

# *aec (uk) cad standard for model file naming*

*A unified CAD Standard for the Architectural,  
Engineering and Construction industry in the UK.*

*Version 2.4*

*Based upon the guidelines laid down in BS1192 part 5 and  
ISO 13567 using the Uniclass classification system.*

**aec (uk) cad standard**

# Contents

**BACKGROUND** ..... 3

**The Committee** ..... 4

**SCOPE** ..... 5

**MODEL FILE NAMING** ..... 6

**Reasons for a Model File Naming Standard** ..... 7

**Considerations & Principles** ..... 8

**Project Folder Structures** ..... 8

**Model Files and Drawing Files** ..... 9

**The Basic Model File Naming Convention** ..... 10

**The Full File Naming Convention** ..... 11

    Project ..... 12

    Discipline ..... 13

    Zone ..... 14

    View ..... 15

    Level ..... 16

    Content ..... 17

    Sequential Number ..... 18

    File Extension ..... 19

    Revision ..... 20

    Examples ..... 21

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1.0	Jan 2005	Issued as first version	AEC(UK)CADStandardsForModelFileNaming-v1.0.pdf

## *Background*

At the end of 2001 the AEC (UK) CAD Standards Initiative was formed to improve the process of CAD standards management and data sharing. Initially the initiative addressed layering conventions as the primary concern for users of CAD data. The initiative has expanded through demand to cover detailed aspects of CAD data production and information exchange.

The AEC (UK) CAD Standard Basic Layer Code was released in 2001, with an Advanced Code released in 2002.

The AEC (UK) CAD Standard has been developed from previously existing CAD standards documentation (BS1192 part 5, Autodesk User Group's CAD Layering in The Construction Industry, and the committee's own internal and project-based CAD standards) in order to provide an update of those documents to allow for more up-to-date CAD usage.

An additional document outlining the fundamental principles of AEC processes – CAD file management, drawing issues and data exchange, archiving etc, is planned for release in 2005.

## *The Committee*

The group has representatives from architectural, engineering and construction companies in the UK, large and small, hence the adoption of the AEC (UK) moniker. The File Naming committee includes representation from Architects Design Partnership, Building Design Partnership, Dyer Brown, Kohn Pederson Fox, Mott MacDonald and Richard Rogers Partnership, working together to realise a unified, usable, co-ordinated approach to CAD.

### *Chair*

Nigel Davies	Evolve Consultancy	nigel@evolve-consultancy.com
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### *Committee*

Brian Duguid	Mott MacDonald	brian.duguid@mottmac.com
David Moyes	BDP	d-moyes@bdp.co.uk
Duncan MacDonald	Dyer Brown	dmacdonald@dyerbrown.co.uk
Karen Fugle	Kohn Pedersen Fox	kfugle@kpf.co.uk
Lars Hesselgren	Kohn Pedersen Fox	lhesselgren@kpf.co.uk
Lynne Taylor	Cadconsultancy	lynne.taylor@cadconsultancy.co.uk
Marc Thomas	Architects Design Partnership	marct@adp-architects.co.uk
Simon Williams Gunn	Richard Rogers Partnership	simon.w@rrp.co.uk

### *Disclaimer*

All the advice outlined in this document is for information only. The authors and contributing companies take no responsibility for the utilisation of these procedures and guidelines. Their suitability should be considered carefully before embarking upon any integration into your current working practices.

## *Scope*

The AEC (UK) CAD Standards For File Naming aims to build on the guidelines defined by the CPIC initiative and the PIX Protocol, providing a base starting point for a unified CAD standard that can easily be adopted “as is” or developed and adapted for implementation within companies that have specific requirements for the structuring of their CAD data.

**This document intends to provide CAD platform-independent guidelines for CAD “Model” file naming.**

It does not currently address “Drawing” file naming or “Symbols” (blocks and cells) except for very basic guidance.

This document does not provide implementation advice as internal situations vary too greatly to determine a conclusive approach. Instead we recommend analysing your own internal requirements before adopting all or part of this standard, consulting with similar companies, professional consultants, user groups or project teams that have already utilised these guidelines.

### *Copyright Notice:*

It is important to note that this standard will only become truly useful if as many companies adopt it as possible. To that extent, it may be freely distributed and used in any format necessary.

## *Model File Naming*

*aec (uk) cad standard*

## *Reasons for a Model File Naming Standard*

A naming convention is required to ensure that all files created on a project can be identified quickly, accurately and without ambiguity. Ownership, location, type of file and a unique number are all of paramount importance when identifying the content of a CAD file.

The choice of which standard to base the classification upon was crucial to its successful operation. It was clear that it should be firmly based on an accepted industry standard. This was quite naturally BS1192. However in its current form BS1192 had never provided enough scope for modern CAD operations.

This standard defines guidance for a file naming convention suitable for multidiscipline project working. It is based on codes in designated fields.

## Considerations & Principles

### Project Folder Structures

It is important when implementing these recommendations that the use of Project Folders is taken into account. Folders can add a level of identification to a file simply by its location within the structure. A balance must be reached between a unique file identifier and easy searching.

A typical folder structure would normally include the following:

1234	Top level project number
3D	3D models
Archive	Archive/superseded files
Data	Project-specific settings
Borders	Drawing borders
Logos	Company/client logos
Settings	Batch settings, translation settings,
Symbol	Blocks and cells
Template	Template and seed files
Detail	Detail Model files
Grid	Grid files
Images	JPGs, TIFFs, etc
In	Incoming/imported files stored in dated folders yymmdd
Out	Outgoing/exported files stored in dated folders yymmdd
Plan	Plan model files
Plot	Finished drawing files
Section	Section model files
Survey	Survey files & data



## *Model Files and Drawing Files*

It is generally more appropriate to separate the CAD elements of a design into separate “model” or “design” files.

### **1. Model Files**

A Model file is generally defined as the file containing the *building elements* in 2D or 3D CAD format, drawn at true scale (i.e. 1:1).

### **2. Finished Drawing Files**

A Finished Drawing file is the CAD file set up to represent the *paper output* including a drawing border and annotations, often produced at paper size. This document does not cover standards for Finished Drawing Files.

## The Basic Model File Naming Convention



### Field 1: Discipline (2 char max)

This is a simple list of single or double character codes identifying the owner of the file (refer to the "Discipline" section, page 13).

### Field 2: View (1 char)

View explains the orientation of a file's contents – whether it is a plan, elevation, etc (refer to the "View" section, page 15).

### Field 3: Level (2 char)

Used to identify the floor or section reference (refer to the "Level" section, page 16).

### Field 4: Content

This is a simple list of descriptions or Uniclass codes denoting the type of information stored in the file (refer to "Content" on page 18).

### Field 5: File Extension

The file extension is used by the computer's operating system to denote the application that controls or is used to open a file.

We recommend strongly that extensions are not altered from the defaults provided by the CAD software (DWG, DGN, HLN, etc). File extensions should *not* be used to describe contents of the file as was common in 8.3 file naming systems (e.g. .pln, .sec) as this can lead to confusion and incompatibilities with basic computer operations.

### General Notes

Only use letters A-Z, numbers 0-9 for all fields of file naming.

A single period character "." should be used to separate the file name from the extension. This character should not be used anywhere else in the file name.

All fields should be separated by a hyphen character "-" to distinguish between the fields and aid comprehension. Do NOT use spaces.

An "x" should be used if the contents of a file do not refer a single specific View or Level and it is decided that the fields should still be used to maintain identical file name lengths.

e.g.

A-P-01-Part.dwg

Architectural plan of the first floor partitions

A-S-xx-AA.dgn

Architectural full building section A-A

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## The Full Model File Naming Convention

Project	Discipline	Zone	View	Level	Content	Seq No.	.ext
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**Field 1: Project** (unlimited characters)

*Optional*

A numeric code related to the project or job number. This may be an internal project code or it may be a client or contractor code.

**Field 2: Discipline** (2 char max)

*Recommended Mandatory*

This is a simple list of single or double character codes identifying the owner of the file (refer to the "Discipline" section, page 13).

**Field 3: Zone**

*Optional*

The location of the CAD file when a project is split into separate areas, buildings or phases. (refer to the "Zone" section, page 14).

**Field 4: View** (1 char)

*Recommended Mandatory*

View explains the orientation of a file's contents – whether it is a plan, elevation, etc (refer to the "View" section, page 15).

**Field 5: Level** (2 char)

*Recommended Mandatory*

Used to identify the floor or section reference (refer to the "Level" section, page 16).

**Field 6: Content**

*Recommended Mandatory*

This is a simple description or Uniclass code denoting the type of information stored in the file (refer to "Content" on page 18).

**Field 7: Sequential Number**

*Optional*

Used to denote a file's option or version (refer to "Sequential Number" on page 19).

*Note:* The exact order of the standard fields may be adjusted to suit storage requirements on each project, provided it is clearly identified to all team members.

*Project*

A project code should be included with a file name. This allows every file to have a completely unique identifier so that when a file is stored out of its original environment or project folder structure, it is emailed or archived there is no ambiguity as to where the file belongs.

The project code may either be an internal job number or a co-ordinated reference specified by the client or contractor for the purposes of data management across the complete design and construction teams.

**Example File Name**

1234-

*Discipline*

The letters A to Z define the author, or owner, of the data presented in the file. This allows various disciplines to use the same file name codes for the same area of a project while maintaining individual accountability.

**Code Description**

A	Architect
AL	Landscape Architects
B	Building Surveyors
C	Civil Engineers
CB	Bridge Engineers
CD	Drainage, Sewage & Road Engineers
CW	Water/Dam Engineers
D	Spare
E	Electrical Engineers
F	Facilities Managers
G	GIS Engineers & Land Surveyors
H	Heating and Ventilation Engineers
I	Interior Designers
J	Telecommunications
K	Client
L	Lift Engineers
M	Mechanical Engineers
ME	Combined Services
N	Spare
P	Public Health Engineers
Q	Quantity Surveyors
R	Railways
RS	Railways Signalling
RT	Railways Track
S	Structural Engineers
SF	Façade Engineers
SR	Reinforcement Detailers
T	Town & Country Planners
U	Spare
V	Spare
W	Contractors
X	Sub-Contractors
Y	Specialist Designers
YA	Acoustic Engineers
YF	Fire Engineers
YL	Lighting Engineers (Non-Building Services)
Z	General (Non-Disciplinary)

**Example File Name**

1234-A-

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## Zone

If a project is split into specific areas, buildings, zones or phases, this field may be used to identify which segment of the project the data relates, easing the presentation and tracking of information.

The scheme for sub-division should be agreed with the other project professionals and then explained clearly in the project CAD Manual.

### Example Codes

<b>Zone</b>	<b>Description</b>
01	Building or zone 1
02	Building or zone 2
A	Building or zone A
B	Building or zone B
B1	Building 1
BA	Building A
Central	Central zone
CP	Car park
Line2	Railway line 2
MP	Masterplan
Off	Office building
P1	Phase 1
Ret	Retail
South	Southern zone
Z1	Zone 1
ZA	Zone A
...	...

### Example File Name

1234-A-Off-

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*View*

The "View" represents the direction of view, or type, of information contained within the file. This allows the differentiation of plans, sections, elevations, details, reflected plans, etc.

It is recommended as best practice that no file should ever contain a mixture of plans, sections, elevations and details - these should always be kept in separate files to allow ease of tracking/searching and project co-ordination between disciplines.

**Example Codes**

<b>Code</b>	<b>Description</b>
P	Plan
D	Detail
E	Elevation
R	Reflected Plan
S	Section
3	3-Dimensional
...	...

**Example File Name**

1234-A-Off-P-

*Level*

A project or building will normally be horizontally divided for floor plans and vertically divided for sections. It is recommended that a Model file should contain information pertinent to a single level/floor only to aid audit trails and tracking of data. The Level field is used to distinguish those divisions.

The scheme for levels should be agreed with the other project professionals and then indicated in a project CAD Manual. If the content relates to no specific floor, and it is decided that the length of the file name needs to be maintained, "xx" should be used.

For sections and elevations, this field should refer to the section call-up reference.

**Example Codes**

<b>Code</b>	<b>Description</b>
B2	Basement 2
B1	Basement 1
PL	Piling
FN	Foundation
00	Ground
01	First
M1	Mezzanine 1
M2	Mezzanine 2
02	Second
03	Third
...	...
RF	Roof*
A	Section A – A
B	Section B – B
01	Section 1 – 1
02	Section 2 – 2
11	Section 11 – 11
N	North Elevation
E	East Elevation
S	South Elevation
W	West Elevation

\* It is recommended best practice to continue using floor codes where no clear roof exists, or where a roof is multileveled and only use RF for the final topmost level.

**Example File Name**

1234-A-Off-P-M1-



*Content*

This field defines the type of CAD data portrayed in the file and can be used to describe any part of the previous fields or to further clarify any other aspect of the CAD data.

We suggest use of either the AEC (UK) Descriptive or Uniclass codes (from tables F Spaces, G Elements for Buildings, H Elements for Civil Engineering or J Work Sections for Buildings) to ensure continuity with the AEC (UK) layer standards.

Refer to the AEC (UK) CAD Standard For Layer Naming for descriptive codes.

Refer to Uniclass documentation for full Uniclass codes.

**Example File Name**

1234-A-Off-P-M1-Furn-

Or

1234-A-Off-P-M1-G42-

### *Sequential Number*

Simply used as a definition between two files in the same sequence and, if used, should be two digits maximum. The Sequential number may be used to identify options or versions or sketches of a scheme, or to identify section numbers.

The exact use and definition of options and versions is not specified in this code as this can vary greatly from company to company. In our examples there is no differentiation between options and versions.

Options and Versions should not be confused with Revisions.

### **Example Codes**

<b>Code</b>	<b>Description</b>
01	Option/Version 01
02	Option/Version 02
11	Option/Version 11
A	Option/Version A
B	Option/Version B
01A	Option 01, Version A
01A	Version 01, Option A
01C	Option 01, Version C
C01	Option C, Version 1
C01	Version C, Option 1
...	...

### **Example File Name**

1234-A-Off-P-M1-Furn-sk1

## *File Extension*

File extensions, meaning the normally 3-digit code after the period (.) in a file name, is used to identify the type of file or the software that is used to create/view/edit the file.

It is not recommended that these be altered from the expected extensions to maintain compatibility with the operating system. Altering extensions can often lead to confusion and in certain cases can cause the file to be unusable.

e.g.

DGN = MicroStation Design File  
DWG = AutoCAD Drawing File  
DWF = Autodesk Drawing Web Format  
MCD = Vectorworks File  
PDF = Adobe Portable Document Format  
PLT = Hewlett Packard HPGL/2 File

### **Example File Name**

1234-A-Off-P-M1-fur-sk1.dgn

## *Revision*

The revision of a file describes changes made to a drawing since the last issue. It is a record of a snapshot of a specific drawing at a single specific point in time issued for a specific purpose.

A CAD file is a set of continually developing information that is not complete until the project is finished. Revisions may be used to refer to drawings, renditions or plots created from a CAD file, but it is recommended best practice to omit revision codes from all CAD file names.

*Examples***The Basic Convention**

	<b>Description</b>
A-P-x-Grid.dgn	Architect – Plan – No floor – Grid
A-P-01-WallIntl.dgn	Architect – Plan – First floor – Internal walls
A-P-03-RfICeil.mcd <sup>1</sup>	Architect – Plan – Third floor – Reflected ceiling
M-R-03-G52.dwg <sup>1</sup>	Mechanical Services – Reflected ceiling – Third floor – HVAC
S-P-01-G25.dgn	Structural – Plan – First floor – Walls

**The Full Convention**

	<b>Description</b>
1838-S-C-P-03.dgn	Project 1838 – Structures – Building C – Plan – Third floor
1838-S-x-P-00.dwg	Project 1838 – Structures – Full site – Plan – Ground floor
S1-P-Off-M2-col-sk04.dgn <sup>2</sup>	Scheme 1 – Plan – Offices – Mezzanine 2 – Colour – Sketch 4
S1-E-Off-S-Shad.dgn	Scheme 1 – Elevation – Offices – Section – Shading
123456-CB-3-U789-H52-P1-BridgeModelPrelim1.dwg <sup>3</sup>	Project 123456 - Bridges - 3d model - Bridge named "U789" - Bridge structure - Preliminary option 1
04776-E-P-Typ-G53-Sch.dwg	Project 04776 – Electrical Services – Plan – Typical floor – Lighting – Schematic
1234-A-S-01-G22.dgn	Project 1234 – Architectural – Section – Sec No. 01 – Floor section

- 1 These examples demonstrate two approaches to reflected ceiling files. The architect does not need to identify the content of the reflected ceiling plan, whereas the mechanical engineer does.
- 2 This example demonstrates an internal model file naming convention where it is deemed unnecessary to distinguish the owning discipline.
- 3 In this example the “floor/level” field is omitted, as it bears no relevance to civil engineering works. An additional “alias” is used to describe the contents in full English.