirs and Tidal barriers have been moved to the Complexes table from the Entities table. We are continuing our work with the Metropolitan Police to classify all their spaces and assigning activities where appropriate, which has led to the introduction of further new codes in the Spaces and Activities tables. Our work with the manufacturers who supply Transport for London has continued. Further Uniclass 2015 codes for the products supplied for the maintenance of London Underground have been added which will benefit others working in rail. The estates department at University of Birmingham have requested some additions to the Tools and equipment table which will be of general use. In the Products table there are a number of additions as a result of feedback from users and new technologies.

We are grateful to all the organisations we have worked with for their input. As we share details of this activity, industry professionals can learn more about who else is using the tables, for what purpose and the range of changes to expect and why.

The work of maintaining and enhancing Uniclass 2015 to continually support the needs of those operating in the built environment is an ongoing exercise. We welcome comment and input from all sectors in the construction industry via uniclass2015@theNBS.com.

Beta versions

The Uniclass 2015 tables currently available in beta version are Form of Information (FI) and Project Management (PM). The early-2017 publishing date for these tables has been extended slightly to enable a full review of the comments received during recent consultation.

Changes to published versions

Status and revision information is available alongside each Uniclass 2015 table. Each information sheet (pdf) provides a summary of the changes made as well as code by code details.

Uniclass 2015 is a dynamic classification for the construction industry and we welcome further comments on any of the tables. If you wish to get in touch, please do so at uniclass2015@theNBS.com.

The text of this page is available for modification and reuse under the terms of the Creative Commons Attribution-Sharealike 3.0 Unported License and the GNU Free Documentation License (unversioned, with no invariant sections, front-cover texts, or back-cover texts).

VIEW AND DOWNLOAD THE CLASSIFICATION TABLES

Search Uniclass2015:

Filter by: All tables

Results 1 to 10 of 12,688

| Prev | 1 | 2 | 3 | … | 1269 | Next |

Code ▲	Title ▼
Ac	Activities
Ac_10	Preparation and repair
Ac_10_10	Deconstruction and demolition
Ac_10_10_20	Deconstruction

Ac_10_10_25	Demolition
Ac_10_20	Decontamination
Ac_10_30	Site clearance
Ac_10_30_10	Bush and scrub removal
Ac_10_30_15	Constructed material clearance
Ac_10_30_80	Soil removal

Results 1 to 10 of 12,688

| Prev | 1 | 2 | 3 | … | 1269 | Next |

DOWNLOAD THE TABLES:

The current status of the classification tables is listed below.

Table	Status and revision information
Co - Complexes	v1.3, Published April 2017
En - Entities	v1.4, Published April 2017
Ac - Activities	v1.3, Published April 2017
SL - Spaces/ locations	v1.4, Published April 2017
EF - Elements/ functions	v1.2, Published November 2016
Ss - Systems	v1.6, Published April 2017
Pr - Products	v1.6, Published April 2017
TE - Tools and Equipment	v1.1, Published April 2017
Zz- CAD	v1.0, Published July 2015
FI - Form of information	Beta status – consultation ongoing
PM - Project management	Beta status – consultation ongoing

Share: 160

FURTHER READING

LEVELS OF DEFINITION

Alistair Kell and Stefan Mordue
7th May 2015

THE NBS BIM OBJECT STANDARD 🗗

VERIFICATION
Alan Smith
10th October 2016

BIM TOOLKIT

Definitions

Support

Websites terms and

conditions

Acceptable use policy

End User Licence

Agreement

Privacy policy

Cookies

NBS

Specifications

National BIM Library

Product Selector

Standards

Building Regulations

Knowledge

RIBA

Architecture.com

RIBA CPD

RIBA Journal

RIBA Bookshops

RIBA Appointments

RIBA Insight

NBS