UNICLASS: as it lives and breathes

Sarah Delany
Head of Classification and Technical Author, NBS
Overview

• Introduction – why did we create a classification system?
• The Tables – how they are structured and their content.
• The Tables and the BIM process – what table can be used at what stage.
• Terminology – matching construction industry language.
• How the tables are coded – the numbering system demystified.
• The consultation – who we have consulted with.
• Managing the changes – how you can see what we have done as the tables develop.
Introduction
UK Government requirement

- To develop a classification to aid the adoption of BIM.
- To use ISO 12006-2 as the structure.
New classification

- To allow project information to be structured to a recognised standard.
- To be comprehensive for all stages in a project life cycle.
- To be applicable to building and infrastructure sectors.
- To be dynamic, managed and maintained.
- To be up to date and relevant.
Uniclass 2015

- Promote use of the appropriate information at the appropriate stage of the project.
- Use consistent terminology.
- Link logically from one table to another.
- Be numbered consistently.
Construction industry

Building sector, including:

- Architecture
- Structural engineering
- Mechanical & Electrical services
- Landscape architecture
Construction industry

Infrastructure sector, including:
• Road
• Rail
• Airports
• Water
• Power
• Environment
The tables
UNICLASS: as it lives and breathes

‘Classes’ of Information

Complexes
Activities
Spaces/ Location
Entities
Elements/ Functions
Systems
Products
Form of Information
Tools and equipment
Project management

Co
Ac
SL
En
EF
Ss
Pr
FI
TE
PM
### Group headings

Complexes, Entities, Spaces/ location and Activities tables

<table>
<thead>
<tr>
<th>Group</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Preparation and repair</td>
<td>Administrative, commercial and protective services</td>
</tr>
<tr>
<td>20</td>
<td>Cultural, educational, scientific and information</td>
<td>Industrial</td>
</tr>
<tr>
<td>30</td>
<td>Water and land management</td>
<td>Medical, health, welfare and sanitary</td>
</tr>
<tr>
<td>35</td>
<td>Recreational</td>
<td>Sport and activity</td>
</tr>
<tr>
<td>40</td>
<td>Residential</td>
<td>Waste disposal</td>
</tr>
<tr>
<td>45</td>
<td>Piped supply</td>
<td>Heating, cooling and refrigeration</td>
</tr>
<tr>
<td>55</td>
<td>Ventilation and air conditioning</td>
<td>Electrical power generation and distribution</td>
</tr>
<tr>
<td>65</td>
<td>Communications, security, safety and protection</td>
<td>Transport</td>
</tr>
<tr>
<td>75</td>
<td>Operation and maintenance</td>
<td>Circulation and storage</td>
</tr>
</tbody>
</table>
## Group headings

### Elements/ functions and Systems tables

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>32</td>
<td>35</td>
</tr>
<tr>
<td>Preparatory</td>
<td>Structural</td>
<td>Wall and barrier</td>
<td>Roof, floor and paving</td>
<td>Damp-proofing, waterproofing and plaster finishing</td>
<td>Stair and ramp</td>
</tr>
<tr>
<td>37</td>
<td>40</td>
<td>45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tunnel, shaft, vessel and tower</td>
<td>Signage, fittings, furnishings and equipment</td>
<td>Flora and fauna</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>55</td>
<td>60</td>
<td>65</td>
<td>70</td>
<td>75</td>
</tr>
<tr>
<td>Waste disposal</td>
<td>Piped supply</td>
<td>Heating, cooling and refrigeration</td>
<td>Ventilation and air conditioning</td>
<td>Electrical power and lighting</td>
<td>Communications, security, safety and protection</td>
</tr>
<tr>
<td>80</td>
<td>85</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport</td>
<td>Process engineering</td>
<td>Soft facility management</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
UNICLASS: as it lives and breathes

- Entities
- Elements/Functions
- Systems
- Products

Table links
Uniclass2015 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 at NBS, introduces Uniclass2015 in this article.

View and download the classification tables.

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...
VIEW AND DOWNLOAD THE CLASSIFICATION TABLES

Search Uniclass2015: air

Results 1 to 8 of 8

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co_20_60_02</td>
<td>Air force complexes</td>
</tr>
<tr>
<td>Co_25_50_58</td>
<td>Open air museums</td>
</tr>
<tr>
<td>Co_25_50_59</td>
<td>Open air sculpture parks</td>
</tr>
<tr>
<td>Co_35_10_02</td>
<td>Air ambulance complexes</td>
</tr>
<tr>
<td>Co_40_05_30</td>
<td>Fairground complexes</td>
</tr>
<tr>
<td>Co_65</td>
<td>Ventilation and air conditioning complexes</td>
</tr>
<tr>
<td>Co_80_05_02</td>
<td>Airports and airfields</td>
</tr>
<tr>
<td>Co_80_20_13</td>
<td>Chairlift way complexes</td>
</tr>
</tbody>
</table>

DOWNLOAD THE TABLES:
- Co Complexes
- En Entities
- Ac Activities
- SL Spaces/locations
## View and Download the Classification Tables

Search Uniclass2015: air

Results 1 to 10 of 22

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL_20_45_29</td>
<td>Fuel filling station air and water points</td>
</tr>
<tr>
<td>SL_20_50_36</td>
<td>Hair and beauty salons</td>
</tr>
<tr>
<td>SL_30_60_13</td>
<td>Clothes drying and airing rooms</td>
</tr>
<tr>
<td>SL_40_05_42</td>
<td>Indoor fairground spaces</td>
</tr>
<tr>
<td>SL_40_05_60</td>
<td>Outdoor fairground spaces</td>
</tr>
<tr>
<td>SL_40_05_88</td>
<td>Temporary outdoor fairgrounds</td>
</tr>
<tr>
<td>SL_80_05_04</td>
<td>Aircraft fuelling spaces</td>
</tr>
<tr>
<td>SL_80_05_05</td>
<td>Aircraft manoeuvring buildings</td>
</tr>
<tr>
<td>SL_80_05_06</td>
<td>Aircraft standing areas</td>
</tr>
<tr>
<td>SL_80_05_07</td>
<td>Aircraft storage spaces</td>
</tr>
</tbody>
</table>

Results 1 to 10 of 22

## Download the Tables:
- Co Complexes
- En Entities

[Map Image]
### VIEW AND DOWNLOAD THE CLASSIFICATION TABLES

Search Uniclass2015: **bar**

Results 1 to 2 of 2

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ee_25</td>
<td>Wall and barrier elements</td>
</tr>
<tr>
<td>Ee_25_55</td>
<td>Barriers</td>
</tr>
</tbody>
</table>

Filter by:
- All tables
- Complexes
- Entities
- Activities
- Spaces/locations
- Elements
- Systems
- Products
- CAD

### DOWNLOAD THE TABLES:

- Co Complexes
- En Entities
- Ac Activities
- SL Spaces/locations
- Ee Elements
- So Systems
- Pr Products
- Zz CAD

[Map of Newcastle International Airport]
VIEW AND DOWNLOAD THE CLASSIFICATION TABLES

Search Uniclass2015: blast

Results 1 to 2 of 2

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ss_25_16_08</td>
<td>Blast barrier systems</td>
</tr>
<tr>
<td>Ss_25_16_08_44</td>
<td>Jet blast deflection systems</td>
</tr>
</tbody>
</table>

Filter by:
- Systems
- All tables
- Complexes
- Entities
- Activities
- Spaces/locations
- Elements

DOWNLOAD THE TABLES:
- Co Complexes
- En Entities
- Ac Activities
- SL Spaces/locations
- Ee Elements
- Ss Systems
- Pr Products
- Zz CAD

Plan
- Elevation
- Model
- 2D Section
VIEW AND DOWNLOAD THE CLASSIFICATION TABLES

Search Uniclass2015: blast

Results 1 to 6 of 6

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pr_20_31_35_33</td>
<td>Granulated blast furnace slag</td>
</tr>
<tr>
<td>Pr_20_31_35_34</td>
<td>Ground granulated blast furnace slag</td>
</tr>
<tr>
<td>Pr_20_31_35_60</td>
<td>Partially ground granulated blast furnace slag</td>
</tr>
<tr>
<td>Pr_25_71_57_44</td>
<td>Jet blast deflectors</td>
</tr>
<tr>
<td>Pr_40_70_31_06</td>
<td>Blast chiller cabinets</td>
</tr>
<tr>
<td>Pr_40_70_31_08</td>
<td>Blast freezer cabinets</td>
</tr>
</tbody>
</table>

DOWNLOAD THE TABLES:

- Co Complexes
- En Entities
- Ac Activities
- SL Spaces/locations
- Ee Elements
- Se Systems
The tables in the BIM process
<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
<th>Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Strategy</td>
<td>Complexes; Activities</td>
</tr>
<tr>
<td>1</td>
<td>Brief</td>
<td>Complexes; Entities; Activities</td>
</tr>
<tr>
<td>2</td>
<td>Concept</td>
<td>Entities; Activities; Spaces/ locations; Elements/ functions</td>
</tr>
<tr>
<td>3</td>
<td>Definition</td>
<td>Spaces/ locations; Elements/ functions; Systems</td>
</tr>
<tr>
<td>4</td>
<td>Design</td>
<td>Systems; Products</td>
</tr>
<tr>
<td>5</td>
<td>Build and commission</td>
<td>Systems; Products</td>
</tr>
<tr>
<td>6</td>
<td>Hand over and close out</td>
<td>Systems; Products</td>
</tr>
<tr>
<td>7</td>
<td>Operation and end of life</td>
<td>Complexes; Entities; Activities; Spaces/ locations; Elements/ functions; Systems; Products</td>
</tr>
</tbody>
</table>
Terminology
Terminology and language

Terminology has been the major hurdle to understanding the classification throughout the construction industry.

We have developed a library of synonyms to help search for terms
<table>
<thead>
<tr>
<th>Title</th>
<th>Classifications</th>
<th>Synonyms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellular plastics underlays</td>
<td>Uniclass2015: Pr_35_57_11_11 Cellular plastics underlays;</td>
<td>cellular plastics carpet underlays; polymeric foam underlays; polyurethane underlays;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cellular rubber underlays</td>
<td>Uniclass2015: Pr_35_57_11_13 Cellular rubber underlays;</td>
<td>cellular rubber carpet underlays; vulcanized rubber foam underlays; vulcanised rubber foam underlays;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combined fibrous or non-fibrous underlays</td>
<td>Uniclass2015: Pr_35_57_11_15 Combined fibrous or non;</td>
<td>combined fibrous or non-fibrous carpet underlays;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cork underlayment</td>
<td>Uniclass2015: Pr_35_57_11_36 Hessian-faced cork underlays;</td>
<td>hessian-faced cork linoleum underlayment;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impregnated fibrous underlays</td>
<td>Uniclass2015: Pr_35_57_11_40 Impregnated fibrous underlays;</td>
<td>impregnated fibrous carpet underlays;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Needle felt underlays</td>
<td>Uniclass2015: Pr_35_57_11_56 Needled felt underlays;</td>
<td>needled felt carpet underlays;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubber crumb underlays</td>
<td>Uniclass2015: Pr_35_57_11_74 Rubber crumb underlays;</td>
<td>vulcanized rubber crumb carpet underlays; vulcanised rubber crumb carpet underlays;</td>
</tr>
</tbody>
</table>
How the tables are coded
Coding

In order to make the tables flexible enough to accommodate as many objects as possible the format chosen involves either four or five pairs of characters.

The initial pair identify which table is being used and are alpha characters.

For example:
- Co  Complexes
- En  Entities
- Ss  Systems
- Pr  Products
Coding

The tables with four pairs of characters are those which do not require a great level of granularity.

These are:
• Co Complexes
• En Entities
• SL Spaces/ location
• Ac Activities

The Systems and Products tables require a greater level of granularity in order to accommodate all the items so have five pairs of characters.

The Elements table is alone in having only three pairs of characters.
Coding

The four following pairs represent groups, sub-groups, sections and objects. By selecting pairs of numbers it allows up to 99 items in each group of codes and this facilitates the inclusion of objects for all the sectors required.
Coding

For example:

System:  Ss_50_75_98_96 Wastewater tank flushing systems
• Group  Ss_50 Disposal systems
• Sub-group  Ss_50_75 Wastewater storage, treatment and disposal systems
• Section  Ss_50_75_98 Wastewater tank systems

System:  Ss_30_10_30_85 Timber roof framing systems
• Group  Ss_30 Roof, floor and paving systems
• Sub-group  Ss_30_10_Pitched, arched and domed roof structure systems
• Section  Ss_30_10_30 Framed roof structure systems
Coding

For example:

Products: Pr_60_45_24_72 Rotary reaction trickling filter distributor arms and syphons
  • Group Pr_60 Services source products
  • Sub group Pr_60_45 Wastewater filtration and treatment products
  • Section Pr_60_45_24 Distributor products

Products: Pr_20_85_90_37 Hardwood trussed rafters
  • Group Pr_20 Structure and general products
  • Sub group Pr_20_85 Support and restraint products
  • Section Pr_20_85_90 Trusses and lattice frames

UNICLASS: as it lives and breathes
Coding

At certain levels of coding the order of objects becomes alphabetical and this allows a method of coding that permits the addition of a new object in a logical place.

- 65_54_94_23 Direct spring operated pressure relief valves
- 65_54_94_24 Double orifice air valves
- 65_54_94_26 Eccentric plug valves
- 65_54_94_30 Flexible rubber check valves
- 65_54_94_31 Free discharge valves
- 65_54_94_39 Hydrostatic bellmouth valves
- 65_54_94_45 Knife gate valves
Consultation
Consultation

Major professional bodies in the construction industry:

- RIBA
- RICS
- ICE
- CIBSE
- UKCG (now Build UK)
- BIFM
- CIOB
Consultation

Government departments:

- Highways England
- Environment Agency
- Ministry of Defence
- HS2
- Transport for London
- Radioactive Waste Management
Consultation

Other organisations:

- Manchester City Council
- University of Birmingham
- Royal HaskoningDHV
- Vectorworks
Consultation

- We need your input.
- Let us know if you can’t find what you are looking for.
- Ask for a new code.
- This is a dynamic classification system.
Managing the changes
Managing change

• When we publish a new version you get a detailed list of what has changed.

  – [Classification article]
# Table update

## Download the Tables:

The current status of the classification tables is listed below.

<table>
<thead>
<tr>
<th>Table</th>
<th>Status and revision information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co - Complexes</td>
<td>v1.0, Published January 2016</td>
</tr>
<tr>
<td>En - Entities</td>
<td>v1.0, Published January 2016</td>
</tr>
<tr>
<td>Ac - Activities</td>
<td>v1.0, Published January 2016</td>
</tr>
<tr>
<td>SL - Spaces/locations</td>
<td>v1.1, Published April 2016</td>
</tr>
<tr>
<td>EF - Elements/functions</td>
<td>v1.1, Published January 2016</td>
</tr>
<tr>
<td>Ss - Systems</td>
<td>v1.3, Published April 2016</td>
</tr>
<tr>
<td>Pr - Products</td>
<td>v1.3, Published April 2016</td>
</tr>
<tr>
<td>Zz- CAD</td>
<td>v1.0, Published July 2015</td>
</tr>
</tbody>
</table>
Details of change

Uniclass 2015
Ss – Systems table v1.3

4 April 2016

General changes
In consultation with Highways England, the Environment Agency and Transport for London and in response to requests for new codes, the Systems table has been amended as detailed below.

A major area of change has seen the Retaining wall codes moved from the 15 Group to the 20 Structures group as these are permanent constructions not preparatory works. In addition to this the group description for 15 has been changed to Earthworks systems and the subgroups and sections rationalised. Systems for demolition and deconstruction have been included in the Activities table and are removed from the Systems table.

Particular changes

<table>
<thead>
<tr>
<th>v1.2 Code</th>
<th>v1.3 Code</th>
<th>Code description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td></td>
<td>Earthworks systems</td>
<td>System renamed from &quot;Preparatory systems&quot;, Preparatory systems renamed &quot;Preparation and repair&quot; and included in Activities table as Ac_10. System subsequently replaced.</td>
</tr>
<tr>
<td>15-10</td>
<td></td>
<td>Geotechnical and earthworks</td>
<td></td>
</tr>
</tbody>
</table>
Questions and discussion

Sarah Delany
Head of Classification and Technical Author, NBS

sarah.delany@theNBS.com