BIM User Guide

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Revisions

DATE	REVISION #	COMMENT	AUTHOR
13 October 2017	2		Ben McKay
29 June 2022	3	Update to include Autodesk Construction Cloud	Anthony Zandvliet
27 April 2023	4	Update to Naming Conventions	Hayley Minnis
05 February 2024	5	Update to Naming Conventions	Dean Auger
03 April 2025	6	Clash Management Workflow Added	Dean Auger
07 April 2025	7	Discipline Codes Added	Dean Auger
29 August 2025	8	Document review and update	Ken Coppard

1 INTRODUCTION

The purpose of this document is to provide drawing procedures that must be adhered to by consultants involved with any development being undertaken by Wiley. The procedures are aimed at providing:

- A consistent set of working drawing documentation
- Easy transfer of information
- Collaborative workflows
- Efficient means of control of drawings

Wiley is committed to providing our clients with the best service possible and therefore, consultants working on behalf of Wiley are required to abide by instructions given. All consultants shall comply with the drafting standards stated in this guide, during the initial contract acceptance meeting, or during the first design meeting.

2   BIM SOFTWARE OVERVIEW

Wiley strive to be construction industry leaders for innovation and technology and have embraced Building Information Modelling (BIM) as the standard for building documentation and delivery.

BIM requires a commitment from all disciplines collaborating together to form one smart building model. BIM helps ensure that project information remains accessible continuously throughout the different project phases of design, procurement, construction, and operation, while providing design efficiency, accuracy, co-ordination and data reliability.

Wiley produces drawings using a combination of 2D & 3D software.

Revit Architecture, Revit Structure, Revit MEP are the preferred documentation software. Revit version will be agreed by the project team at the BIM start up meeting. Consultants not using this software should advise Wiley, so an appropriate format can be agreed on.

Autodesk Collaboration Cloud - Wiley uses the (ACC) to save, store and collaborate the Revit models.
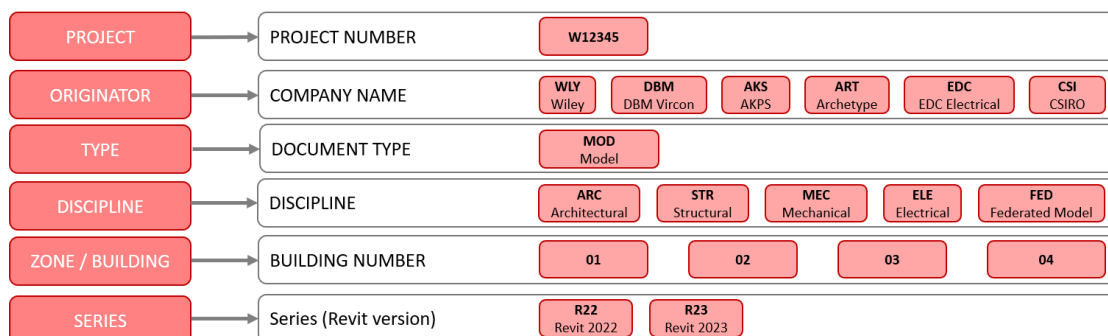
Any changes in software or version upgrades must be communicated to the BIM team prior to the change or upgrade.

3   FILE NAMING CONVENTIONS

3.1   (Model) Revit File Naming

WXXXXX-WLY-MOD-ARC-01-(R23)

{Wiley project no. – Originator – Type – Discipline – Building Number – (Revit Version)}

Based on the principles set out in BS1192: 2007 and the UK National Annex to ISO 19650.

Project	-	Originator	-	Type	-	Discipline	-	Zone / Building	-	Series
W12345	-	WLY	-	MOD	-	ARC	-	01	-	R23

Figure 1 - Revit file naming

3.2   Drawing Sheet Naming

Wiley Standard Naming Conventions:

Wiley's naming convention is aligned to ISO 19650. An example of the naming convention can be seen below in Figure 2.

WILEY DOCUMENT NAMING CONVENTION
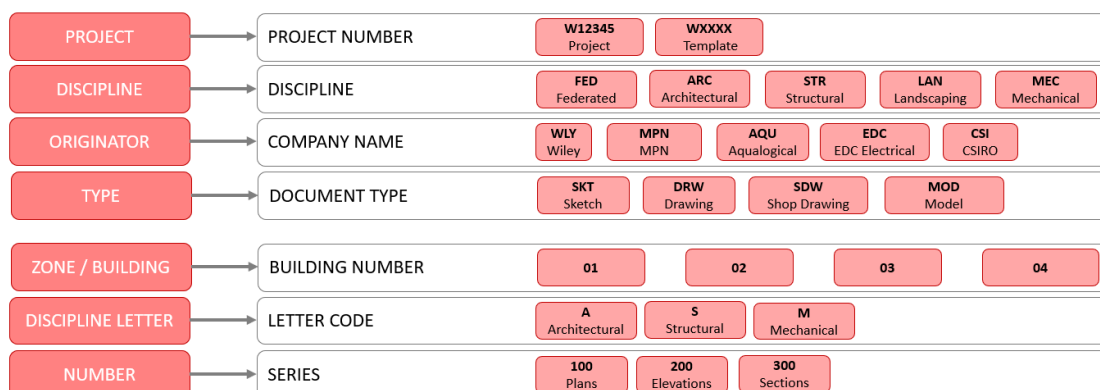
Based on the principles set out in BS1192: 2007 and the UK National Annex to ISO 19650.

Project	-	Discipline	-	Originator	-	Type	-	Zone/Building	Discipline Letter	Series
W12345	-	ARC	-	WLY	-	DRW	-	01	A	100

These fields are in sequence and not separated

EXAMPLE: Project, Architectural, Wiley, 2D Drawing, 01 Building, Architectural, Plans

Figure 2 - Example of standard naming convention

There are required attributes within the Wiley standard naming convention e.g. document types, disciplines, and originators. The information and diagrams below outline Wiley's requirements for these attributes.

3.2.1 Project

The Project number for the work being completed is generated by Wiley and can be found as the first 6 characters in the project portal name.

3.2.2 Discipline

The Discipline describes the trade (in reference to subcontractor / consulting workforce) and the Functional Unit (Wiley procedures, policies and forms). Any additional Discipline attributes must be approved by the Project Manager / Design Manager. Once approved, additional attributes will be set up by Doc Control via Helpdesk correspondence. Refer to **Figure 2** for all available attribute types.

Table 1 - Discipline Abbreviation and Letters

DISCIPLINE	DISCIPLINE ABBREVIATION	DISCIPLINE LETTER
Acoustic	ACT	AC
Architectural	ARC	A
Audio Visual	AUD	AV
Building Certifier	BCA	BC
Civil	CIV	C
Commissioning	CMM	CM
Electrical	ELE	E
Fire	FIR	F
Gas Services	GAS	G
Hydraulic	HYD	H
Landscape	LAN	L
Mechanical	MEC	M
Process	PRO	P
Refrigeration	REF	R
Steam	STM	ST
Structural	STR	S
Survey	SUR	SU
Vertical Transport	VTR	V

3.2.3 Originator

The Originator will include all stakeholders that are creating content for deliverables throughout the life of the project. The BIM Execution Plan (BEP) outlines the project delivery team and will designate the Originator acronym for each appointed party.

3.2.4 Document Type

The Type is describing the type of document that is being provided. The diagrams below outline Wiley's requirements for Type acronym references. Any additional Type attributes must be approved by the Project Manager / Design Manager. Once approved, additional attributes will be set up by Doc Control via Helpdesk correspondence. Refer to **Figure 3** for all available attribute types.

Document Type	Code
Agreements	AGT
Bill of Quantities	BOQ
Brief	BRF
Calculations	CAL
Certificate	CER
Commissioning & Test Record	CTR
Contract	CON
Data Sheet	DSH
Design Package	DSP
Drawing	DRW
Forms	FOR
Compliance Statement	CST
Inspection and Test Plan	ITP
Management Plan	PLN
Matrix	MTX
Method Statements	MST
Model	MOD
Manual	MAN
Operating Instructions	OMI
Operation & Maintenance Manual	OMM
Photograph	PHO
Presentation	PRS
Policy	POL
Procedure	PRO
Program	PGM
Register	REG
Room Data Sheet/Layout	RDS
Report	RPT
Sample	SMP
Schedule	SCH
Scope of Works	SOW
Shop Drawing	SDW
Site Acceptance Test	SAT
Sketch	SKT
Standard	STA
Specification	SPC
Template	TMP
Warranty I Guarantees	WRY
Transmittal	TRM

Figure 3 - Attribute Types

3.2.5 Zone / Building

The Zone / Building is a project specific requirement. Projects with multiple buildings on one site need to have unique numbers assigned to each building and noted on the site plan. A project with only one building will still be given a building number of 01. Any non-zone / building specific Documents will use (XX) attributes wherever this attribute is not applicable.

3.2.6   *Discipline Letter*

The Discipline describes the trade (in reference to subcontractor / consulting workforce) and the Functional Unit (Wiley procedures, policies and forms). This helps with sheet naming in authoring tools. Refer to **Table 1.**

3.2.7   *Series*

Drawing series:

The drawings for a project are separated into a specific series number to allow for easy identification to represent different categories of drawings. Refer to the table below for a full list of these categories.

000	Cover Sheet	= Cover Sheet
001 – 099	Site & Siteworks	= Locality, Siteworks, Bulk Earthworks, Site details etc.
100 – 199	Plans	= 1:200, 1:100, 1:50
200 – 299	Elevations	= External
300 – 399	Sections	= 1:100, 1:50
400 – 499	Part Sections	= 1:25
500 – 599	Construction Details	= 1:10, 1:5 Plans/Sections
600 – 699	Trade Specific	= Stairs, Guardrails, Conc. coves etc.
700 – 799	Detailed areas	= Amenities Plans/Elevations etc., Joinery Detailing
800 – 899	Spare	= Design Managers to assign drawings to this category if needed
900 – 999	Schedules	= door, window, louvers including elev & specific details

Figure 4 - Categories

Document series:

The Document series is the unique identifier within the naming convention. When generating Document series from the document register it is strictly the next available number in the sequence.

Project teams will be required to ensure that documents of all types have a unique three numerical character sequence.

3.3   **Revision / Issue**

W01234-ARC-WLY-DRW-01A101-1-Proposed Ground Floor Plan

All drawing files under revision should have the extension of $ which indicates a drawing has not been issued. All following Revisions will be numeric and increase sequentially. Consultants shall use this naming convention for all drawings using Wiley title sheets. The consultants' project and drawing number shall appear in the space allocated for the consultants above the amendment column in the title sheet.

Transmittals issued to Wiley shall use the Wiley naming convention for ease of identification, however the consultant may also include their own naming convention for tracking their drawings internally.

4 REVIT

4.1 Project Start-up

To build an integrated BIM model, a great deal of importance is placed on communication and collaboration between the disciplines involved in a project. Before modelling starts, a meeting between Wiley and all consultants is essential to discuss coordination between disciplines for an effective BIM model. A BIM Execution Plan will be set in this meeting. A BIM Execution Plan is to provide a framework for Wiley consultants, architects, engineers, surveyors, contractors and owners to reference to deploy BIM processes and best practices throughout the project life cycle.

4.2 Platform

Revit Architecture, Revit Structure and Revit MEP and **AutoDesk Construction Cloud** is the documentation and collaboration software. Revit version is to be agreed by the project team at the BIM start-up meeting. Consultants not using this software should advise Wiley so an appropriate format can be agreed on. All consultants not using Revit will supply file types compatible with Revit if the data is to be used in the Building Model. It is not mandatory that shop drawings be submitted with compatible software, unless the shop drawings will be incorporated into the Revit Model.

Any changes in software or version upgrades must be communicated to the project team prior to the change or upgrade.

Each Consultant is responsible for having an Autodesk Construction Cloud platform to host their Revit model and collaborate with the Project Team.

Contact the Wiley BIM Systems Manager if you have any queries setting this up.

4.3 Coordination Conflicts / Model Ownership

As lead consultants, Wiley will own the main Architectural model. Consultants will provide their 3D information to be linked into the main Architectural model. If conflicts are found in any of the project files, promptly notify the authors so they can correct the problem. No modifications shall be carried out to either Wiley or Consultants models without prior agreement.

4.4 Project Coordinates

Wiley and their consultants will use Shared Coordinates to share their models accurately. These will be set by Wiley or lead architect, and all consultants will "acquire" them once the model has been consumed from the Design Collaboration module in ACC.

4.5 Grids

Contractors shall not set out building grids unless otherwise stated. Grids will be controlled by Wiley and shall not be altered by the consultants. The letters I, O and the number 0 shall not be used in grid drawings to avoid confusion.

4.6 Consultant Revit template

A Consultant Revit Template will be supplied by request at project start-up to consultants using Revit. This will contain Wiley Revit standards that can be brought into a consultant's drawing model by "Transferring project standards" inside Revit.

Standards included in the Wiley Consultant template are:

4.6.1 Title Sheet Family

Wiley's Title Sheet Family will be supplied to contractors by Wiley to facilitate a consistent appearance within a project. This title sheet by Wiley MUST NOT be altered. The tick box inside Wiley's Title Sheet Family "CONSULTANT LOGO" shall be ticked and the consultant's logo and company name can be inserted into the space provided. This space also allows for the consultant's project and drawing numbers. The main title block shall contain the Wiley numbering system (Refer to the drawing numbering section within this document). If it is arranged at the time of acceptance

of the design work, that the consultant's own title sheets are used in lieu of Wiley title sheets, then an appropriate sheet size must be used. That is, if the Wiley design work is on A1 sized sheets, then the consultant must use A1 size sheets.

Please consult the BIM Systems Manager at Wiley for a detailed overview of the Wiley Revit title block as it has numerous options built in when preparing a title sheet.

4.6.2   Style/fonts

Only "True Type" fonts are to be used in a Revit project due to "Open Type" font incompatibilities. If non-standard fonts are used, due to third party packages etc., then the required font shall be supplied to Wiley.

In Wiley Revit drawings, notations are done using the font "Calibri". All general drawing notation shall be done in lower case and use this style. The font used for this style must not be altered and if the consultant requires a different text, then a new style shall be created.

Text height must not be less than 2.5mm so text can be kept legible if printer reduction is needed.

4.6.3   Dimensions

Contractors are to use dimension styles supplied in the Wiley Revit Template. All dimensions are to be accurate and dimensions in a model are not to be overridden.

4.6.4   Work sets

Consultants must as a minimum, assign levels and grids to the pre-setup work-set "shared levels and grids". Any additional work-sets must be approved by the Principal Contractor. This will allow the delivery team to easily open and close linked models – levels and grids where necessary.
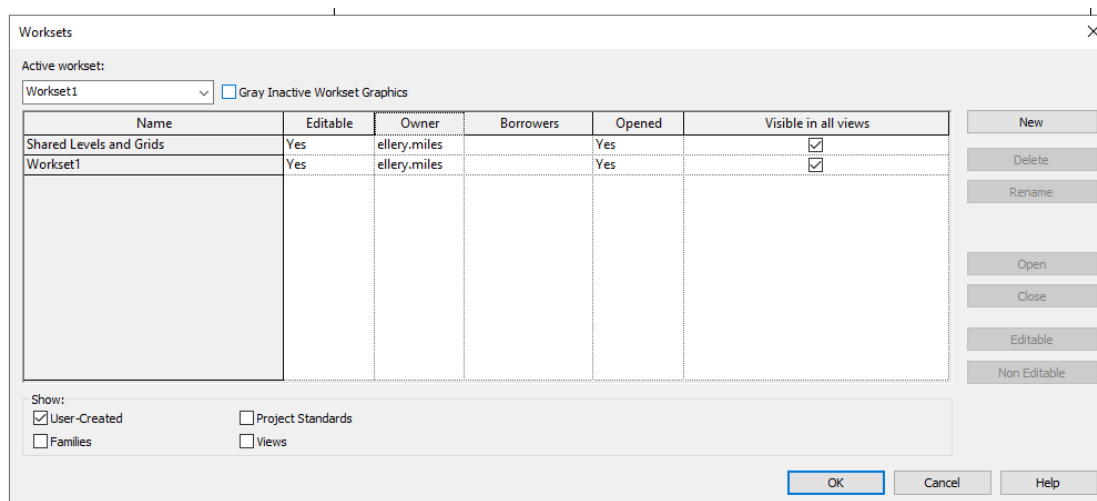

Figure 5 - Work sets

All Consultants are required to ensure all grids and levels remain on the default *"Shared Levels and Grids"* Workset for collaborative control. All contractors are required to maintain consistency with their organisation Workset standards.

'Workset 1' should be renamed to relevant name for model, 'Arch Model', 'Strc Model' etc.

Once the Worksets have been created, they can be controlled Globally through Manage Links or by view through 'Visibility and Graphics' and filters:

- **ARC-04-BLDG-WLY** (all the building elements for the 04 building model, modelled by Wiley)
- **ARC-04-STRC-WLY** (all the structural elements for the 04 building model, modelled by Wiley - that may be subbed out for consultants' model elements)
- **ARC-04-RFRG-WLY** (all the Refrigeration elements for the 04 building model, modelled by Wiley - that may be subbed out for consultants' model elements)
- **STRC-04-COLS-MPN** (Consultants' model for 04 building structure, by MPN)
- **STRC-04-CONC-MPN**

- **RFRG-04-RFRG-GBI** (Consultants' model for 04 building Refrigeration, by GBI)
- **HYDR-04-IGRD-AQUA**
- **HYDR-04-AGRD-AQUA**
- **X-RVT** (linked Revit models)
- **X-CAD** (linked CAD models/files)
- **X-PTC** (linked point clouds)

Placeholders for consultants – enables the consultants placeholder elements model in the Arch model visibility to be turned off so Consultants and/or Fabricators model can be shown in place:

- Structure (Arch)
- Services (Arch)
- Refrigeration, pipework, equipment (FDC), valves, condensates,
- Hydraulic, pipework, fittings, and fixtures
- Electrical, cable trays, equipment (switchboards), conduits, lighting
- Mech and HVAC, ducts, flex ducts Equipment (AHU's), air terminals
- Shared Level and Grids
- Building Works (all general architectural stuff)
- Site Works (all site associated stuff – in Site model or site elements in the Arch model)

5   CLASH IDENTIFICATION AND MANAGEMENT

Clash management is a fundamental process to ensure the successful integration of all disciplines in the BIM workflow.

After the establishment of project upload times with the project lead coordinator, each discipline will upload a .NWC file into their ACC project folder for federation. The NWC will be exported from a clean 3D view from Revit and shall only contain 3D elements that are in scope. These files will form a federated project model that will be used for clash detection using Navisworks.

All models should include separate 3D representations of required clearances and/or access requirements for equipment access, light clearances, overhead cable tray access, etc. These clearance/access models should be in a separate layer(s) for each trade clearly labelled as such.

Modelled insulation should be in a separate layer from other model elements and labelled as such

Clash detection and resolution process using Navisworks is listed below.

5.1   Hierarchy of trade models

From the hierarchy below, clashes will be identified and be the responsibility of the discipline to resolve the issues that arise to other above them in the hierarchy. This negates the management of minor clashes and clears up who is to move to coordinate the area. Where you find a clash that cannot be resolved, they are flagged and brought to the coordination meeting for discussion.

1	Architectural
2	Structural
3	Drainage
4	HVAC
5	Electrical Lighting
6	Hydraulics (Pipework)
7	Fire
8	Electrical

Figure 6 - Clash hierarchy

5.2   Collaboration and resolution workflow

The project team will work together to resolve clashes identified in Navisworks Clash Detective through the following steps:

- **Step 1: Clash Identification:** Navisworks will automatically detect clashes between trade models based on the predefined clash test sets.
- **Step 2: Clash Review:** All trades will receive a federated NWD dated each week with the clashes identified.
- **Step 3: Resolve Clashes:** It is the responsibility of the discipline lower in the hierarchy to resolve identified clashes as per the above. Resolution will involve adjusting the design, re-routing systems, or modifying components to eliminate conflicts. This may include changes to the geometry, placement, or alignment of elements.
- **Step 4: Model Updates:** After resolving clashes, the trade models will be updated and a new NWC uploaded to ACC for further clash detection. New clash tests will be run each week to ensure all conflicts have been addressed.
- **Step 5: Documentation and Tracking:** All clashes, resolutions, and model updates will be documented within Navisworks. A clash report will be generated to track progress and identify any unresolved issues.

6 DESIGN DRAWINGS

6.1 Drawing index

A drawing index is to be provided as cover sheet to a set of drawings for larger projects or as requested by Wiley. A single drawing index should be inserted to the relevant size cover sheets i.e. an A1 sheet if the drawing is on A1 size sheets.

6.2 Key plans

For larger projects, generally those with multiple buildings, Site / Building Key Plans will be made available by Wiley and is to be inserted on to the final compiled drawings and shaded to show the respective area that the Plans / Details apply to. Therefore, the process of co-ordinating drawings and sets between consultants and to site will be more efficient. Allow to use the top right vacant area of the title sheet for standard style key plans.

6.3 Legends

Allow to use the top right vacant area of the title sheet for standard style legends. Co-ordinating between key plan and legend location shall be controlled by Wiley.

7   REVISIONS

7.1   Change register

A change register must be issued with every drawing issue. This can be found in the Wiley Revit Template file. Revision clouds are to be used when multiple small changes to drawings occur, to allow easy identification of changes. The amendment column of the title sheet shall include a description of the amendments. Do not use the generic term "revision", rather give a brief description of the amendment e.g. "door numbers revised". Revisions are to be noted in the title block, beside the drawing number. The revision / issue information is to be updated prior to re-issuing the amended drawings. As stated under the file naming convention, all drawings issued must have an identification number. Wiley uses a line drawn through the revision number and a note stating that the drawing is under revision to notify that the drawing is currently being amended.

8   PROCESS EQUIPMENT

Autodesk's Revit is the preferred drawing software Wiley use to document projects. Wiley have embraced 3D modelling / BIM and request all suppliers and sub-consultants provide (if applicable) 3D models that can be imported and documented in Revit.

9 STANDARDS

As Revit is Wiley's main documentation software, specific standards are required for efficient and accurate integration of consultants' equipment into the documentation model:

- File size to be kept to a minimum. As a guide, 20MB is considered a large file. Please consult with Wiley if the file size exceeds this limit.
- Only the outside skin and connection points are relevant for building documentation. All other non-visible and internal components that are not critical in building set out, service connections or connections to adjoining production equipment connections are to be removed.

10   ACCEPTABLE FILE FORMATS

Wiley's preferred file format are as follows:

- Revit: *.rvt , *.rfa
- Navisworks: *.nwc
- Inventor: *.iam , *.ipt , *.stp , *.adsk
- Inventor files to be shrink-wrapped and checked for all critical dimensions/connection points.

Consultants not using the software above should advise Wiley so an appropriate format can be agreed on and tested.

WILEY

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