

MEP Submission Template

for ARCHICAD 23

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--- Links last accessed: February 3, 2020 ---

If you have any comments, suggestions or clarifications, please contact:

GRAPHISOFT Singapore

152 Beach Road
#10-05 Gateway East
Singapore 189721

Building and Construction Authority

52 Jurong Gateway Road, #11-01
Singapore 608550

Centre for Construction IT

200 Braddell Road
Level 1, Block A, ZEB Building @ BCA Academy
Singapore 579700

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INTRODUCTION

The objective of this document is to assist mechanical engineers in developing BIM models collaboratively based on both the *Reference Model* and *One-Model Concepts*.

This is a generic reference guide and shall not be considered as an extensive document including all project cases. The template and actual workflows may be changed based on certain scenarios and the users are recommended to audit and revise their workflows from project to project.

This document is focusing on the use of GRAPHISOFT ARCHICAD 23 with regard to the requirements of BIM collaboration and it does not include the explanation of ARCHICAD terms in general.

Though the solutions demonstrated in this guide are aligned with the specifications of the Singapore BIM e-Submission Guidelines and Code of Practice, the users are required to check the actual requirements and GRAPHISOFT shall not be held responsible for non-compliance.

Architectural project delivery and submission is not covered in this document, for details refer to the relevant ARCHICAD templates and guides available at the CORENET website.

The current version of the template and its user guide is under constant development and updates may be available at a later time.

Find the **BIM e-Submission Guidelines** at the CORENET website here:

[https://www.corenet.gov.sg/general/building-information-modeling-\(bim\)-e-submission.aspx](https://www.corenet.gov.sg/general/building-information-modeling-(bim)-e-submission.aspx)

ONE-MODEL CONCEPT vs. REFERENCE MODEL CONCEPT

Compared to the *Reference Model Concept* where each discipline is able to edit and modify its own model only while using the others' models as protected references alongside their own, the One-Model Concept allows different disciplines to work on one central model. The members of these disciplines have different access rights to edit elements and properties depending on their role in the project.

The One-Model Concept can be followed in case all three disciplines (architects, structural engineers and MEP engineers) **are using ARCHICAD as the BIM authoring tool.**

Working with the One-Model Concept does not mean that there are no links in the project or that there is only one single project file for the modeling and documentation.

Creating modules/groups improves the workflow for example by the easier management of repetitive parts. It also helps by separating the work areas of disciplines if needed, for example in case of combined models of architects and MEP engineers where the two disciplines usually should not change the other domain.

In case of collaboration between architects and structural engineers however, it is necessary that **the structural team has access to certain elements that were originally defined by the architects** (beams, columns, etc.) for refinement. These **refinements are done on the architectural elements directly by the structural engineers** with the One-Model Concept.

The One-Model Concept may also have **file separation for documentation purposes** or performance optimization.

Due to the nature of MEP modeling, the one-model concept and the reference modeling requires the same from the MEP team since the architectural elements are not used directly, but referenced in both cases.

Note: No IFC file exchange is necessary when using the One-Model Concept compared to the Reference Model Concept.

MEP WORKFLOW

In regular reference-based workflows the MEP team provides design consultation during the Conceptual Design stage and is not expected to create BIM content until the Preliminary Design stage.

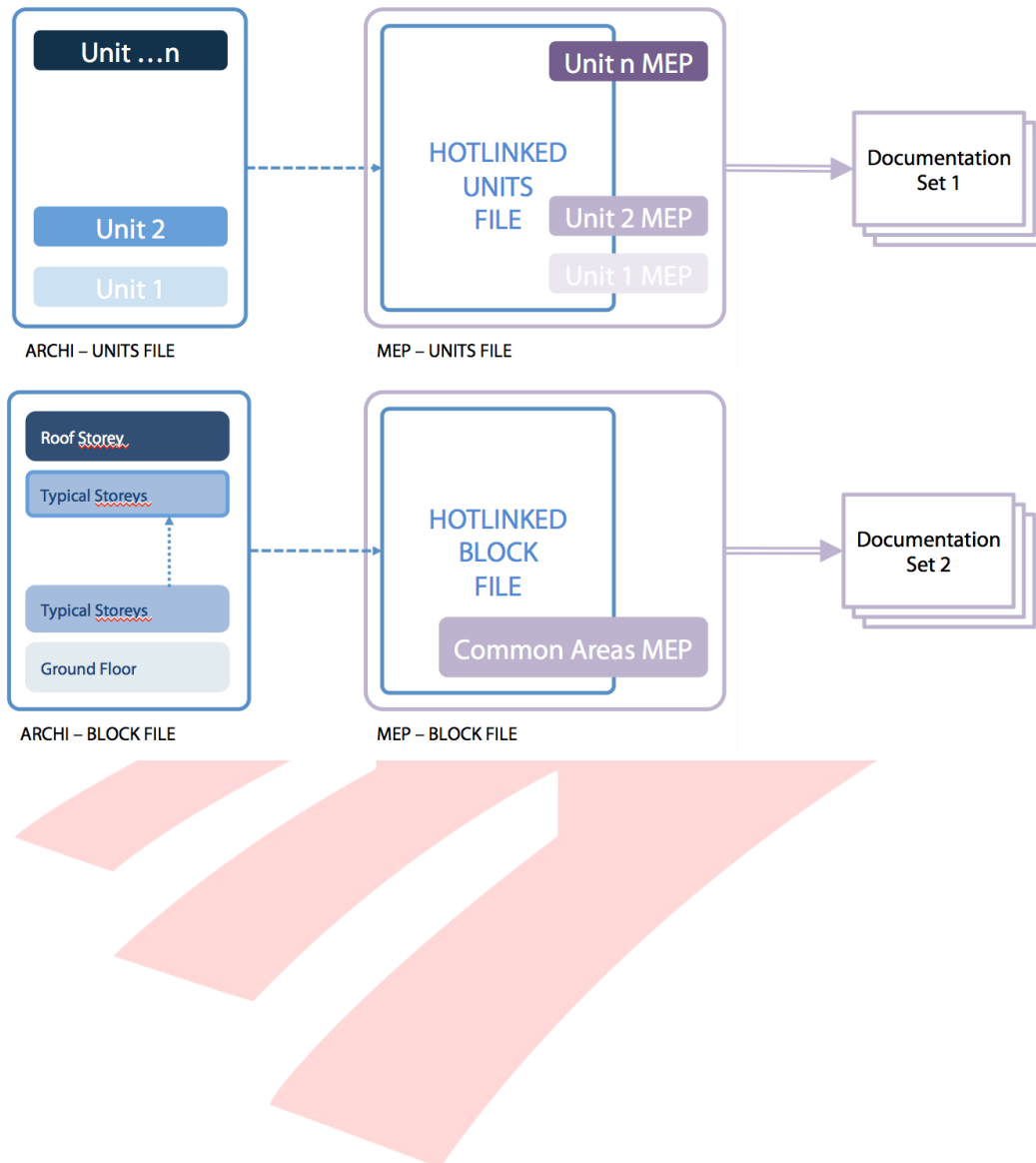
In the One-Model Concept however the MEP modeling can be started in the earlier phases already, shortening the overall project delivery time.

- 1 **The architectural team prepares the units (ARCHI - UNITS FILE) and the blocks (ARCHI - BLOCK FILE).**
- 2 **The MEP team prepares the Project Base File** according to the architectural project, based on the MEP template.
- 3 **The architecturally complete unit file is hotlinked into an MEP base project.** The unit file is linked as a whole teamwork project, there is no need to publish MOD or PLN files. During the import of the architectural model (including its documentation and annotation elements) unnecessary content will be created that the MEP team will have to filter by Layers for example.
- 4 **The architecturally complete block is hotlinked into the MEP base file.** The block is linked as a whole teamwork project, there is no need to publish MOD or PLN files. During the import of the architectural model (including its documentation and annotation elements) unnecessary content will be created that the MEP team will have to filter by Layers for example.

Note: Certain attributes of the architectural file will be inherited, such as *Layers*, while other attributes, like the *Building Materials* (and related *Priority-Based Connections*) will not. To avoid discrepancies of such, it is recommended to set up/use a *Project Base File* or a template with common attributes if such hotlinking occurs in the project later. The preparation of these base files is the scope of the BIM Manager. Any interim changes to the attributes should be thoroughly carried out in all related files/projects.

- 5 **The MEP team will complete the units with MEP elements for each unit type (MEP - UNITS FILE).**
The architectural model is not edited. If some editing is still needed it will be done in the ARCHI - UNITS FILE.

- 6 **The MEP team then completes the blocks by adding the MEP elements of common areas.** Again, **the architectural model is not edited.** If some editing is still needed it will be done in the ARCHI - BLOCK FILE.
- 7 **The MEP Documentation Set is partially produced from both the MEP - UNITS FILE and the MEP - BLOCK FILE project files/teamwork projects.**

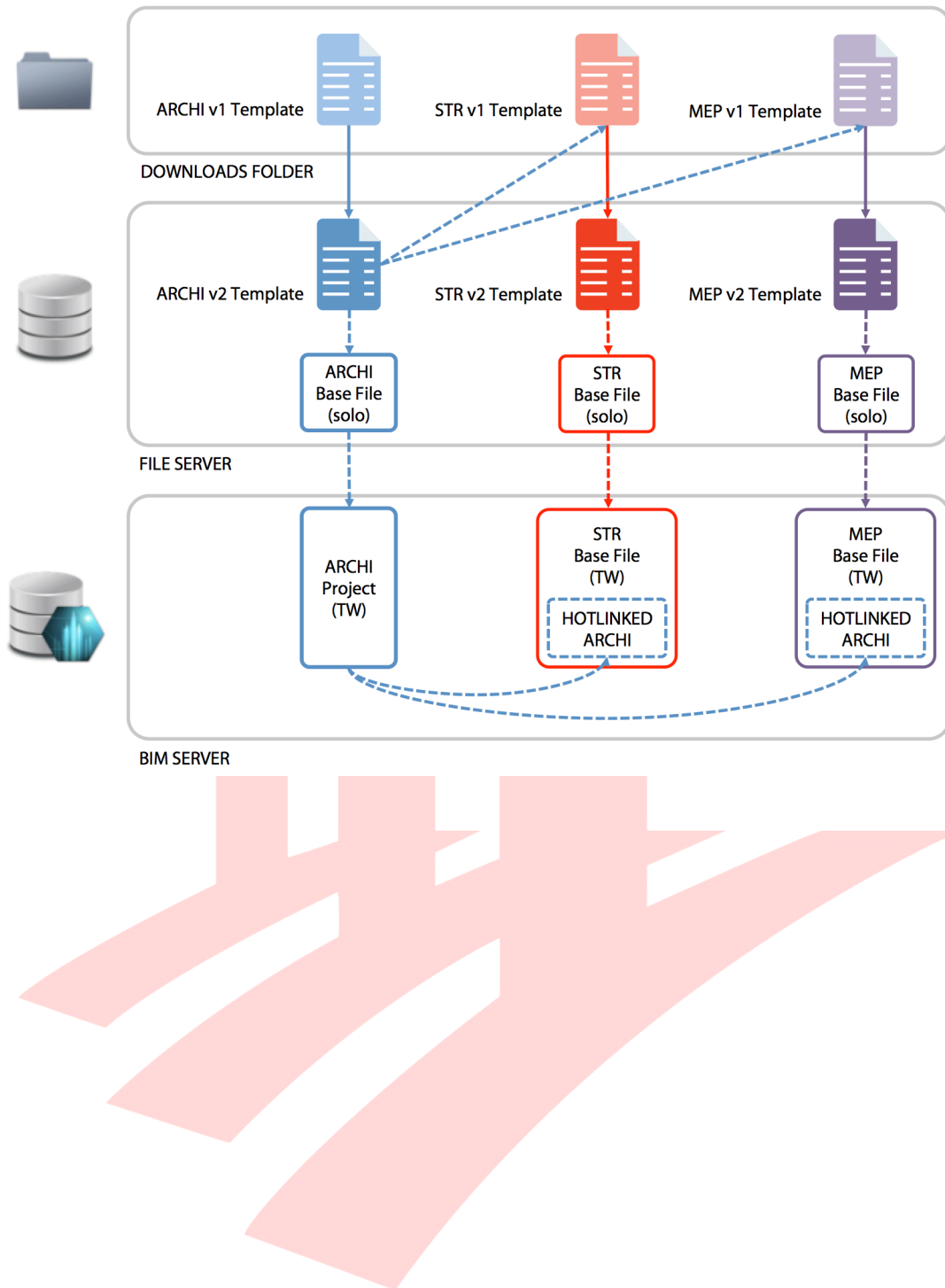


TEMPLATES AND PROJECT BASE FILES

Project Base Files can be created based on the existing company templates or the templates discussed in this document before the project starts.

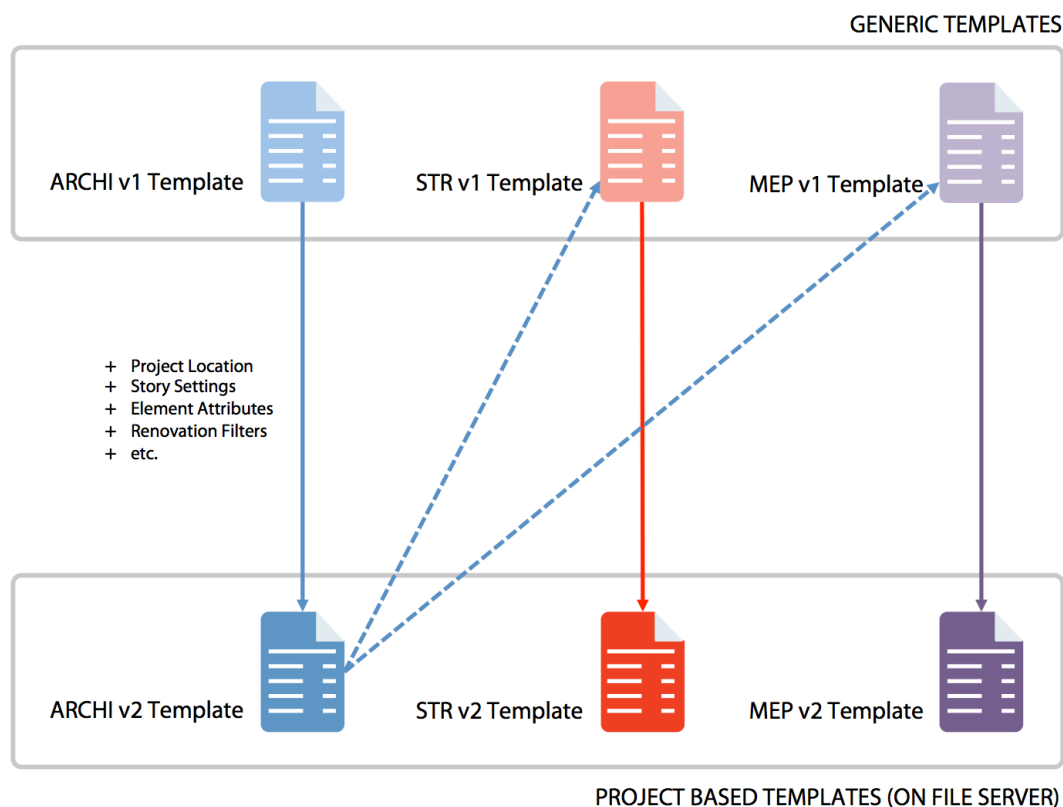
The Project Base File allows the different teams to link the model portions smoothly. **Usually the structural and MEP teams use the empty architectural file as a base to inherit its settings and update their templates for the actual projects.**

- 1 The BIM Manager should **collect the templates for all the disciplines**. These are generic templates.
- 2 As the **architectural team** leads the project development, they **set the base design and update their template** for the actual project (ARCHI v2 Template).
- 3 **The structural and MEP teams will use this new template as a reference to set the same framework for their projects** (STR v2 Template and MEP v2 Template). These template files are stored in a common folder on the File Server.
- 4 **The new templates have to be used for solo ARCHICAD files, which can be shared** to the BIMcloud Server later. These solo files can still reside on the File Server.
- 5 **Share the architectural solo Base File** and start working on the Teamwork Project.
- 6 Meanwhile **the structural and MEP teams also create a solo Base File based on their updated templates**.
- 7 **The structural and MEP teams share their Base File to the BIMcloud Server** to make it a Teamwork Project.
- 8 **The structural and MEP teams hotlink the architectural projects** into their Teamwork Projects.
- 9 **All disciplines work on their own projects** and create the relevant Documentation Sets onwards.



The following are necessary to be defined in the Project Base Files/Templates:

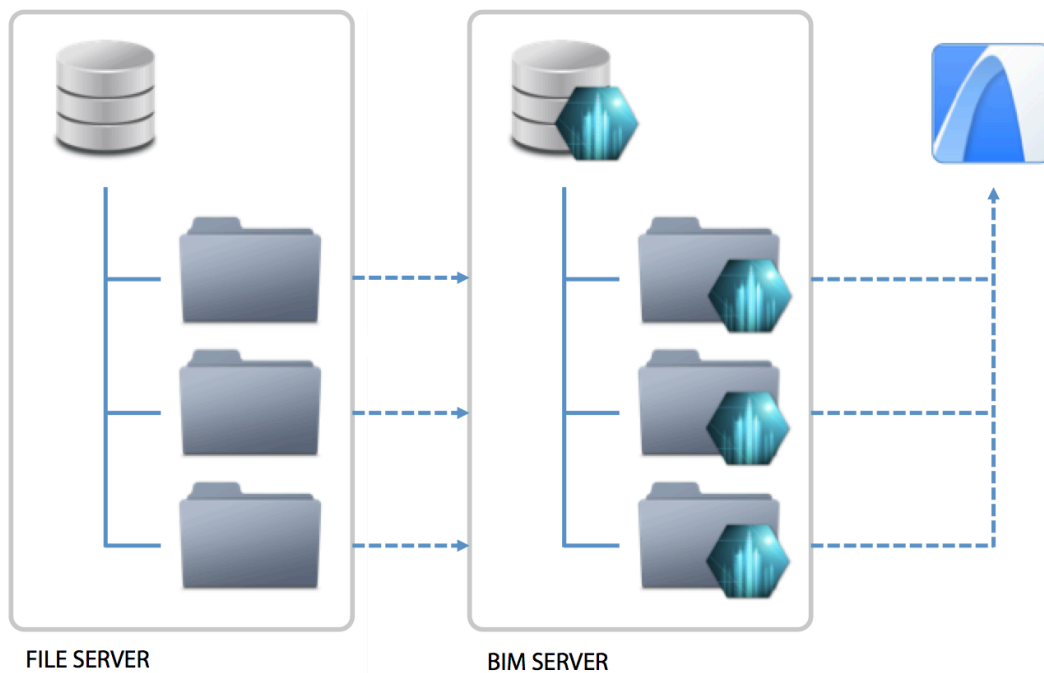
- **Project Location** - based on surveyors' input (external drawings, list of coordinates, point cloud surveys, etc.).
- **Story Settings** - whenever content is hotlinked in ARCHICAD, the Story settings have to match to avoid vertically overlapping of elements (host has smaller story heights than the link), detached elements (elements not linked to stories in a host with bigger story heights) or stretched elements (elements linked to stories in a host with bigger story heights). Since this cannot be defined right before the project it can be set after the architecture is more or less finalized.
This setup is a **manual process. Stories cannot be imported.** Once created, **make sure that affected View Map Cloned Folders are updated** with the IDs and Names.
- **Element Attributes** - to ensure that the content shows the same in all linked instances. Subsequent additions have to be thoroughly added in all project files.
- **Renovation Filters** - by default the templates come with **New** Renovation Status for the elements and **05 Planned Status** Renovation Filter for the View settings. This should be checked and kept for new projects.



LIBRARY MANAGEMENT

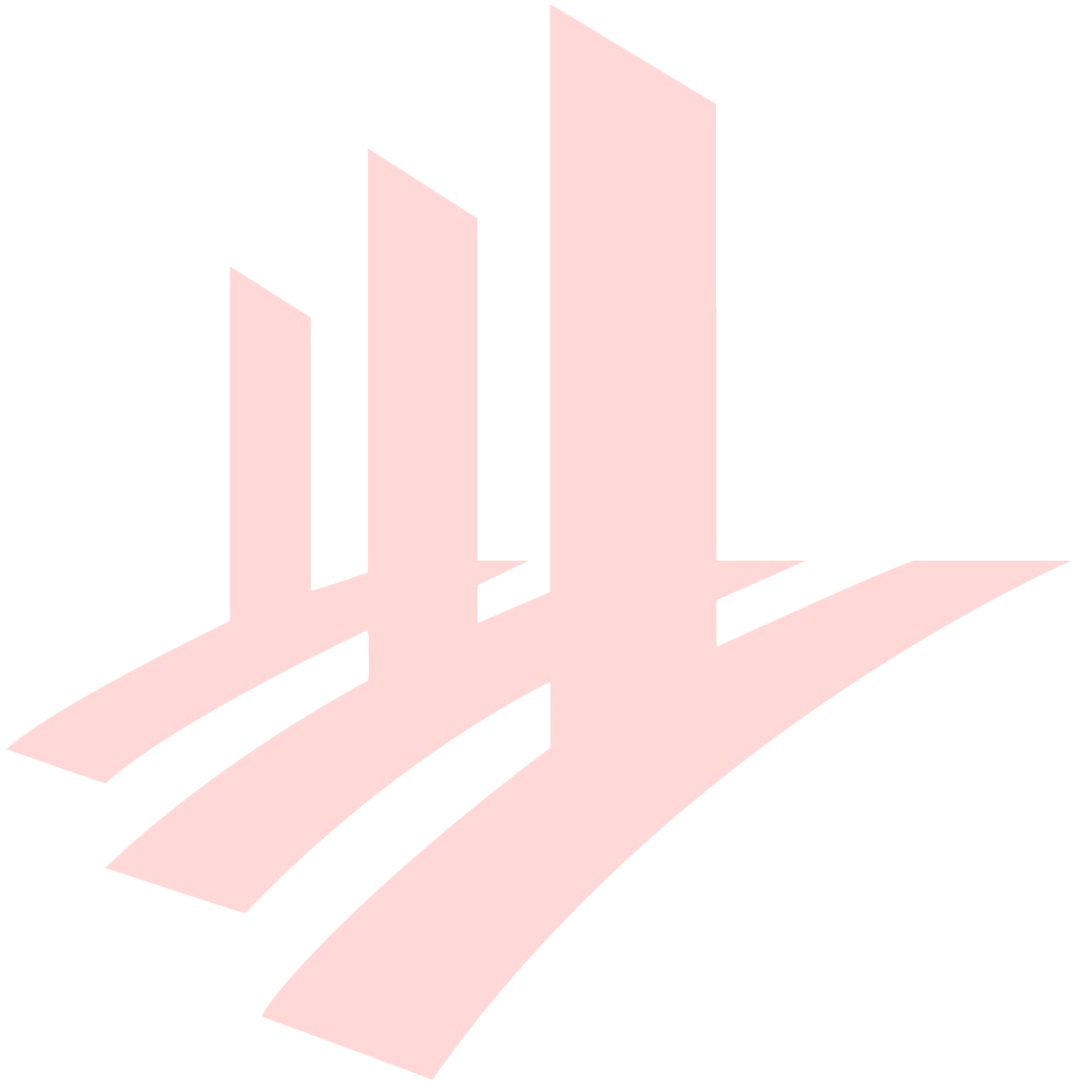
The **original libraries are placed into one of the file servers**. These will be uploaded to BIMcloud (BIM Server), then accessed and loaded by ARCHICAD.

Note: The file server and the BIMcloud Server are not necessarily separated physically.



- 1 When the libraries are uploaded to the BIMcloud the originals will remain offline and untouched. Go to **Files/Libraries and Objects/Library Manager...** in ARCHICAD.
- 2 **Reserve** the dialog.
- 3 Click **Add...** to browse the libraries uploaded to BIMcloud.
- 4 Click **Manage Server Libraries....**
- 5 Click **Upload...** to browse the folders on the file servers.
- 6 Click **Close** when the libraries are uploaded. Now it is possible to choose the libraries as BIMcloud libraries.
- 7 **Select the BIMcloud library** you want to add to the project and click **Add**.

- 8 Click **Release**.
- 9 Click **OK** to close the dialog. ARCHICAD will load the uploaded libraries into the Teamwork projects. If there are other users joined to the project already then they have to be notified about the upload, so they can receive the changes and start using the content of the libraries. Notifications can be sent through Teamwork *Task messages* (**Receive changes**/Send and Receive).



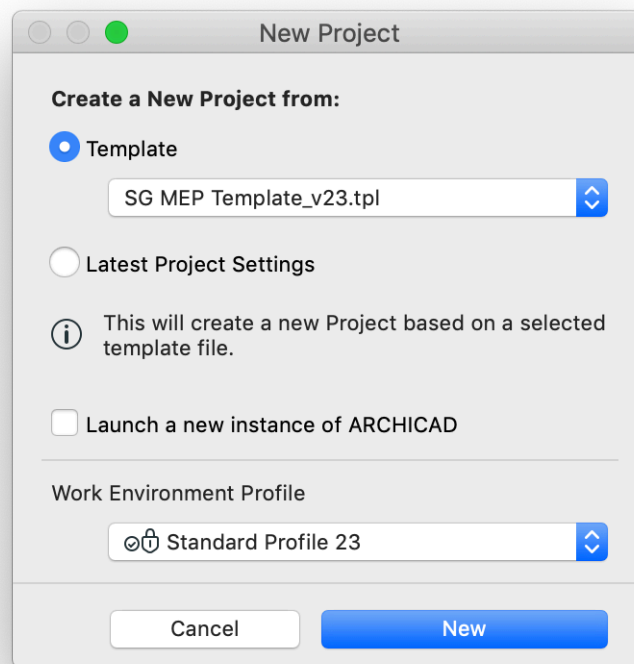
GETTING STARTED

Once you have downloaded and unpacked the ZIP file from the CORENET website, do the following preparations before using the template for the first time.

- 1 Place the **SG MEP Template_v23.tpl** file to the default settings folder of ARCHICAD (within the folder ARCHICAD was installed to), usually located at **C:/Program Files/GRAPHISOFT/ARCHICAD 23/Defaults/ARCHICAD**.
- 2 Place the **SG MEP Library 23.lcf** library container file into a folder where it will not be modified, moved or deleted, for example any folders which you already use for storing libraries or the **C:/Program Files/GRAPHISOFT/ARCHICAD 23** installation folder.
- 3 Launch **GRAPHISOFT ARCHICAD 23** using the desktop shortcuts.



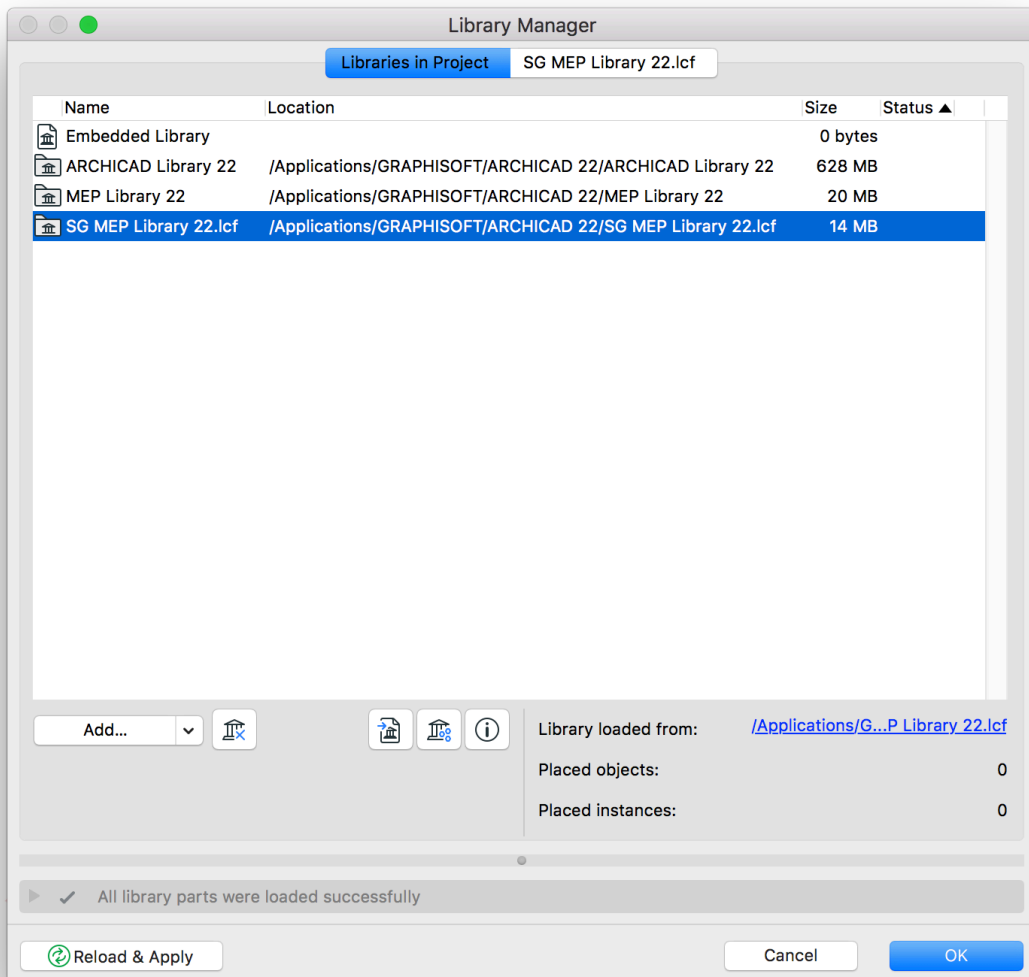
- 4 The Start ARCHICAD 23 dialog appears, choose **New...** at the top of the dialog.
- 5 Click into the dropdown list and use the **Browse Template...** option to locate the **SG MEP Template_v23.tpl** template file.
- 6 Choose the **MEP Profile 23** Work Environment and click **New**.



Note #1: To ensure the authenticity of the downloaded template file, make sure you obtain it from the CORENET BIM Support Team at:
[https://corenet.gov.sg/general/building-information-modeling-\(bim\)-e-submission.aspx](https://corenet.gov.sg/general/building-information-modeling-(bim)-e-submission.aspx)

Note #2: The template is constantly improved based on user feedback, therefore minor differences may occur between the actual version and the screenshots presented in this guide. Only the latest versions of the template are available on CORENET. The naming of the template file indicates the updates and revisions, such as **...Template_vXX.tpl** for the initial version, then **...Template_vXX.1.tpl**, **...Template_vXX.2.tpl**, etc., if available subsequently.

- 7 Once ARCHICAD 23 is launched, it will not prompt for missing elements due to its new Action Center feature, therefore go to **File/Libraries and Objects/Library Manager...** to check if the SG STR Library 23 is linked to the project or not. If it is missing then you need to add it from its current location.



- 8 Click **Add....** Locate the LCF file and click **Open**.
- 9 Click **OK** to close the Library Manager and load the libraries.

WORK ENVIRONMENT PROFILES

To make the work more effective, the MEP team might create custom *Work Environment Profiles* to provide a tailored interface for the different MEP disciplines (Water, Gas, ACMV, Electrical, etc.) to show the relevant tools only.

GRAPHISOFT provides preset Work Environments for its users with software subscription, which can be fine-tuned later if needed.

- 1 Once downloaded from the GRAPHISOFT SSA webpage, **extract the archive file**.
- 2 The profiles can be imported to ARCHICAD via the **Options/Work Environment/Work Environment...** command. Click **Import...** to browse and import for the extracted folders.

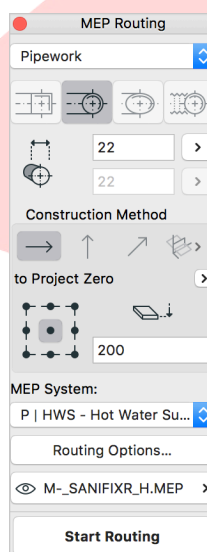
Note: Work Environments are individual preferences of each client computer/user, therefore cannot be managed centrally. All users have to import/create them for themselves.

If not using the Work Environment profiles by GRAPHISOFT, then make sure the following are added to the out-of-the-box MEP Profile:

- **MEP Toolbar (Window/Toolbars/MEP Toolbar)**



- **MEP Routing palette (Window/Palettes/MEP Routing)**



HOTLINKING THE ARCHITECTURAL PROJECTS

Once the architectural elements were adjusted and prepared for documentation, the architectural project is ready for hotlinking to be used as the reference for MEP modeling, either using native ARCHICAD files or others converted to IFC file format.

In a Teamwork environment the following steps are required:

- 1 **Open the MEP Base File** (TPL or PLN format) in ARCHICAD as an offline file and **verify that it has the same settings as the architectural project.**
- 2 **Do not load any additional Libraries** other than the default ARCHICAD Library and the MEP Object Library.
- 3 Go to **Teamwork/Project/Share...** and locate the BIMcloud model servers and project folders to **share the file** to.
- 4 Name it according to the company standards and share it. **The file will be uploaded and the linked Libraries will also be shared at the first occasion when they are shared.** In subsequent cases ARCHICAD will detect **if the Libraries are already present on the server and will use those instead of re-uploading** the content.
- 5 Go to **File/Libraries and Objects/Library Manager...** in ARCHICAD and **add the required BIMcloud Libraries to the project so that the available content is matched with the to-be-linked project** as a minimum requirement.
(For example ARCHICAD Library, BIM Submission Library and Custom Libraries are linked to the architectural project, whereas for the newly uploaded MEP base project only the ARCHICAD Library and the MEP Object Library is available. Select the Submission and Custom Libraries from the BIMcloud and add them to the project to avoid missing elements.)

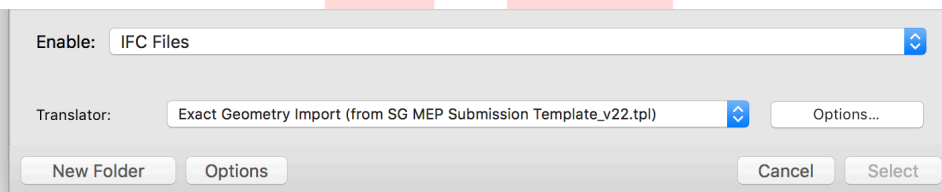
Note: Usually the two discipline projects would reside on the same model server. In case they are hosted on separate servers, **make sure that the offline Libraries are located on the same location of the file server** to ensure easier update of the uploaded library content.

- 6 **Go to a plan view** in the MEP project and insert the module via the **File/External Content/Place Hotlink...** command.
- 7 **Make sure that there is always a Master ID and Master Layer defined** for each module to make filtering easier later.

Note: Master ID will add a prefix to the ID that is set in the Element Settings dialog (*Compact ID*). The Master ID and the Compact ID together will result in the *Full Element ID*. **All elements in the module will get the Master ID prefix when linked**, the source will preserve the Compact IDs of course.

- 8 **Choose Hotlink from Teamwork file...** in case of the architectural block. Click **Place Module** when finished with the setup. The inserted files can be native ARCHICAD files, such as MOD or PLN, or content from external applications in IFC format.

Note: When selecting IFC files for linking (original architectural model created in Revit Architecture, for example), the IFC **Translators need to be defined based on an existing template file**, which stores the actual translators.



- 9 **Insert all stories**, make sure to match the correct ones.
- 10 Repeat the same process for the units MEP project.

CORE INFORMATION (ELEMENT PROPERTIES)

The MEP COP has several required Core Information properties that have to be defined for submission. Compared to the structural referencing **the MEP elements having the properties are part of the native model content** and can be edited directly.

- 1 Go to **Options/Element Attributes/Property Manager...** to see the available properties (in both architectural and structural projects).

The following properties are available in the MEP template on their own, differentiated by their prefixes:

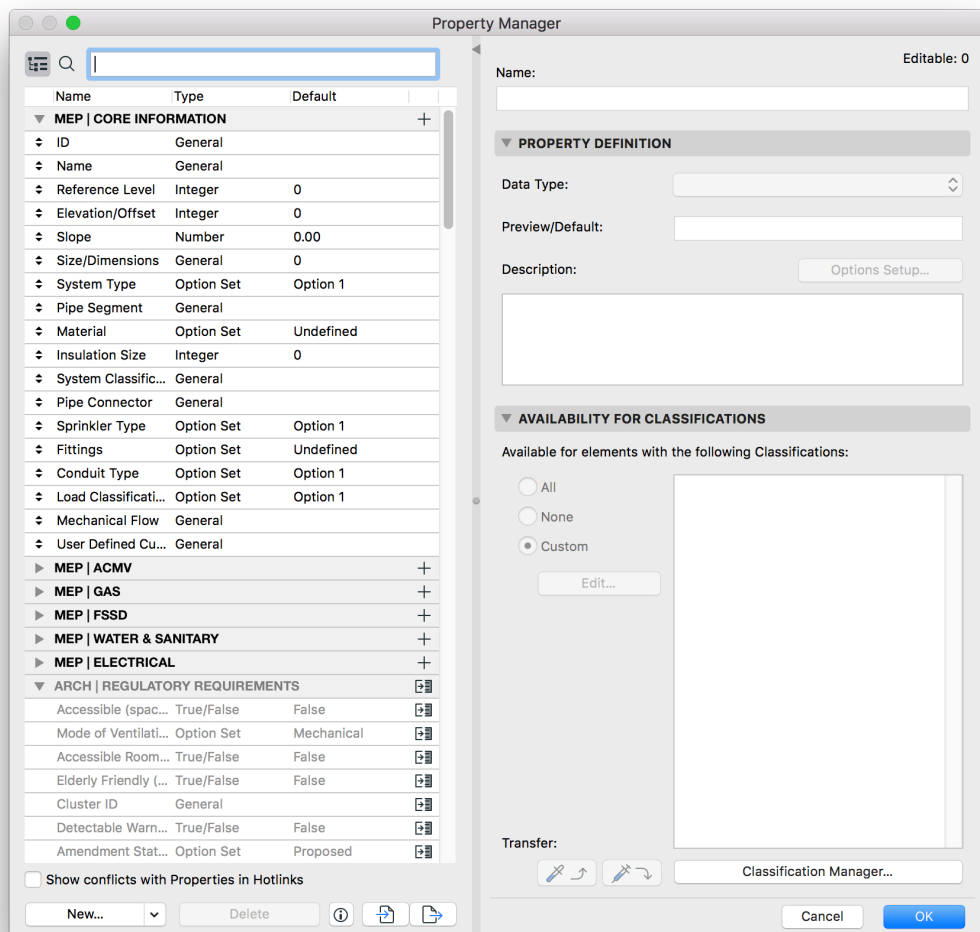
- **MEP |** - required to be filled out correctly for submission.

When linking the architectural model into the structural project the architectural Properties will be shown if they are not present in the structural file yet. These can be:

- **without prefix** - the default ARCHICAD factory template (architecture) Properties. Since these are very generic Properties, the architectural team might have already replaced/filtered these to have relevant Properties only for their needs, therefore **these may be (or may have been) deleted in the architectural project**.
To make the setup easier, **these properties are arranged to the end of the property list** in the architectural project.
- **ARCH |** - the Properties used for the architectural native BIM submission. These Properties will be irrelevant for the MEP workflow.

Note: Properties are not considered as Element Attributes and are identified by the Groups they are in and their Names, not by Index Number.

These imported properties will be greyed out and like any other settings of hotlinked modules, **they are uneditable in the host file** (the MEP file).



Find more info on **Element Properties in Hotlinks**
at the GRAPHISOFT Help Center here:

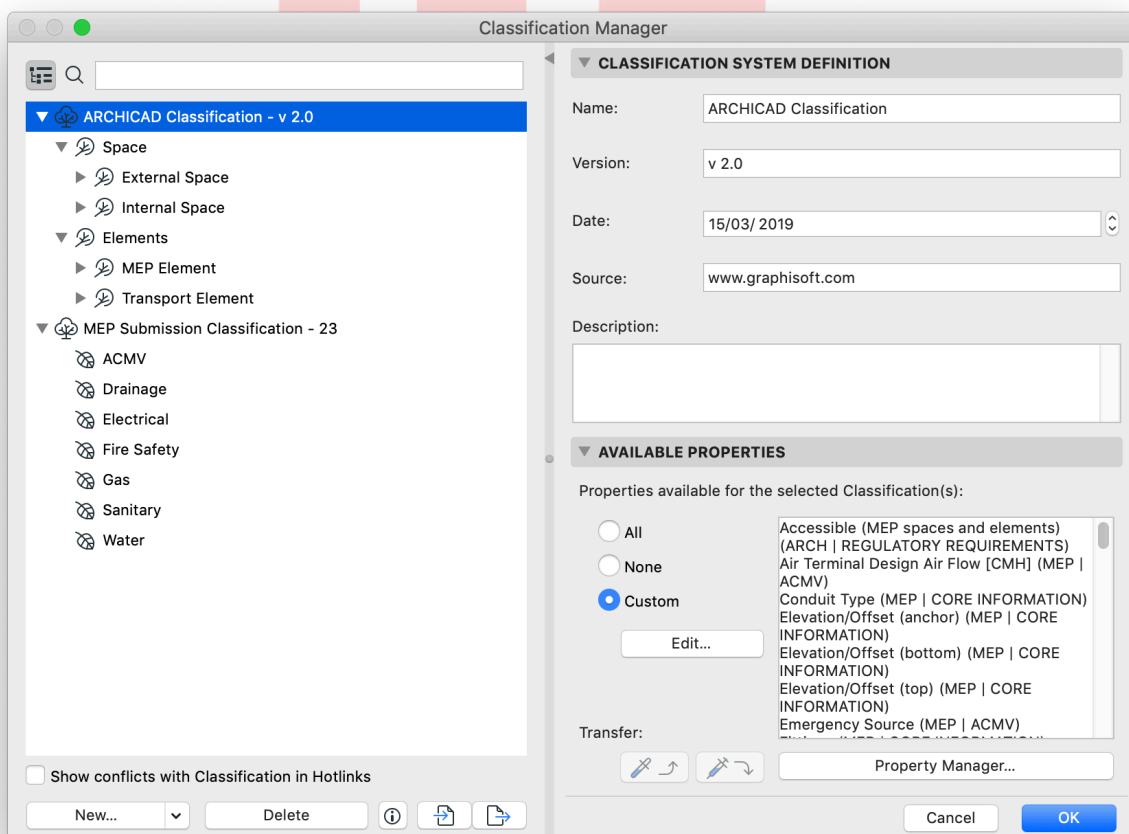
<https://helpcenter.graphisoft.com/user-guide/65299/>

CLASSIFICATION SYSTEMS

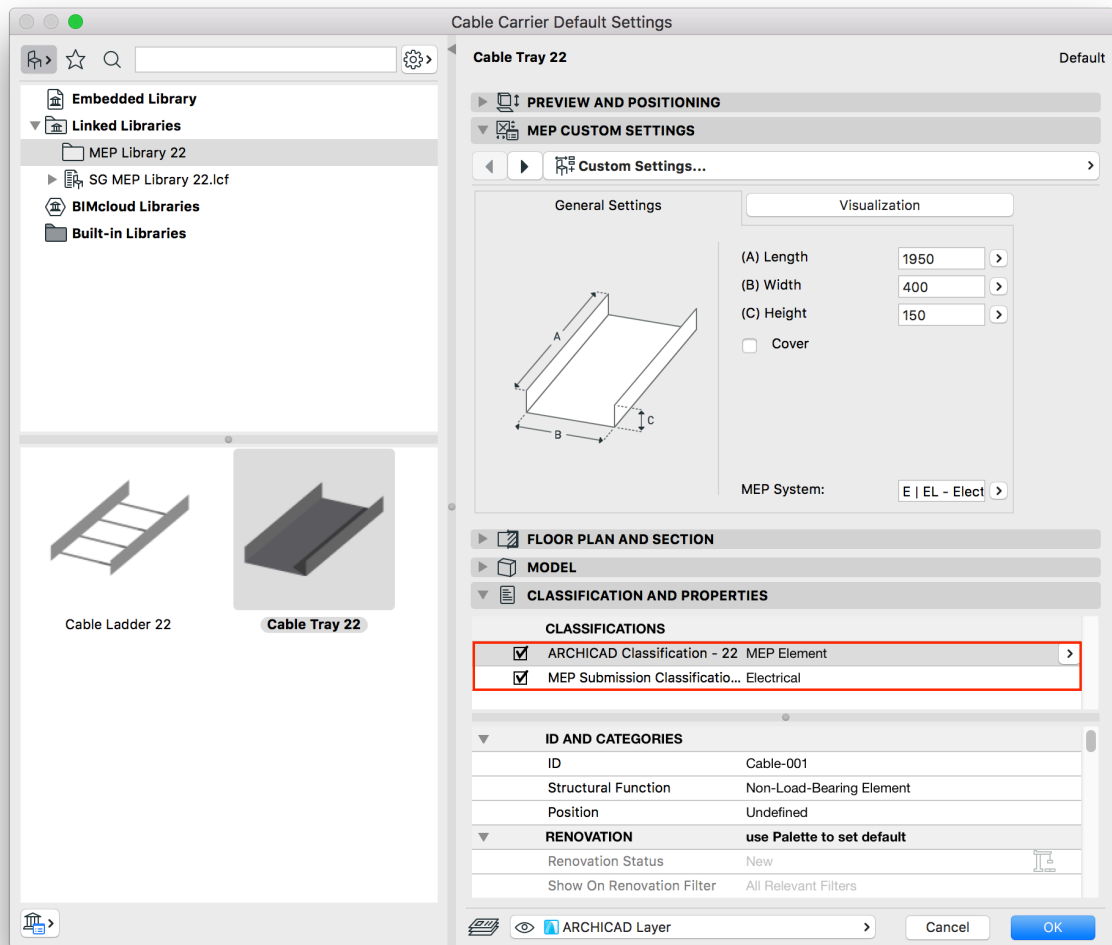
Though there is no specific classification system in effect for MEP elements, it is recommended to use the MEP Submission Classification system that is provided with the template. **Using classifications makes searching, filtering and element definition easier, than Tool-based methods**, for example. At the same time, **classifications automatize the assignment of Properties** (Core Information) to the elements.

Open **Options/Classification Manager...** to view the Classification Systems:

- **ARCHICAD Classification – v 2.0** - comes with the default ARCHICAD template. It is recommended to keep it as the default IFC Translators are based on these classifications.
- **MEP Submission Classification - 23** - a simplified system (compared to the default) for categorizing MEP elements.



Classifications can be set for individual elements under the **Classifications and Properties** panel in the element settings dialogs or stored with Favorites.



MEP PLAN REPRESENTATION AND MODELING IN THE MEP PROJECT

Once the architectural models are inserted, the predefined Views in the *Navigator* should show the proper representation of the elements on the generic stories.

The modeling conventions do not have specific requirements, the MEP team will use the built-in MEP Modeler features as-is and replace certain elements with their Singapore-specific version. For generic modeling using the MEP Modeler refer to the MEP Modeler User Guide.

Find the **MEP Modeler User Guide**
at the GRAPHISOFT Help Center here:

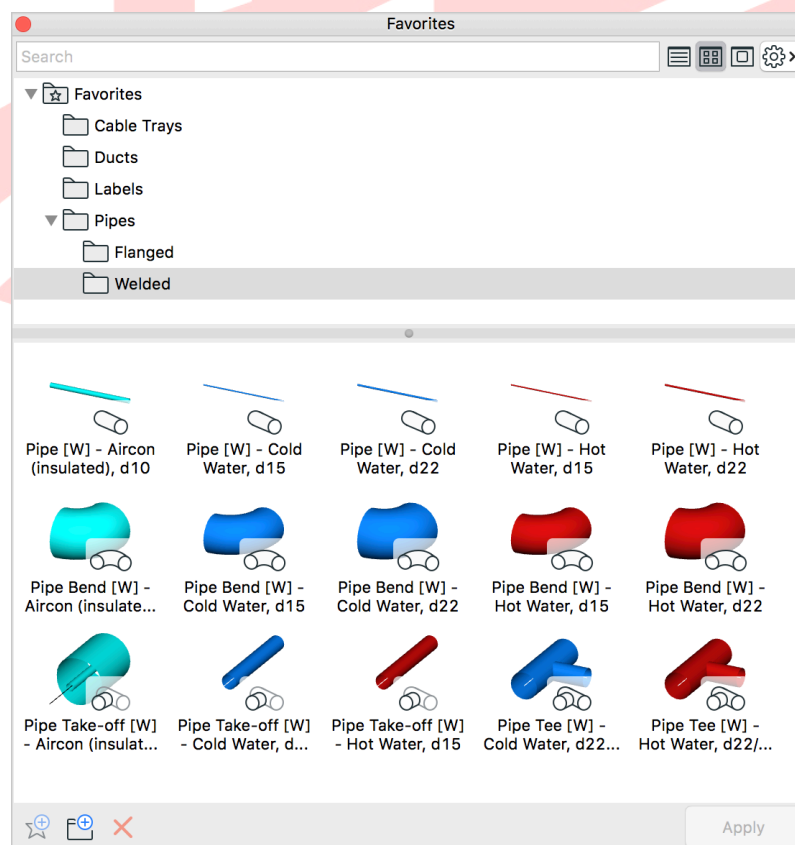
<https://helpcenter.graphisoft.com/user-guide-chapter/84539/>

Favorites

The **MEP template includes MEP-relevant Favorites** only, without any default architectural ARCHICAD Favorites, since there is no need for the MEP modelers to create any such elements in their model.

The Favorites store MEP System settings, Connection Types and Sizes and overall Dimensions of the default MEP Library parts and are organized into the following hierarchy:

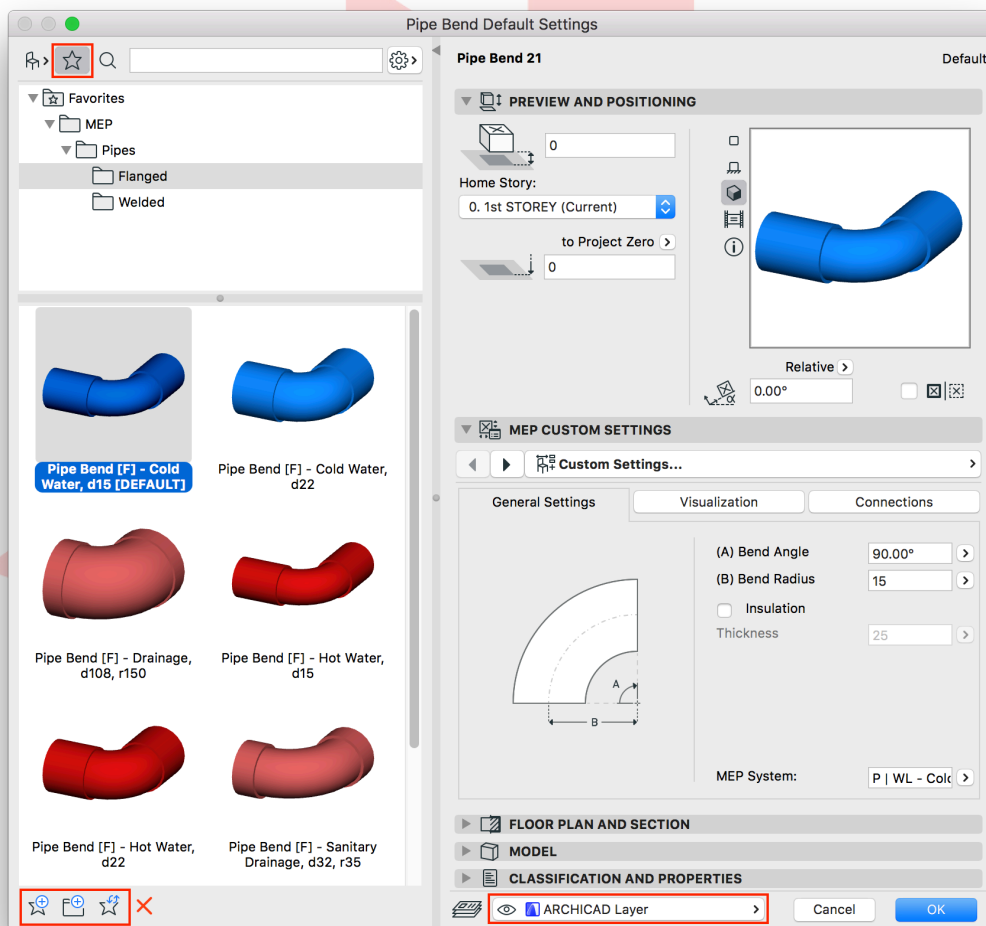
- **Cable Trays** - has the default Object setting and two examples for cable trays and trunking.
- **Ducts** - includes options for circular and rectangular duct Segments, Bends, Take-offs and Transitions.
- **Labels** - can display IFC Property-based tags for circular and round Duct Segments using the Label tool.
- **Pipes** - includes flanged and welded versions of sanitary, water supply and aircon pipes with Bends, Take-offs and Wye fittings.
 - Flanged
 - Welded



Updating the Favorites

The Favorites in the template shall be considered as mere examples - to cover all needs and purposes **the users are recommended to update the existing Favorites and/or create their own items to increase their modeling efficiency** and reduce the risk of errors when modeling repetitive parts.

- 1 Open the **Element Settings** dialog.
- 2 Browse the Favorites by clicking on the **Star** on the top left.
- 3 **Click on a Favorite** to activate it.



Note: All Elements have the ARCHICAD Layer set by default which shall be replaced with actual Layers the user created.

- 4 **Change the settings of the Favorite** under the MEP Custom Settings panel.
- 5 Once done, click the **Redefine button** (star with arrows) at the bottom left to update an existing Favorite.
- 6 **When creating brand new Favorites**, use the **New Favorite** and **New Folder** buttons to create and sort Favorites.

Find more details on **Redefining Favorites**
at the GRAPHISOFT Help Center here:

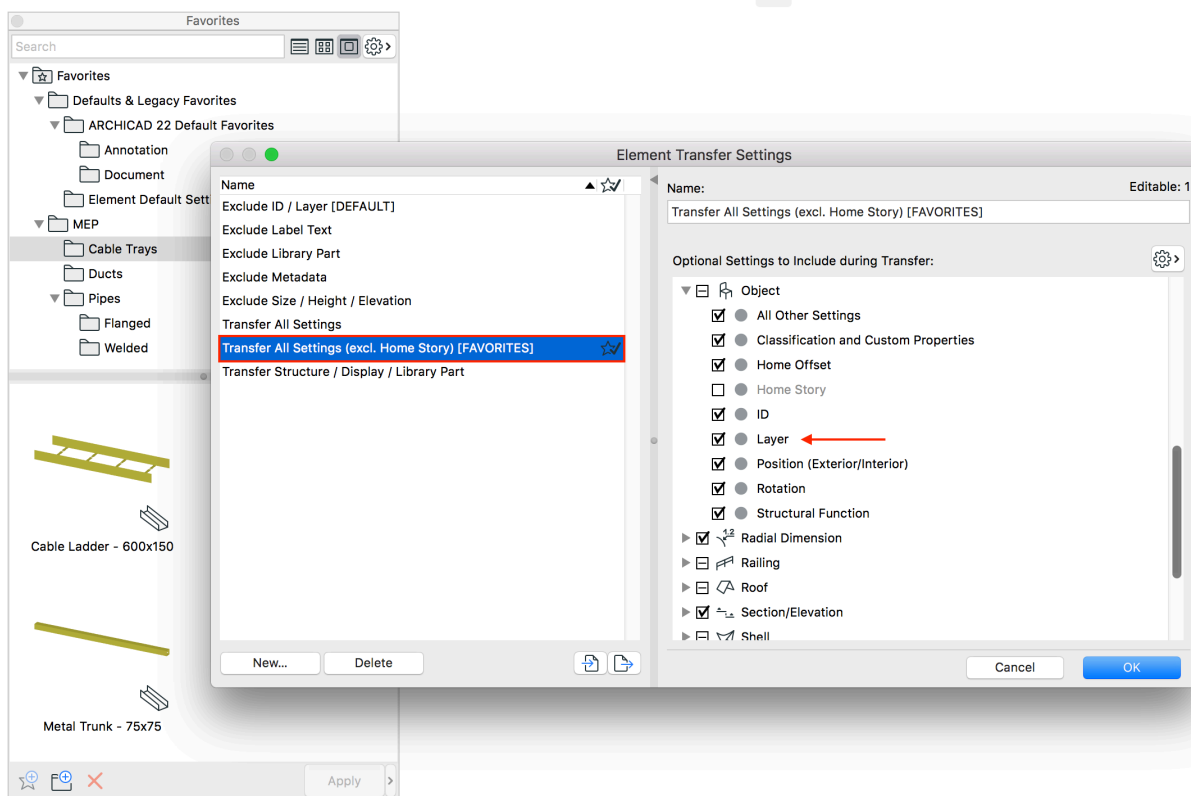
<https://helpcenter.graphisoft.com/user-guide/64888/>



Favorites Palette and Element Transfer Settings

The Favorites palette helps the users in organizing and controlling the Favorites, for example by defining which parameters/settings would be stored with the Favorites. This is crucial to ensure that for example the previously revised Layer settings will really be stored with the updated Favorites.

- 1 Go to **Window/Palettes/Favorites** to open the Favorites palette.
- 2 Click the **cogwheel** to open the settings and go to **Element Transfer Settings....**
- 3 The left side shows presets for element transfer, the right side shows the parameters that will be transferred when using the Pick Up and Inject functions. At the same time the preset that has the star with a tick next to it will define which parameters the Favorites will store. Make sure that the **option Transfer All Settings (excl. Home Story) [FAVORITES]** has the mentioned star. Note that this option has the Layer checked for Objects, which cover the MEP elements as well.

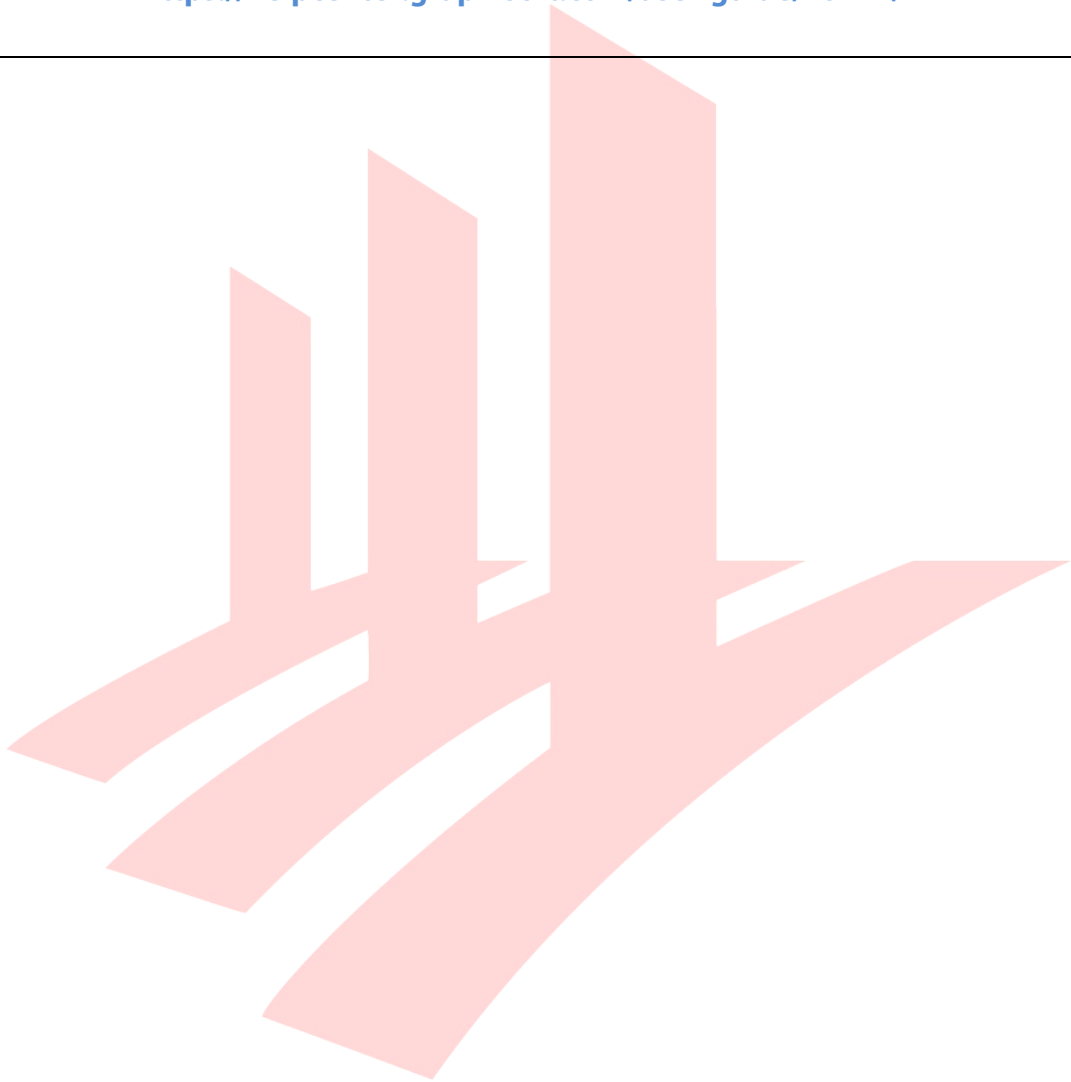


Find more details on the **Favorites Palette**
at the GRAPHISOFT Help Center here:

<https://helpcenter.graphisoft.com/user-guide/64891/>

Find more details on the **Element Transfer Settings**
at the GRAPHISOFT Help Center here:

<https://helpcenter.graphisoft.com/user-guide/76412/>








Connections with Hotlinked Fixtures


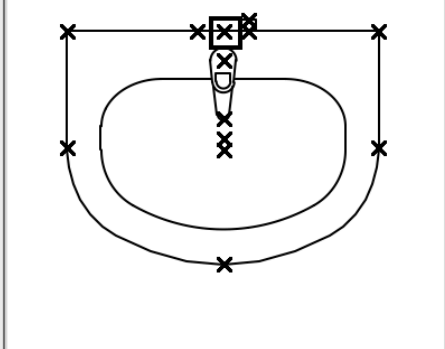
However, **when linking elements into the project, the connections cannot be created with the linked elements**, typically the sanitary fixtures, coming from the architectural model, but as a more important disadvantage, the connections also become inactive, practically not allowing the user to start routing from the Object. To overcome this, it is recommended to:

- 1 **Shorten the native Connections of the architectural elements** (in the architectural project).


Basin 22 Default


PREVIEW AND POSITIONING

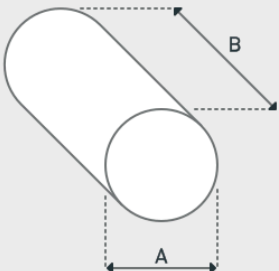
 960
 Home Story: 0. 1st STOREY (Current)
 to Project Zero >
 960
 600 >
 450 >
 140 >

 600 x 470

 Relative > 0.00°

BASIN SETTINGS

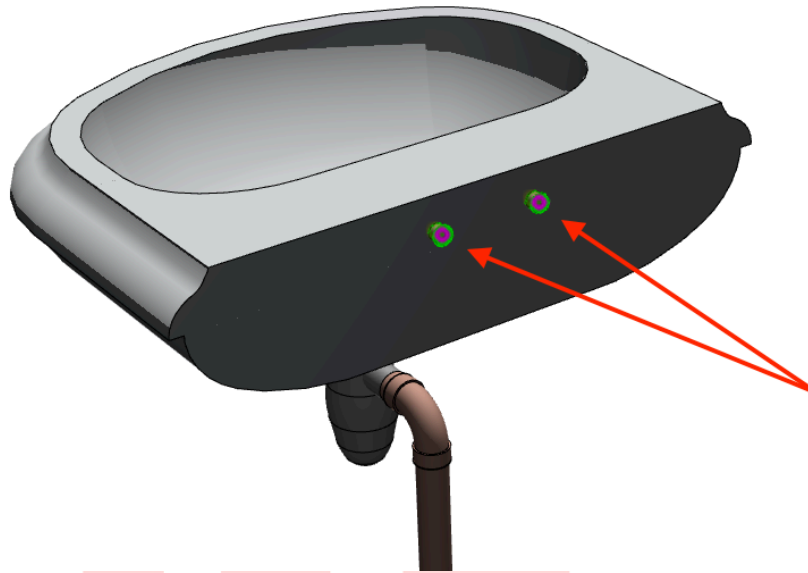
 **Connections...** >

 **Hot Water Connection** >



☒ **Hot Water Connection**
 Nominal Size
 (A) Diameter 15 >
 Nom. Wall Thickness 1 >
(B) Connection Length 0 >
 Connection Type Welded >
 MEP System: P | HWS - Hc >

- 2 **Place individual Duct/Pipe/Cable Tray segments that fit to the sizes of the future routing** (will actually define the sizes of the connecting elements) so the routing can be started/ended at these connections.



Note: Though placement of starting segments is not a must, in case the MEP Connections of the fixtures are defined wrongly by the architects, the MEP team can still place starting connections with the correct sizes without the need to edit the architectural project.

Modeling Workflow and Routing

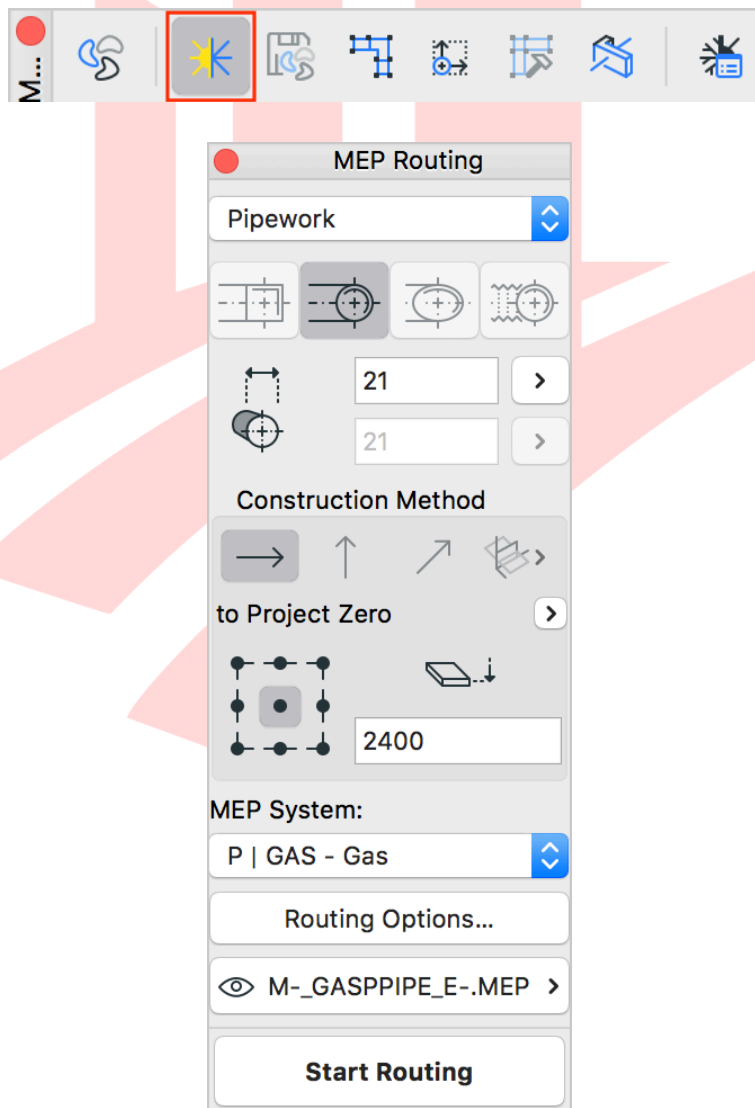
As a best practice the following order is advised when placing MEP elements:

- 1 Place Terminals and Equipment
- 2 Create main branches
- 3 Create Take Offs/Tees/Wyes
- 4 Connect Terminals to Take Offs/Tees/Wyes

Alternatively:

- 3 Start routing from Terminals
- 4 Auto-connect to branches, choose connection on clicking

Activate Routing from the MEP Toolbar or by launching the **Window/Palettes/MEP Routing** menu command.

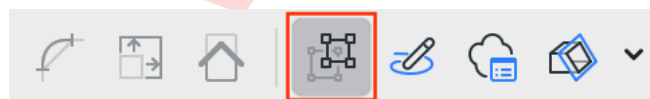


Though the Routing palette allows setting the parameters of different segment types when creating new elements, it will adapt and use some of the settings of existing elements when routing is initiated from a node of such existing elements as per the following table:

Setting	Adapts to existing elements	Uses setting from the Routing palette when connecting to existing elements
Type	✓	-
Size	✓	-
Bottom offset	✓	-
MEP System	✓	-
Connection Type	✓	-
Insulation	-	✓
Insulation Thickness	-	✓
Transition rule	independent from segment settings	
Connector	✓	-
Layer	✓	-

Newly created elements will use the parameters as per the Routing palette settings.

Note: Groups must be suspended in order to be able to connect to elements that were created by routing. Routing cannot start at nodes of grouped elements unless they are suspended.



MEP Object Library

GRAPHISOFT Singapore provides custom, localized content for its users with a software service agreement. The library contains various elements, which will be presented in the following chapters.

The library is named **SG MEP Library 23** and has a uniform **_GSSG** ending for the Objects within.

Find the **MEP Object Library** on the GRAPHISOFT Singapore website here:

<http://www.graphisoft.com.sg/ssa/>

Once loaded, the Library Manager shows two folders and their subfolders within the Library:

- **Electrical**
 - **Fans**
 - **General Electrical Objects**
 - **Lights**
 - **Outlets and Switches**
 - **Subtypes and Macro**
- **Mechanical**
 - **Dampers**
 - **Segments**
 - **Subtypes and Macro**
- **Plumbing**
 - **Equipment**
 - **General Plumbing Objects**
 - **Meters**
 - **Pumps**
 - **Tanks**
 - **Terminals**
 - **Traps**
 - **Valves**

The Subtypes and Macro folders contain non-placeable objects.

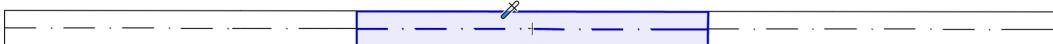
Segments with Texts/Labels

As a local requirement, duct and cable tray segments need to show the MEP System information on the plans. To achieve this, individual elements have to be replaced where the text needs to be shown.

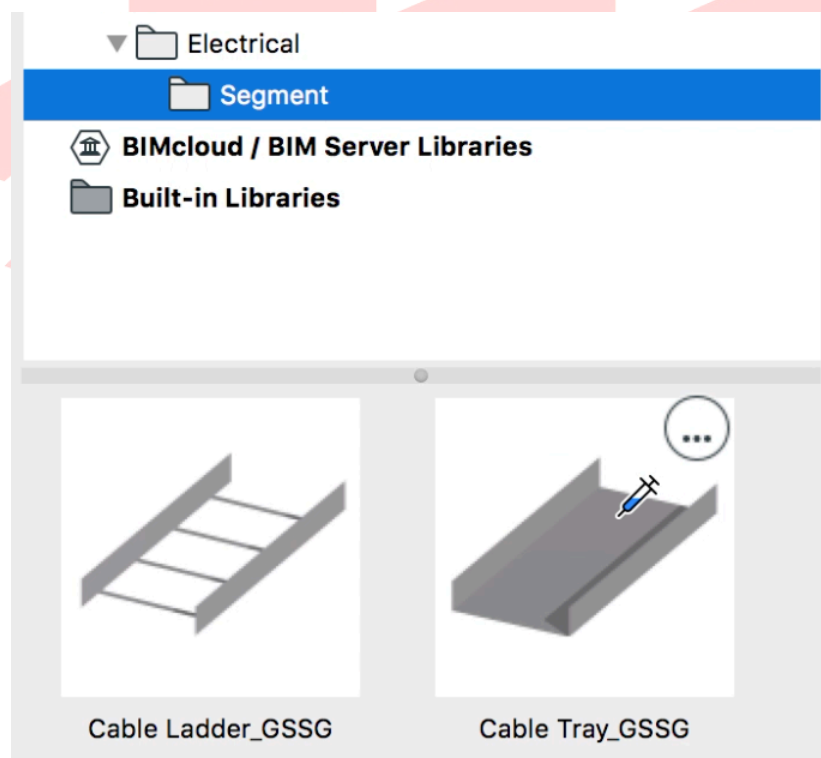
- 1 Locate the segment to replace.



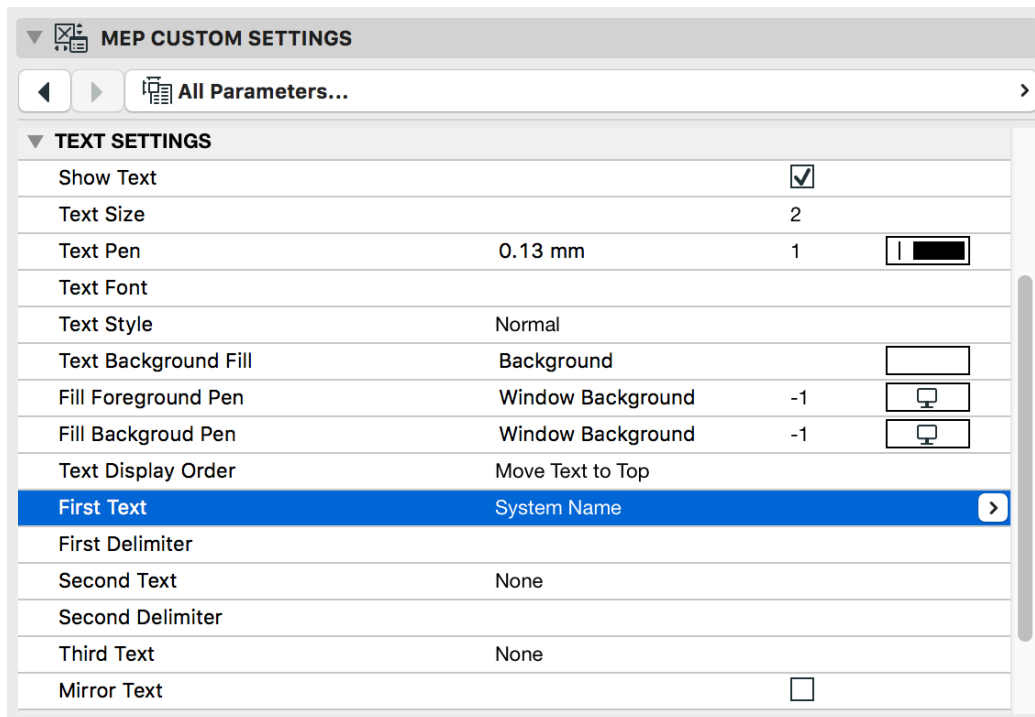
- 2 Use the **Pick Up** function (**ALT+click**) to pick up the geometry settings of the segment.



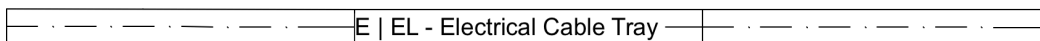
- 3 **Select the segment and open its settings.**
- 4 **Navigate to the ..._GSSG equivalent of the element**, but do not select/activate it, otherwise it would override the existing values with its defaults. Instead use the **Inject** function with its shortcut on the Preview picture within the library - **press CTRL/CMD+ALT while clicking on it**. The ..._GSSG Object should now have the inherited settings.



- 5 Go to the **All Parameters...** tab and change the display options of the text as needed under **Text Settings**.



- 6 The final result should look similar to the following:



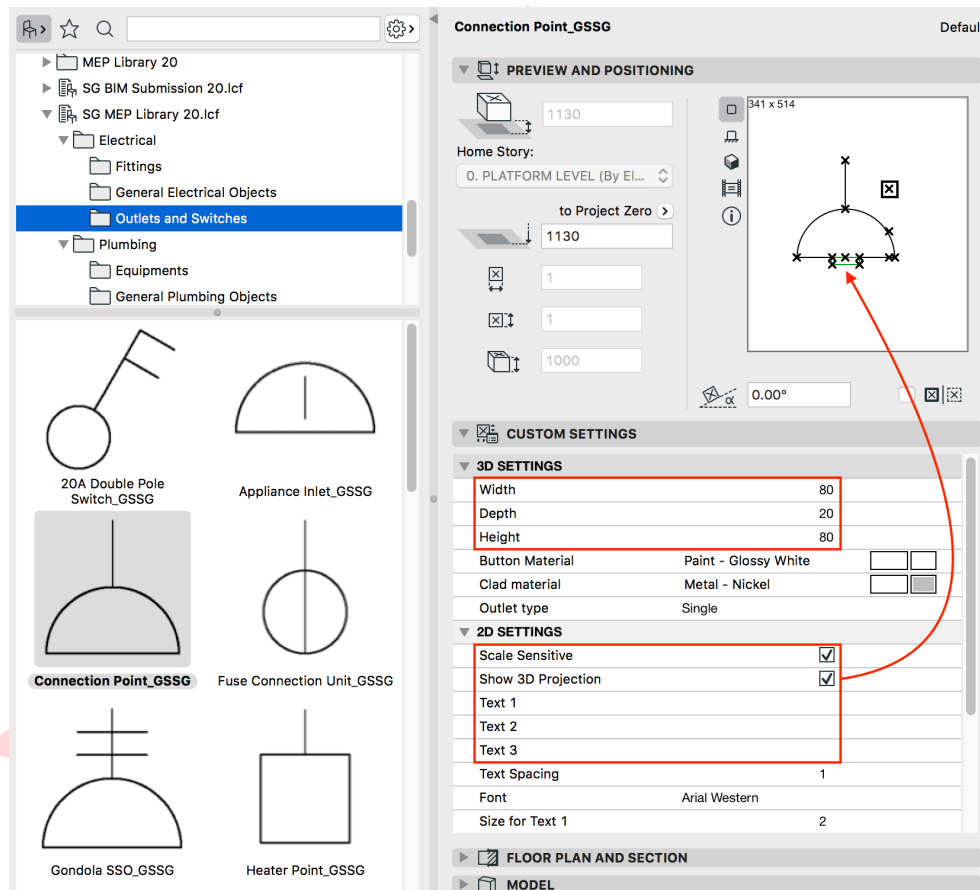
When modeling with the MEP Modeler it is of outmost importance to make sure that the elements are connected properly as it makes the selection and the editing easier. The connections can always be checked using the **Select Connected Elements...** function of the MEP Toolbar.



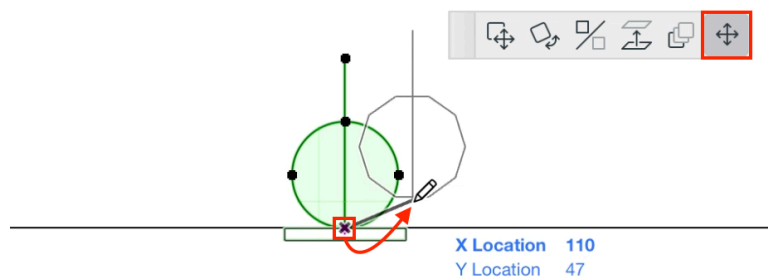
2D Symbols

Typically electrical symbols are Objects, not MEP parts. In general the user can:

- set the actual sizes and type of the Object
- turn on Scale Sensitivity to change the size of the 2D symbol on different plans
- turn on actual 3D projection of the element
- add different custom text values to display

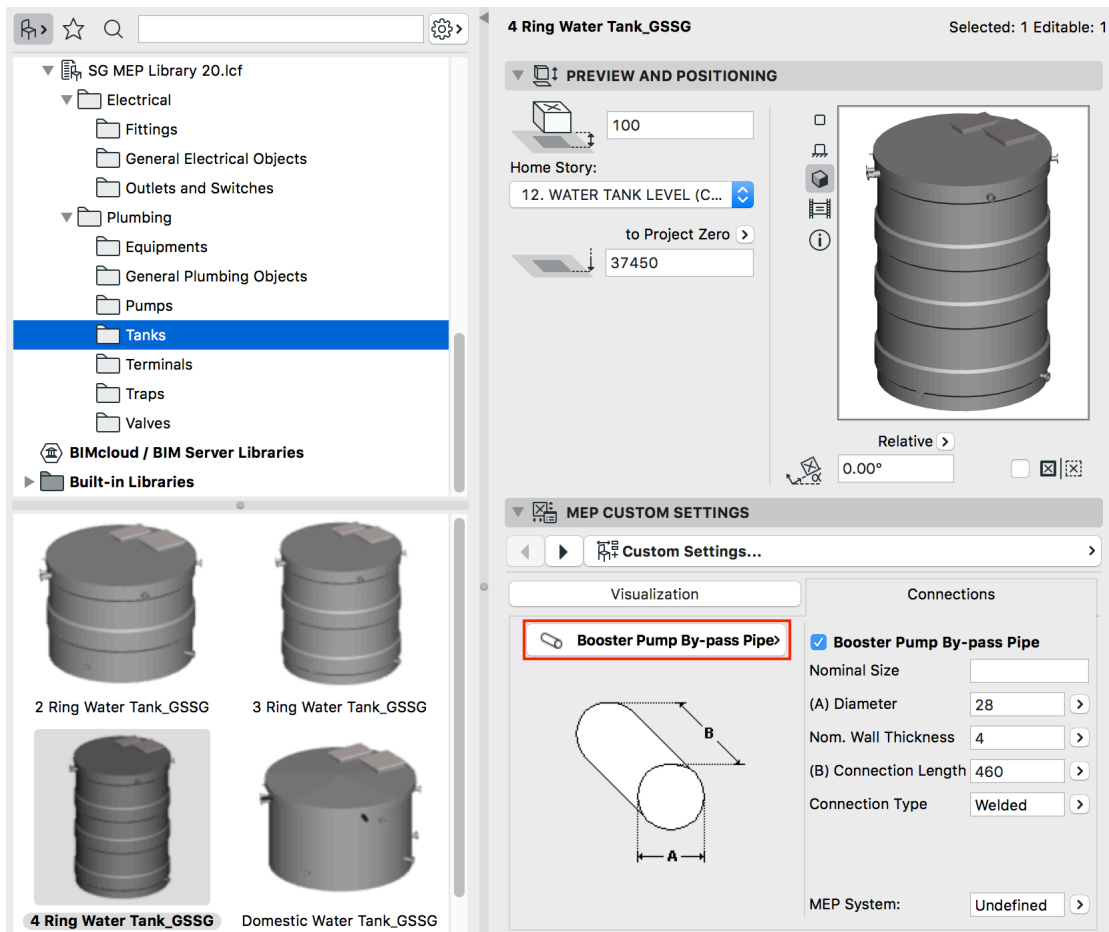


The 2D symbol can be moved independently on the plan views to avoid overlapping symbols using the **Move node** command of the pet palette.



3D Objects

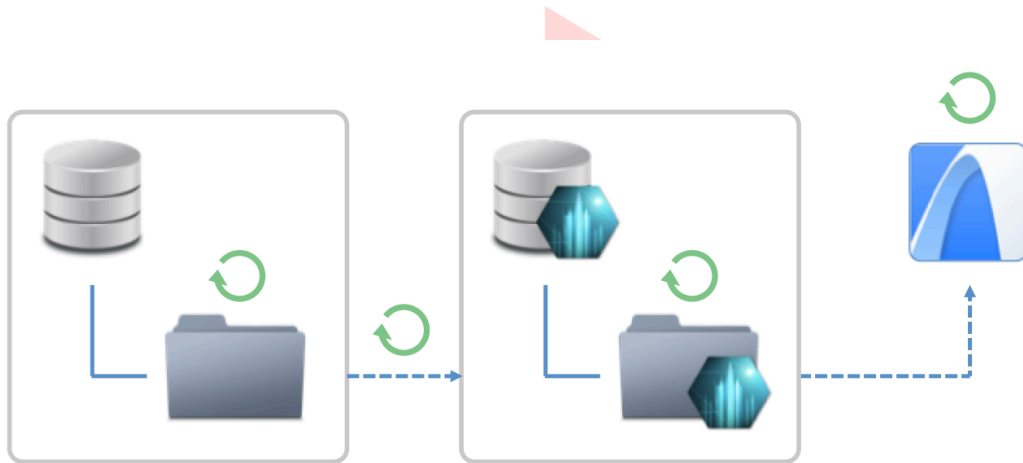
As true 3D objects, various terminal and fitting elements are also available. Their connections include all standard connections for local use in Singapore.



Updating the Libraries

The **custom office library might change frequently** by new Objects being added to it in the early project phases or during the implementation process. These **updates should be distributed to the Teamwork users and projects regularly**.

The **updated/new elements should be replaced on the file server first**. Then **the updated folders have to be uploaded to the server**. The BIMcloud libraries can be easily be updated without deleting and re-uploading existing libraries.



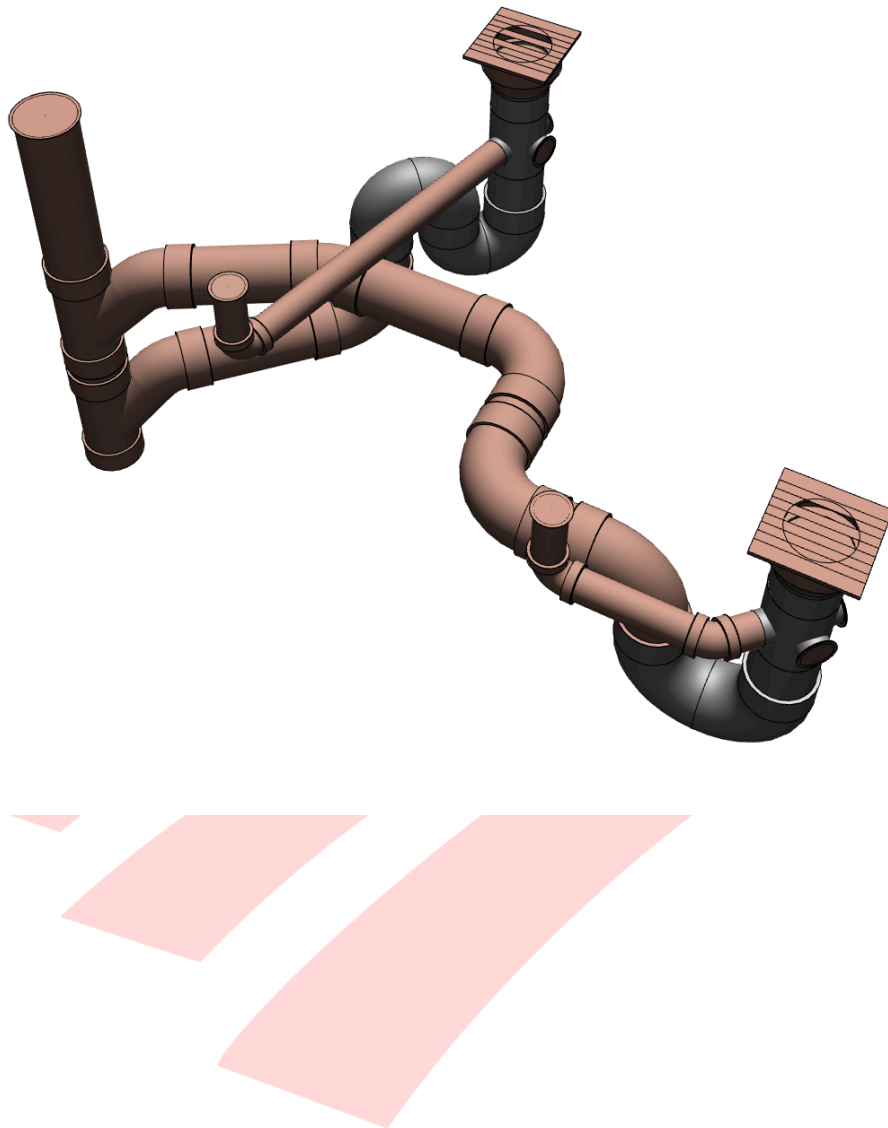
- 1 Go to **Files/Libraries and Objects/Manage BIMcloud Libraries...** in ARCHICAD.
- 2 **Select the library** you wish to update and click **Update from....**

Note: If the user has the necessary access rights then there is no need to reserve in order to update the libraries.

- 3 **Browse the updated library** on the file server and click **Choose**.
- 4 Click **Close** and **Reload** when prompted. The new Objects are ready to use.
- 5 Similarly to the newly uploaded libraries, **notify the users to Receive**.

Sample Content

The templates shall include sample content for the convenience of the MEP modelers. In general it is advisable to create as many predefined groups as possible even in an external file that can be used as a group library file containing predefined configurations of the frequently used variations.

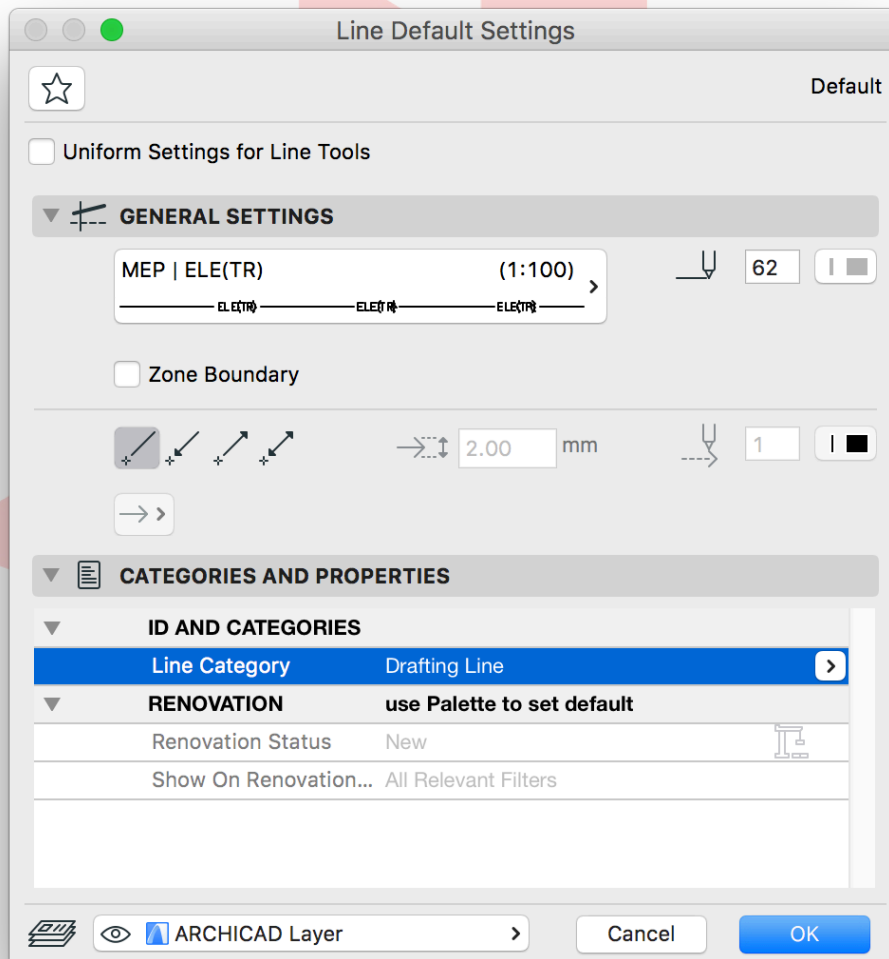


Plans Based on 2D Tools

Those 2D plans where certain systems would require similar or same types of elements above each other, the additional text would still not be sufficient enough for clarification. These plans are typically electrical plans or site plans where no actual modeling is done, instead, traditional 2D elements are used, such as Lines, Polylines and Arcs with different symbol-based Line Types to specify the number of overlapping routes.

Typically these plans would have Legends for the Line Types.

- 1 Activate the **Line/Polyline/Arc tool**.
- 2 Pick a **Line Type** and set the Line Category as **Drafting Line**.



NAVIGATOR - PROJECT MAP AND VIEW MAP

The **Project Map** contains sample Stories, Sections, Elevation, Worksheets, 3D Documents and Schedules to start with.

- Worksheets were created to introduce sample content, such as:
 - **Endorsements** - the textboxes can be used for Master Layouts
 - **M | Legend** - sample legend content for Layouts
 - **M | Schematic Diagrams** - the diagrams are completely 2D drafting elements as they cannot be directly derived from the model. The actual diagrams can be created on other separate Worksheets, then placed on Layouts for documentation.
 - **M | Text-Based Linetypes** - for 2D-based drawings special Lines can be created as per the examples. Use 2D tools to create the line segments (can be converted texts from existing DWG drawings).

The **View Map** has the following folder structure:

- **3D** - Generic 3D view, without Zones for better understanding the architecture.
- **M | WORKING VIEWS** - these can be used as a universal reference to switch back to an editable mode for modeling in plan view.
The plans have View Settings that are very similar to the default ARCHICAD settings with all Layers turned on and an extended architectural Pen Set, originally used for the architectural native BIM submission. The Floor Plan Cut Plane settings are kept as defaults as well.

- **SUBMISSION** - this folder has a structure for Stories, Sections and Elevations by agencies to submit to:

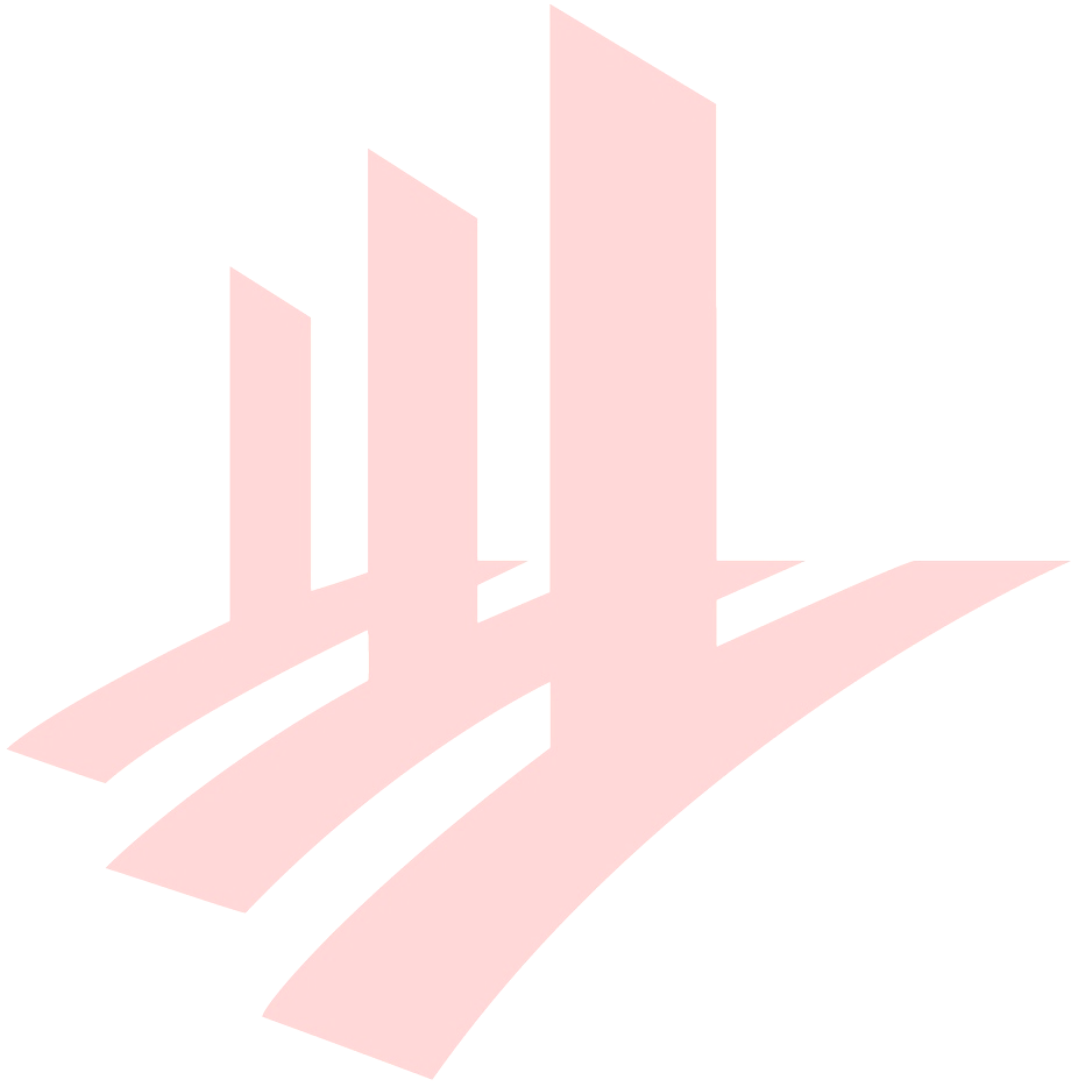
- **BCA**
 - **CDCD**
 - **PLANS**
 - **TSED**
 - ...
- **CBPD**
 - ...
- **CityGas**
 - ...
- **FSSD**
 - **ACMV**
 - ...
 - **DETECTOR**
 - ...
 - **FPS**
 - ...
- **IDA-TFCC**
 - ...
- **PUB**
 - **WRN**
 - ...
 - **WTR**
 - ...
- **SPPG**
 -
 - **SUBM | SECTIONS & ELEVATIONS**
 - **SECTIONS**
 - **ELEVATIONS**

- **TENDER** - this folder has a structure for Stories, Sections and Elevations by MEP disciplines:

- **ACMV**
 - **PLANS**
- **Electrical**
 - ...
- **FPS**
 - ...
- **Gas & Water**
 - ...
- **Rainwater Harvesting**
 - ...
- **Sanitary (Upper)**
 - ...

- **Sanitary (Lower)**
 - ...
- **TDR | SECTIONS & ELEVATIONS**
 - **SECTIONS**
 - **ELEVATIONS**

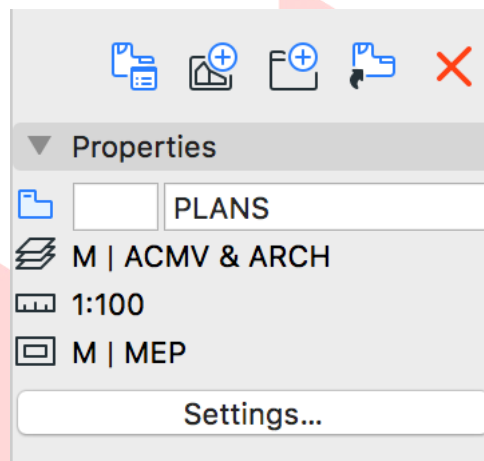
Since the folders are *Cloned Folders*, the Views in these folders are automatically created with the preset View Settings, whenever new viewpoints are created in the Project Map.



Initial Setup of the View Map

The initial View Map structure is merely a sample that shall be changed/completed according to actual project needs:

- 1 Create new regular folders using the **New Folder...** button.
- 2 Select an item to create a folder inside it. Use the **Clone a Folder...** button to **choose a viewpoint folder** from the Project Map and **set its View Settings**.



When creating a Cloned Folder, **all viewpoints of the referred Project Map section will be cloned. There is no option to remove certain cloned Views while keeping others** in the View Map, therefore consider the need of cloning to avoid the unnecessary number of duplicate Views and to keep their number to the necessary minimum to provide a simpler structure and to avoid performance issues.

The **decisions above should be made by the BIM Manager** after consulting the project team before actual work begins.

When creating Cloned Folders, only the ID of the folder can be set, **the individual Views needs to be set manually after they are created.**

The same applies in case of newly created viewpoints and their cloned Views, the IDs of new items have to be set manually.

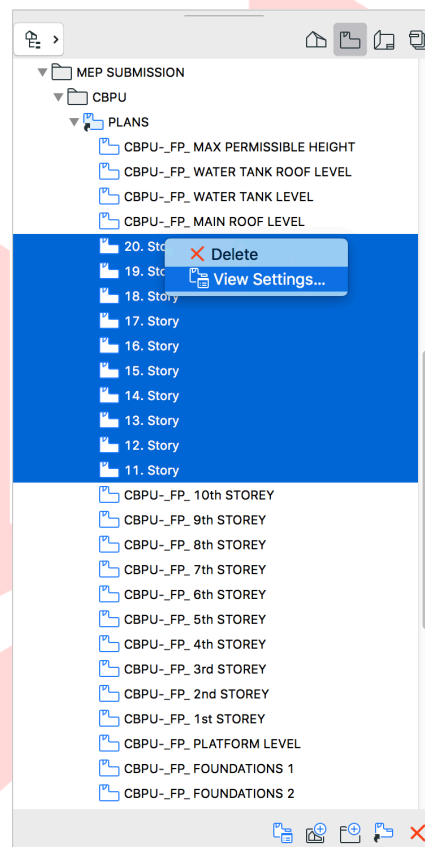
- 1 **Select the necessary Views** (not the folders!). Select the topmost item and SHIFT+click the bottommost to select all items. **Right-click and choose View Settings....**
- 2 Make sure the ID type is set to **Custom** and **define the IDs**.

Updating the View Map

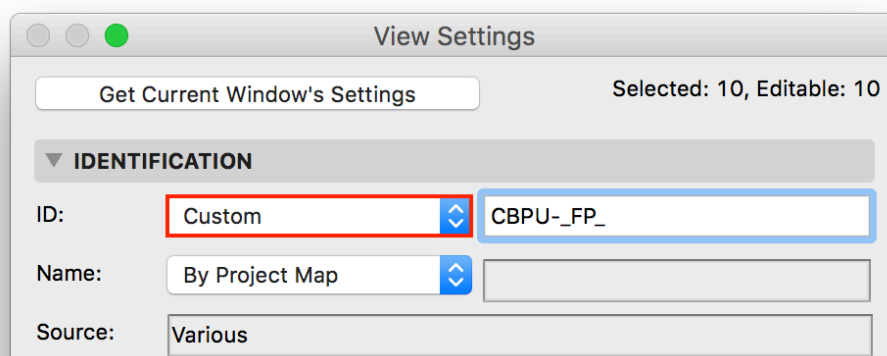
When creating Cloned Folders, only the ID of the folder can be set, **the individual Views needs to be set manually after they were created.**

The same applies in case of newly created Project Map viewpoints and their cloned Views - the IDs of new items have to be set manually.

- 1 **Select the necessary Views** (not the folders!). Select the topmost item you wish to change and SHIFT+click the bottommost to select all items. **Right-click and choose View Settings....**



- 2 Make sure the ID type is set to **Custom** and **define the IDs.**



Those **View factors that are defined by a name** in the Views Settings are not referred to by the Index Numbers (Layer Combination, Pen Set, Model View Options, Graphic Overrides, Renovation Filter), but **are saved by their names only, therefore if the name is changed, the dialog will show these as missing**. It will still keep the actual View Settings, but **it is highly recommended to pick the renamed option and re-save the View** (click OK).

View Settings

Get Current Window's Settings Selected: 1, Editable: 1

▼ IDENTIFICATION

ID: Custom CBPU-_FP_

Name: By Project Map 6th STOREY

Source: 6. 6th STOREY

▼ GENERAL

Layer Combination: Missing (MEP)

Scale: 1:100

Structure Display: Entire Model

Pen Set: BIM SUBMISSION

Model View Options: Missing (MEP)

Graphic Override: No Overrides

Renovation Filter: 05 Planned Status

Note: Regardless of this view's scale, GDL objects will be represented according to the source viewpoint's scale.

MEP SYSTEMS

The MEP Systems (**Design/MEP Modeling/MEP Systems...**) are named in a manner to ease their selection based on their codes as per the following:

<DISCIPLINE CODE> | <ABBR. OF SYSTEM NAME> - <FULL SYSTEM NAME>

As an additional system, **Undefined** is also present to ensure that the user defines the correct systems. If that is missed, the systems will remain Undefined instead of using a wrong setting.

Definition options of MEP Systems and their effects on representation for the components as per the following:

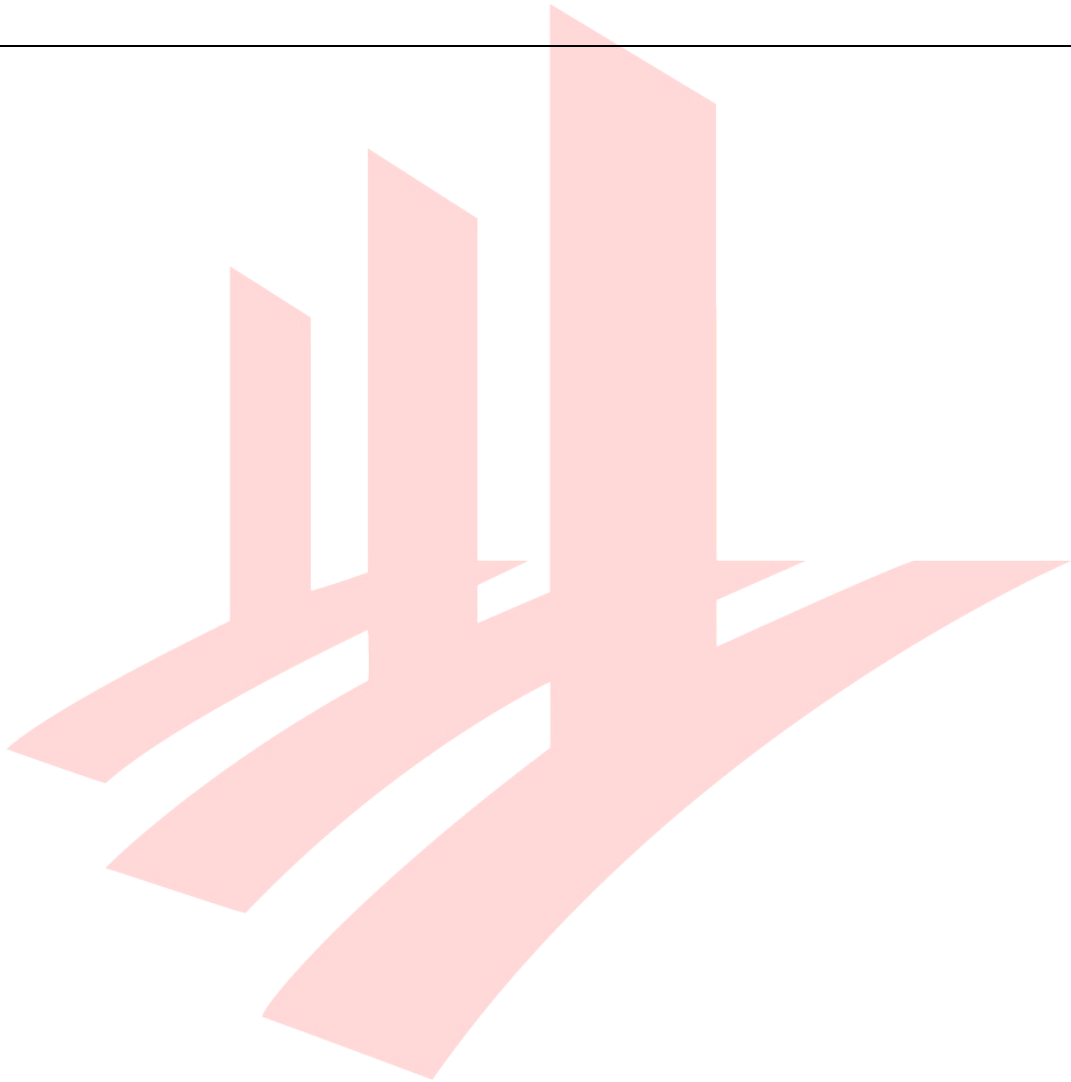
Type	Available for			System is set for	2D & 3D Representation is based on
	Ducts	Pipes	Cable Trays		
Segment Bend Take-off	✓	✓	✓	entire Object	MEP System settings
Transition Wye	✓	✓	-	entire Object	MEP System settings
Reducer	-	-	✓	entire Object	MEP System settings
Tee Fittings	✓	✓	✓	each Connection	setting of Main 1 Connection
Terminal	✓	✓	✓	entire Object OR available Connection	MEP System settings OR setting of Connection
In-line	✓	✓	-	each Connection	setting of Inlet Connection
Equipment	✓	✓	-	not applicable OR available Connection	Object settings (MEP System settings not applied)
Architectural	-	-	-	available Connection	Object settings (MEP System settings not applied)
Custom MEP	✓	✓	-	each Connection	setting of the first Connection in the list

Note #1: Equipment elements may have no Connections at all, in this case the MEP System definition is not applicable.

If there are Connections available those should be assigned to an MEP System.

In both cases the **2D and 3D representation of these elements will be based on the Object settings** and will not be controlled by the MEP System settings.

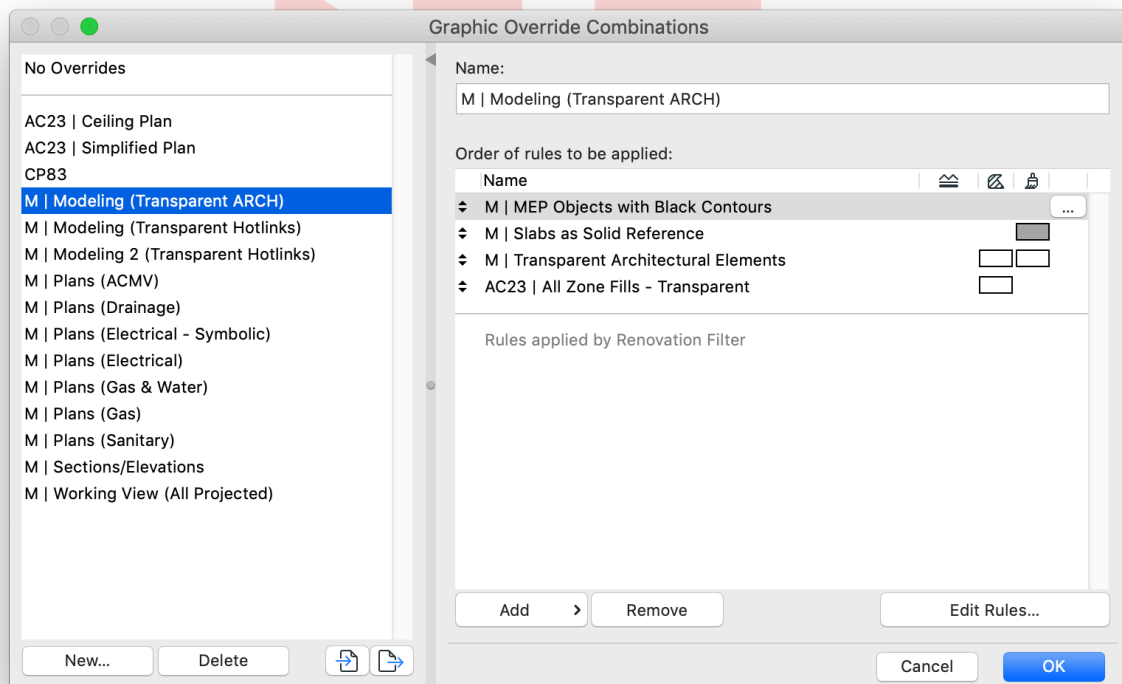
Note #2: Architectural elements of the ARCHICAD 23 Library become available as Equipment, but **only their Connections can be assigned with MEP Systems**. The **2D and 3D representation of these elements will be based on the Object settings** and will not be controlled by the MEP System settings.



GRAPHIC OVERRIDES

The following Rules and Graphic Override Combinations are available in the MEP template:

- Combinations and Rules with the prefix **AC23 |** are the defaults coming from the factory template of ARCHICAD. The **Combinations may be deleted from the MEP file**, but some of the **Rules are used for MEP Combinations as well - deleting these would change the representation, therefore not recommended.**
- **M |** prefixed Rules **must be used for the correct representation of linework in 2D plans, differentiated by sub-disciplines** of MEP.
- **Unmarked Combinations/Rules are present in all discipline templates.**



MEP Graphic Overrides

The following Combinations and Rules are provided for MEP representation:

- **M | Modeling (Transparent ARCH)** - Generic checking option for the MEP team to see the regular architectural elements as transparent.
 - **M | MEP Objects with Black Contours** - Changes the 2D representation to black and white.
 - **M | Slabs as Solid Reference** - Changes the 3D representation to solid grey for slabs.
 - **M | Transparent Architectural Elements** - Changes the 3D representation to transparent for architectural elements.
 - **AC23 | All Zone Fills - Transparent**
- **M | Modeling (Transparent Hotlinks)** - Generic checking option for the MEP team to see the regular architectural elements as transparent.
 - **M | MEP Objects with Black Contours** - Changes the 2D representation to black and white.
 - **M | Transparent Hotlinked Elements** - Changes the 3D representation to transparent for all elements in hotlinked modules.
 - **AC23 | All Zone Fills - Transparent**
- **M | Modeling 2 (Transparent Hotlinks)** - Generic checking option for the MEP team to see the regular architectural elements as transparent.
 - **M | Slabs as Solid Reference** – Slabs shown as solid grey bodies.
 - **M | Transparent Hotlinked Elements** - Changes the 3D representation to transparent for all elements in hotlinked modules.
 - **AC23 | All Zone Fills - Transparent**
- **M | Plans (ACMV)** - Representation for ACMV documentation, the ACMV elements (by Classification) are shown with system colors while all other elements are greyed out.
 - **M | All Greyed out (Except ACMV)** - Changes the 2D representation to greyed for all elements, other than ACMV.
- **M | Plans (Drainage)** - Representation for Drainage documentation, the Drainage elements (by Classification) are shown with system colors while all other elements are greyed out.
 - **M | All Greyed out (Except Drainage)** - Changes the 2D representation to greyed for all elements, other than Drainage.
 - **M | MEP Objects with Black Contours** - Needed to draw and actual contours that are not present by system settings.

- **M | Plans (Electrical - Symbolic)** - Representation for Electrical documentation, the Electrical elements (by Classification) are shown with symbolic representation while all other elements are greyed out.
 - **M | All Greyed out (Except Electrical)** - Changes the 2D representation to greyed for all elements, other than Electrical.
 - **AC23 | All Cover Fills - Transparent**
- **M | Plans (Gas & Water)** - Representation for Gas & Water documentation, the Gas & Water elements (by Classification) are shown with specific colors while all other elements are greyed out.
 - **M | All Greyed out (Except Gas)** - Changes the 2D representation to greyed for all elements, other than Electrical.
 - **M | Ducts (Box up) with Transparent Fills**
 - **M | Water Objects with Blue Contours**
 - **M | Gas Objects with Red Contours**
- **M | Plans (Electrical)/(Gas)/(Sanitary)** - Set similarly to Drainage.
- **M | Sections/Elevations** - All MEP elements with contours and system color while all other elements with transparent fills.
 - **M | MEP Objects with Black Contours**
 - **AC23 | All Cut Fills - Transparent, No Skin Separators**
- **M | Working View (All Projected)** - All elements with contours and white fills.
 - **M | Elements with Black Contours and Solid White Fills**

ATTRIBUTES

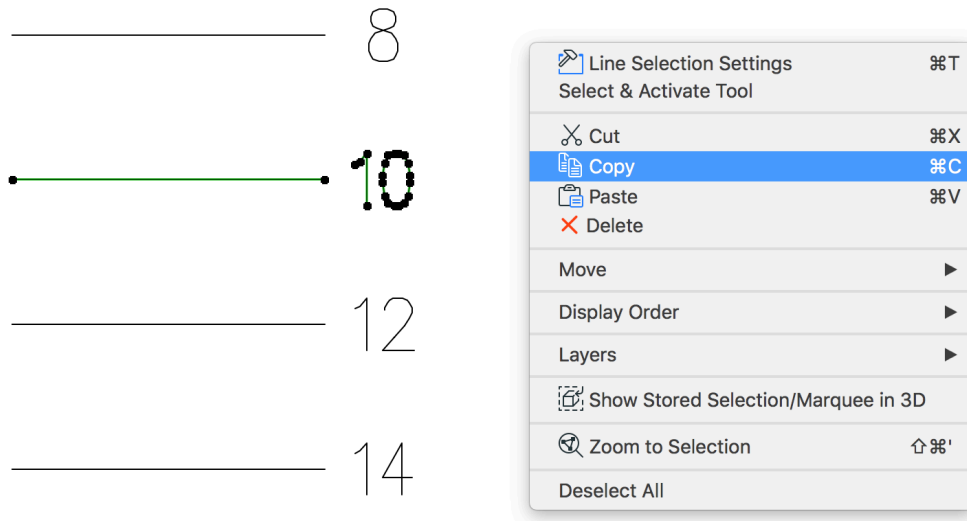
Line Types and Pen Sets

The following Line Types were created for the MEP use of ARCHICAD. These are to be used for those plan views where the content is not modeled.

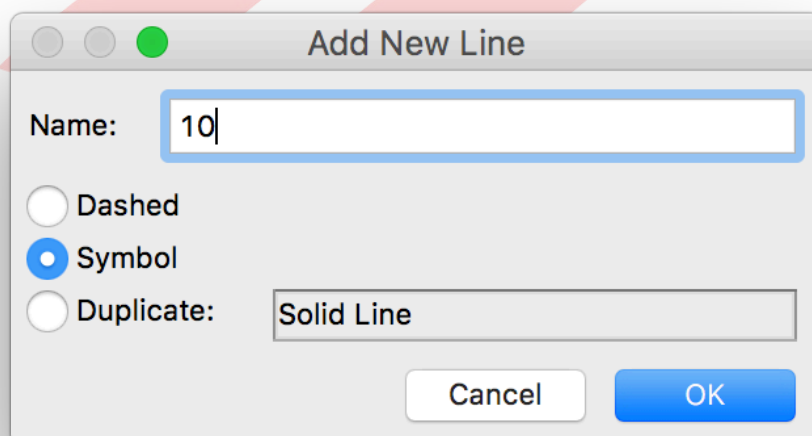
- **MEP | IC**
- **MEP | EL**
- **MEP | SE**
- **MEP | ELE(TR)**
- **MEP | CL**
- **MEP | TL**
- **MEP | T**
- **MEP | TV**
- **MEP | CU**
- **MEP | AL**
- **MEP | CAX**
- **MEP | NCAX**
- **MEP | XXX**
- **MEP | R**
- **MEP | W**
- **MEP | DR**
- **MEP | HR**
- **MEP | D**
- **MEP | WR**
- **MEP | WL**
- **MEP | HOT**
- **MEP | GAS**
- **MEP | SPR**
- **MEP | WS**
- **MEP | CWR**
- **MEP | CWS**

Additional Line Types might be created if necessary as follows:

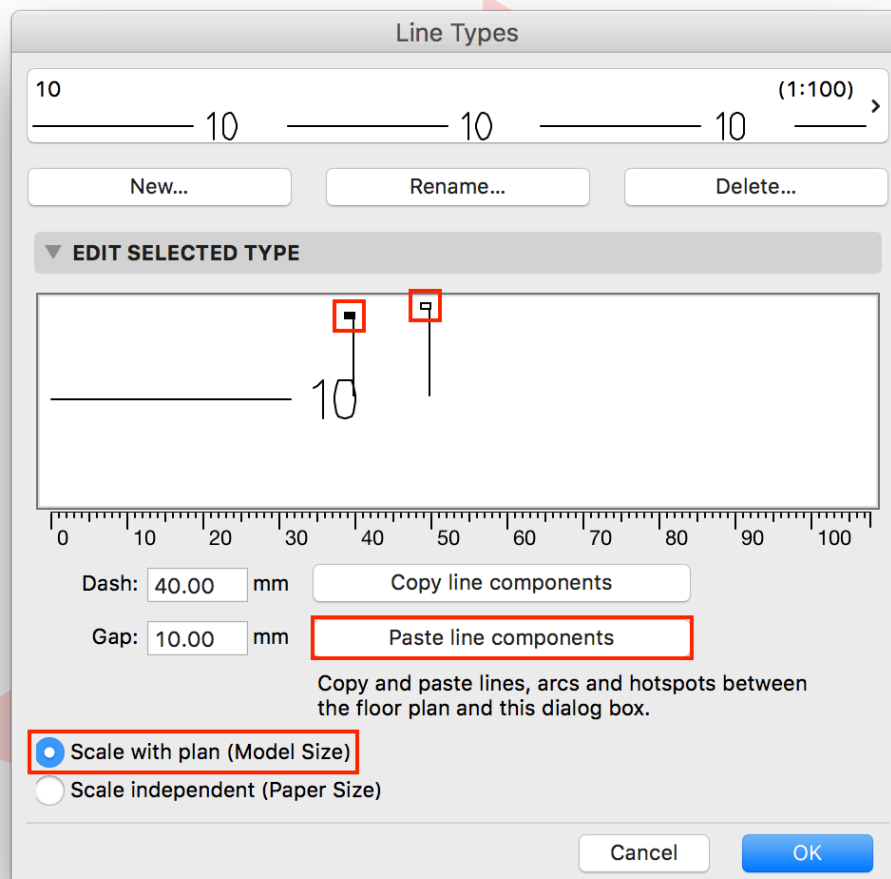
- 1 **Draw line segments** into a 2D workspace (plan view/worksheet).
- 2 **Include the text as drawn elements** as well, like lines and arcs.
- 3 **Select the elements and press CTRL/CMD+C to copy** or choose Copy from the context menu.



- 4 Open **Options/Element Attributes/Line Types...**
- 5 Click **New...** and choose **Symbol type**. Name the line type and click **OK**.



- 6 Click **Paste line components** to paste the segments that were copied to the clipboard earlier.
- 7 Set **Scale with Plan (Model Size)** option to fix the segment sizes (zooming should not affect the size of text segments).
- 8 Make adjustments as necessary by grabbing the handles or by typing the sizes for the dash and the gap and click **OK**.



Note: Symbol-based text does not adapt if the Line/Polyline/Arc is mirrored. In these cases the drawing direction of the named elements has to be changed. For the same reason **these elements can only be used in Hotlinked Modules with limitations**, since the Modules are typically mirrored in large projects.

Layer Combinations

The Layer Combinations use the naming convention introduced in previous chapters.

- **M |** prefix marks the required for structural representation
- **unmarked items are generic**, available in all discipline templates

The following Layer Combinations are present in the MEP template as a base by purpose (listed in alphabetical order in the Layer Settings):

- Generic purpose:
 - **All Visible Shown Editable** - shows all Layers turned on
 - **Coordination View (AR & CS)** - shows all architectural, structural and MEP elements only for coordination/visual checking.
- For actual modeling work of the different sub-disciplines of MEP there are specific Layer Combinations for each discipline to show their own elements only or with the architecture as well as a reference.
 - **M | ACMV & AR**
 - **M | ACMV Only**
 - **M | EL & AR**
 - **M | EL Only**
 - **M | EL-LIGHT & AR**
 - **M | EL-POWER & AR**
 - **M | RWTR & AR**
 - **M | RWTR Only**
 - **M | SANI & AR (Lower)**
 - **M | SANI & AR (Upper)**
 - **M | SANI Only (Lower)**
 - **M | SANI Only (Upper)**
 - **M | SPK & AR**
 - **M | SPK Only**
 - **M | WATER-GAS & AR**
 - **M | WATER-GAS Only**

- For submissions there are specific Layer Combinations for each agency to show the relevant content.
 - **SBM | BCA-CDSD**
 - **SBM | BCA-TSED**
 - **SBM | CBPD**
 - **SBM | CityGAS**
 - **SBM | FSSD-ACMV**
 - **SBM | FSSD-Detector**
 - **SBM | FSSD-FPS**
 - **SBM | IDA-TFCC**
 - **SBM | PUB-WRN**
 - **SBM | PUB-WTR**
 - **SBM | SPPG-ESS**
 - **SBM | SPPG-UPS**

Note: As the Layers in use are very specific from practice to practice, **the MEP team is required to adjust the Layer Combinations to their needs.**

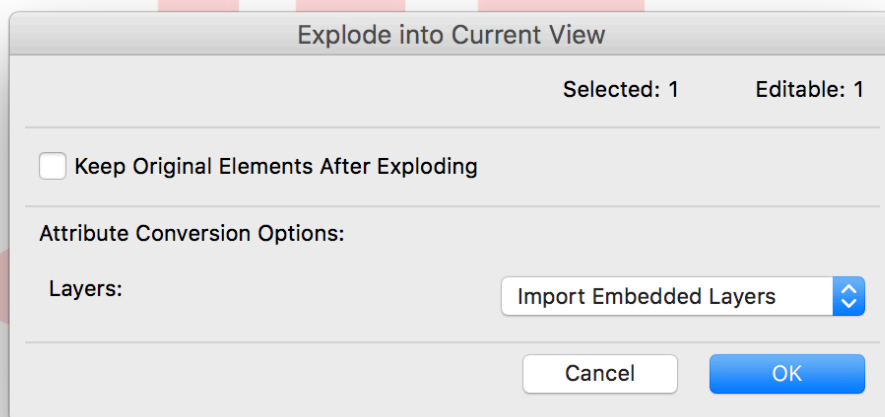
1. Go to **Document/Layers/Layer Settings (Model Views)...**
 2. **Select the Layer Combination** to edit.
 3. **Change the Layer statuses** on the right side.
 4. Click **Update** at the bottom left of the dialog.
 5. Click **OK** to close and apply the changes.
-

SECTION DIAGRAMS AND WORKSHEETS

Section diagrams must be created using traditional 2D tools as they cannot be derived from the BIM model due to their generic nature.

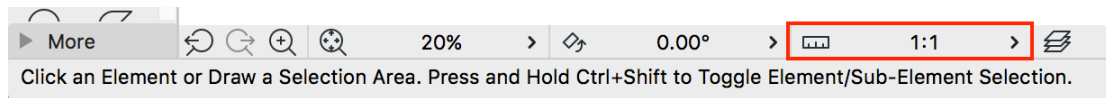
Existing external drawings however may be referenced and imported and reused for new projects:

- 1 Go to **File/External Content/Place External Drawings....** As opposed to xRefs, this option will not lock the external content before it is *Binded* into the project.
- 2 **Select the drawing and right-click and choose Explode into Current View** to merge its content into the existing drawing.
- 3 **Uncheck Keep Original Elements after Exploding checkbox.**
- 4 To preserve and import the original Layers, select the **Import Embedded Layers** option.



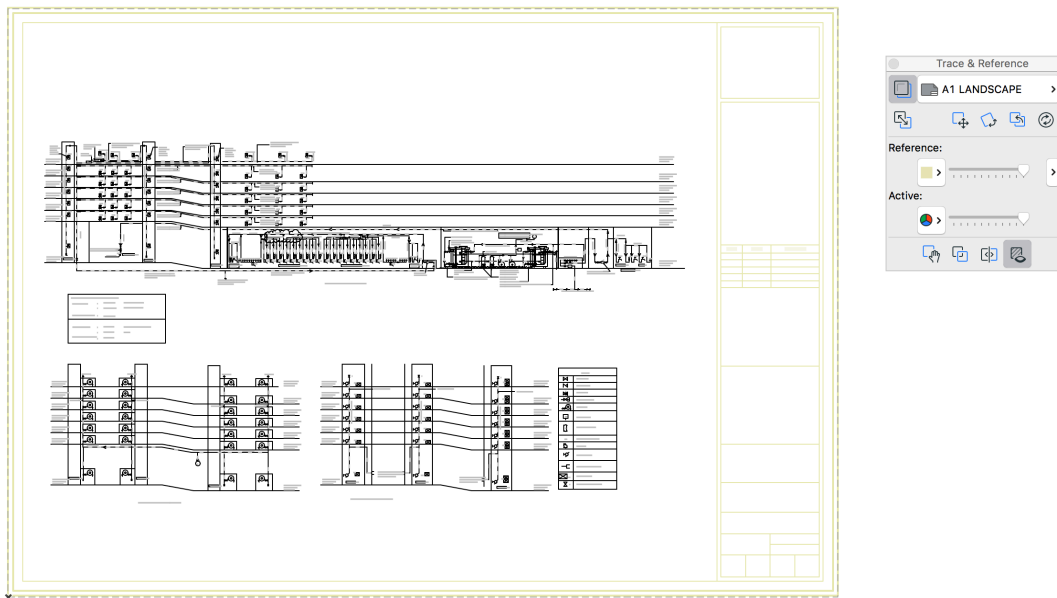
- 5 Click **OK** to explode.

The worksheet has a **1:1 scale** set and the A1 Landscape Master Layout referenced in the background. Since the diagrams are schematic, they are not using any real sizes, therefore can be handled as actual drawings.



A sample diagram is inserted onto the W-01 Worksheet for reference.

A1, 1:1 SCALE



Depending on the number of the required diagrams it is recommended to create them on separate Worksheets to avoid too many 2D elements, which can significantly slow down the 2D navigation.

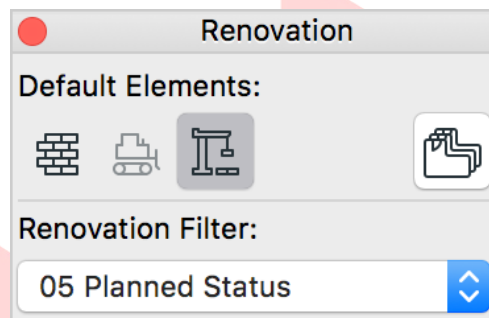
It is also advisable to consolidate the linework from time to time to get rid of unnecessary elements:

- 1 **Select the 2D elements** to consolidate.
- 2 Go to **Edit/Reshape/Linework Consolidation....**
- 3 Follow the steps in the appearing dialog.

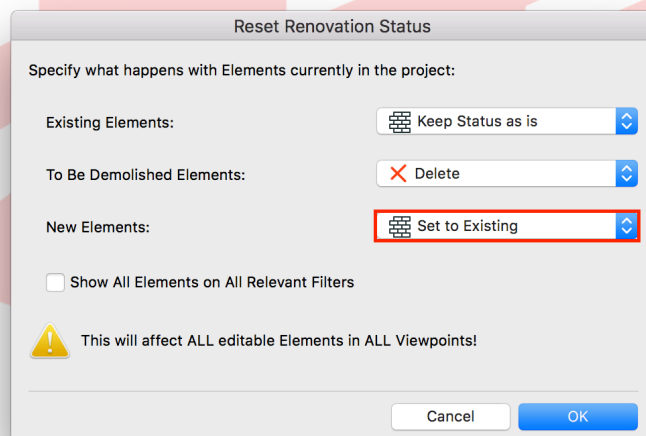
AMENDMENT SUBMISSIONS

By default all elements are defined as *New*. Renovation Filter colors are based on the CP83 color coding.

Use the Renovation palette (**Windows/Palettes/Renovation**) to change the default renovation status of elements or change the current renovation status of specific elements, which are selected.



To change all the Renovation Statuses of all the elements (for example change all *New* elements to *Existing* after finishing a phase) use the **Document/Renovation/Reset Renovation Status...** menu command and the upcoming dialog.

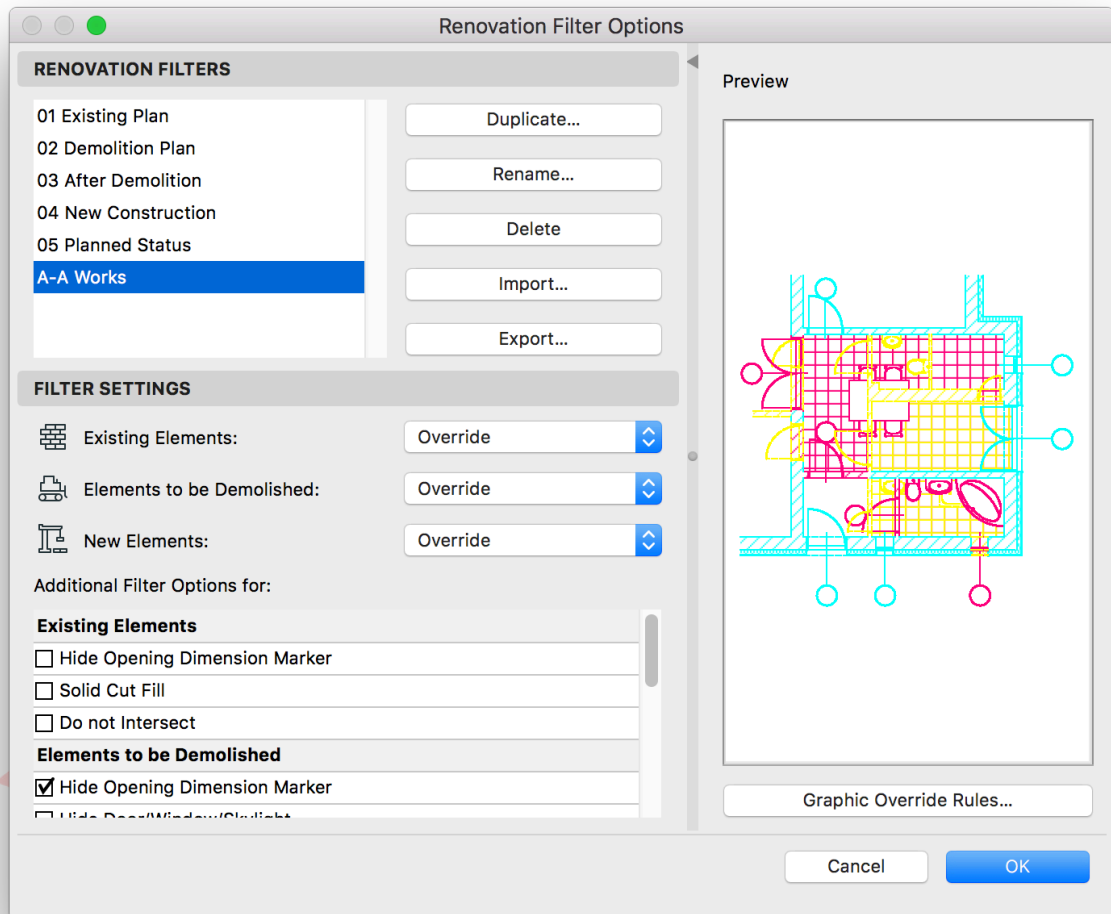


Find more information on the **Renovation** feature
at the GRAPHISOFT Help Center here:

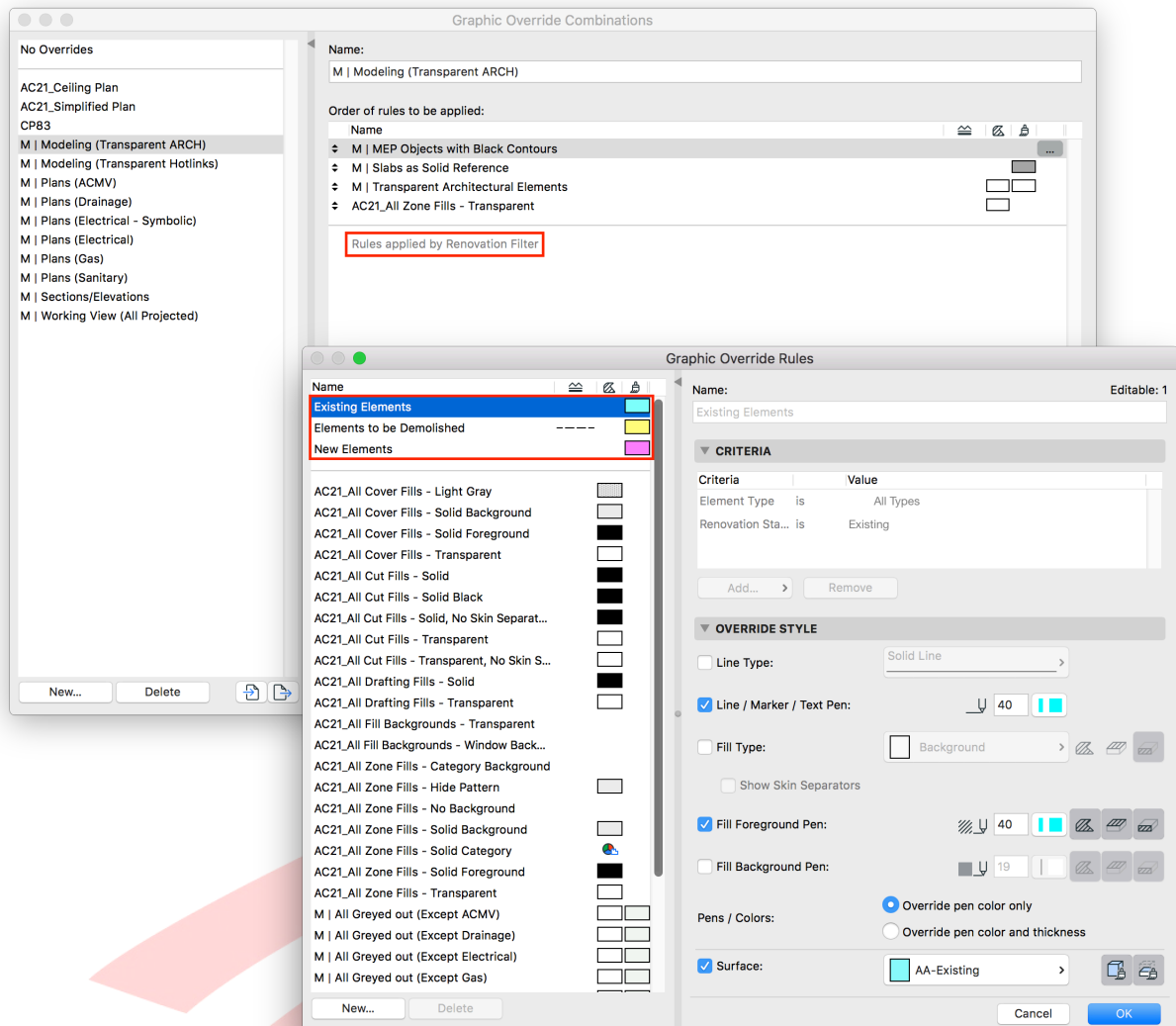
<https://helpcenter.graphisoft.com/user-guide/76866/>

For additional filtering options:

- 1 Go to **Document/Renovation/Renovation Filter Options....**
- 2 Under Filter Settings, filtering options can be changed. To edit the appearance of the elements with different statuses use the **Graphic Override Rules...** button at the bottom right.



- 3 Select the status at the top left to override to modify the 2D/3D representations under Override Style.

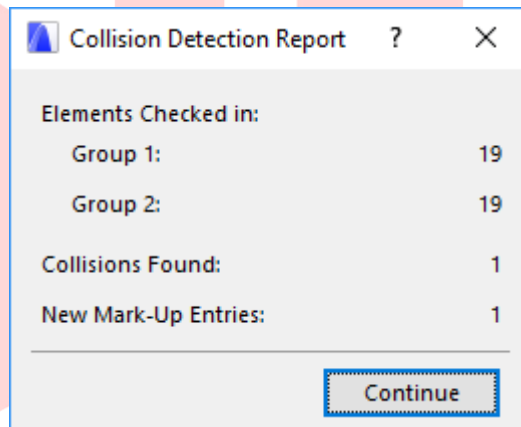


Note: Renovation overrides are the weakest overrides, which means that if **Graphic Overrides are active and affect the elements then they would also override the Renovation colors**, therefore no other Graphic Overrides are recommended when highlighting the amendments.

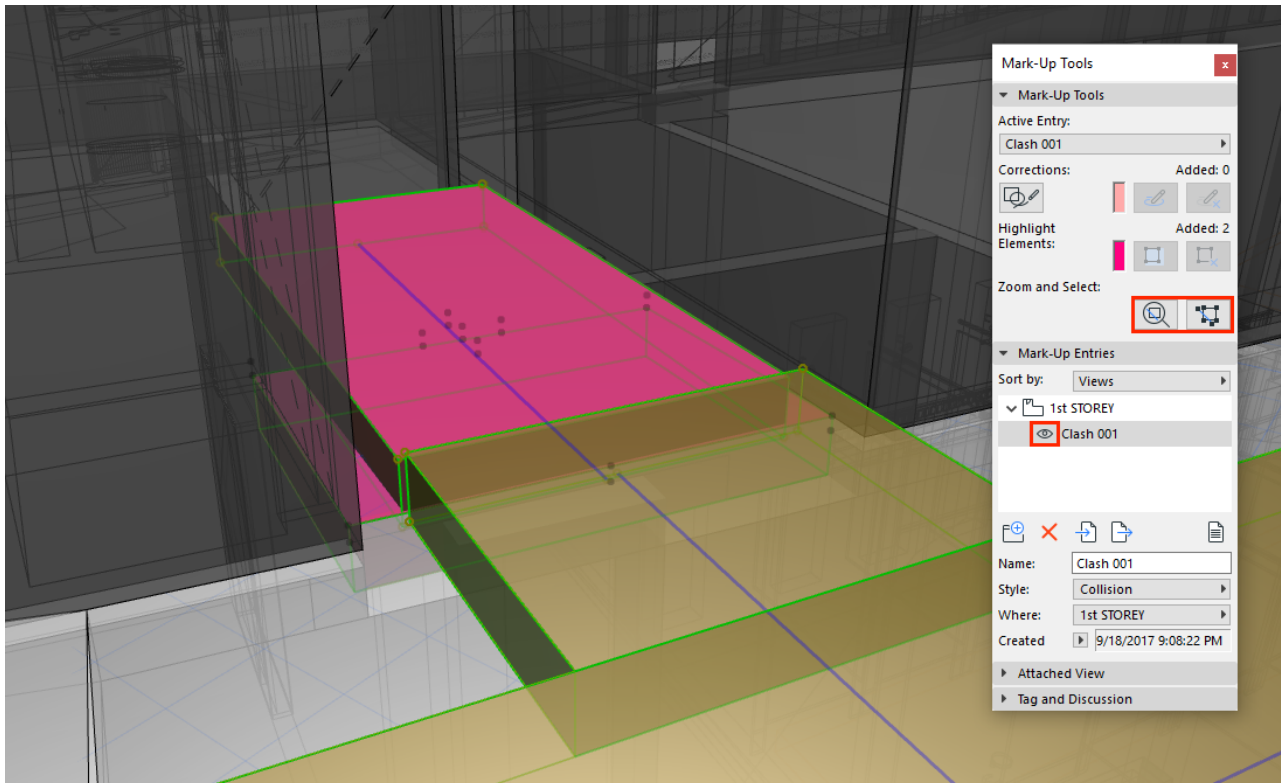
CLASH DETECTION

Clash detection is optional and can be carried out in between accessibility elements and regular building elements to ensure access and clearances. This is completely voluntarily and will not be checked by the officers, however it can increase the quality of the BIM project.

- 1 Launch the **Design/Collision Detection...** command.
- 2 **Define the two groups** you wish to check for collision. Preset Find & Select Criteria Sets can be used for this purpose.
- 3 **Run the check.**
- 4 The found clashes can be listed under the Mark-Up Tools palette. Click **Continue**.



- 5 Go through the entries one-by-one and validate the results. Use the **eye icon** to show the actual clashes and the **Focus on Elements** or **Select Elements** buttons to zoom in and highlight the colliding elements respectively. The elements will be highlighted with magenta color by default.



Courtesy of Liu & Wo Architects Pte Ltd.

- 6 If the clash is a real issue (for example accessibility route clashing with elements) then fix the model accordingly.
- 7 If the clash is not a valid problem (for example MEP connections of bathroom fixtures hitting walls) then change the Style to **FALSE CLASH (no follow up needed)** for indication.
- 8 Use the **Capture** button under Attached View (will change to 'Remove' once the view is taken) to provide a visual for the processing officers and use the **Tag Text** field under Tag and Discussion to explain the clash and the reason why it does not need any follow ups.

Clash dialog box details:

- Name: Clash 001
- Style: False Clash (no follow-up)
- Where: 1st STOREY
- Created: 9/18/2017 9:08:22 PM
- Tag Text: Clash with 1:12 ramp

- 9 Once done, the Mark-Up entries have to be cleaned up. The clashes that were fixed have to be deleted (**select the entry** and click **Delete Entry**) and to have a better overview you may want to sort the items by **Style**, so it is easier to find the outstanding issues.

Mark-Up Entries dialog box details:

- Sort by: Style
- Table:

Name	Style
Clash 001	False Clash (no follow-up)

- 10 Run the clash detection once again without any elements selected to see if the fixes worked. The real fixed issues should not be found again while the existing false clashes will remain.

Note: Always keep the false clashes. Deleting these entries would result in new clashes when the model is checked again.

DOCUMENTATION

Layouts and Master Layouts

The Layout Book includes some mandatory items and samples for customization as follows:

- **M | 01 SUBMISSION** – Contains all folders from the SUBMISSION View Map folder
- **M | 02 TENDER** – Contains all folders from the TENDER View Map folder
- **M | 03 Sample Subset** - Samples of layouts, the users have to create their own based on their company standards. This folder therefore **may be deleted** from the office template.
 - **S-01 Sample Layout** - contains the 1st STOREY floor plan as a sample.
 - **S-02/S-03 Sample Legends 1/2** - contain sample legend content. Since these do not change frequently, the users might want to keep them on Layouts and skip the Worksheets.

Note: 'Drawings' as a term are usually referred to the drawing sheets, which are called 'Layouts' in ARCHICAD. The **M | DRAWING LIST index therefore lists the Layouts**, not the Drawings as it is called in ARCHICAD terms.

Master Layouts are available as references for:

- **A1 LANDSCAPE** - generic Layouts with a sample title block
- **A1 EMPTY** - generic Master Layouts for importing existing title blocks

Additional Master Layouts may be created according to the office standards. To **set a Master Layout as a default** for newly created Layouts:

- 1 Select the Master Layout.**
- 2 Right-click and choose Set as Default.**

Project Info

Project Information is accessible via **File/Info/Project Info**. Use the **Export.../Import...** buttons of the Project Info dialog to transfer project info between projects.

Project Info is referred to by *Autotexts*, which are also available for Layout and Drawing Information.

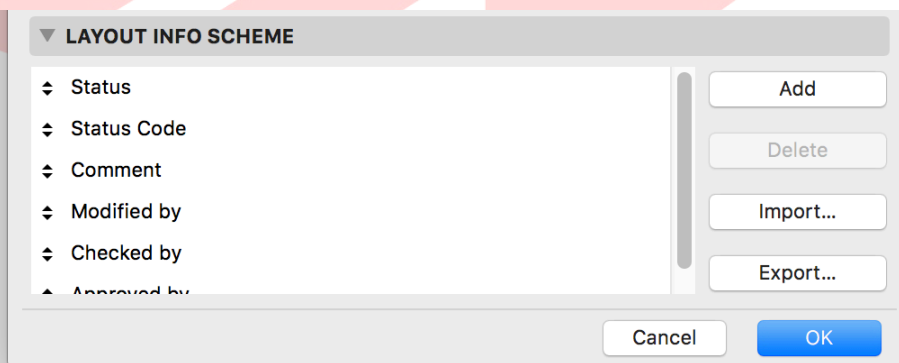
To add these, use the **Text tool** and the **Insert Autotext** icon to add different types of autotexts as part of regular textboxes.

The values of these autotexts can be defined in the Drawing Settings dialog or the Layout Settings.

- 1 **Select the Layout** in the Layout Book.
- 2 **Right-click and choose Layout Settings....**
- 3 **Add values** as needed under the Layout Info panel.

Custom information can be created to be listed under the Layout Info panel.

- 1 **Select the Layout Book** (the topmost item in the Navigator).
- 2 **Right-click and choose Book Settings....**
- 3 Add items as needed under the **Layout Info Scheme panel**. The new fields will be available for all Layouts.



Publisher

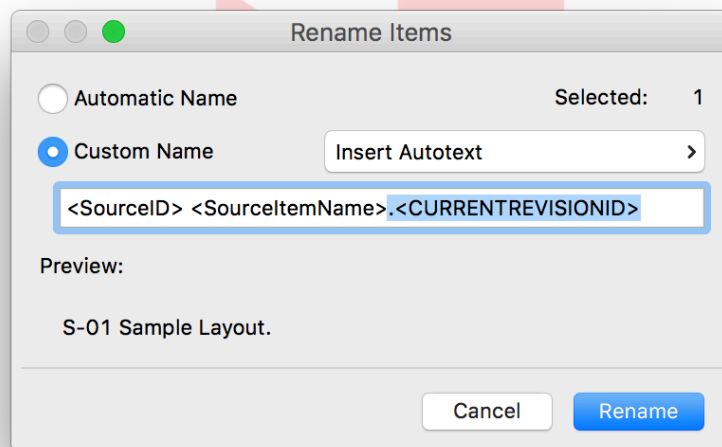
Publisher Sets have to be created manually. Once the Layout Book subsets are created, use the **Add Shortcut »»** button in the Organizer to create continuously updated content within the Publisher Sets.

The default Publisher Sets contain:

- **1 - Views** - the content of the View Map in PDF format
- **2 - Layouts (PDF)** - the content of the Layout Book in PDF format
- **M | Layouts (DWF)** - the content of the Layout Book in DWF format
- **M | Layouts (DWG)** - the content of the Layout Book in DWG format
- **M | Layouts (PRINT)** - the content of the Layout Book ready for printing
- **M | Module - All Storeys** - content of each storey saved into a module file for further linking
- **M | Module - All Storeys as One Module (Break Nested)** - content of all storeys saved into a single module file for further linking
- **M | Module - Typical Storey** - content of the typical storey saved into a module file for further linking
- **M | Ref. Model for Coordination (IFC)** - exports the 3D content with exact geometry conversion for clash detection/referencing in IFC format
- **M | Ref. Model for External MEP (IFC/DWG)** - exports the 3D content with 2D documentation for further use in Revit MEP in IFC and DWG formats respectively
- **M | Submission Layouts (PDF)** – all Layouts from the SUBMISSION Layout Book folder saved as PDF
- **M | Submission Views (PMK)** – all Views from the SUBMISSION View Map folder saved as PMK for linking into an external documentation file (large projects)
- **M | Tender Layouts (PDF)** – all Layouts from the TENDER Layout Book folder saved as PDF
- **M | Tender Views (PMK)** – all Views from the TENDER View Map folder saved as PMK for linking into an external documentation file (large projects)

The Publisher Set item names can also include Autotexts, such as codes, IDs, revision numbers, etc. Those custom fields that were created under the Layout Info Scheme can also be inserted.

- 1 **Select the item/folder/root folder** of the set.
- 2 **Right-click and choose Rename Items....**
- 3 Change to **Custom Name** radiobox.
- 4 **Add Autotexts from the Insert Autotext dropdown list.** Note, that the input field allows custom entries as well (for example project IDs can be used as prefixes - if not set as an autotext).



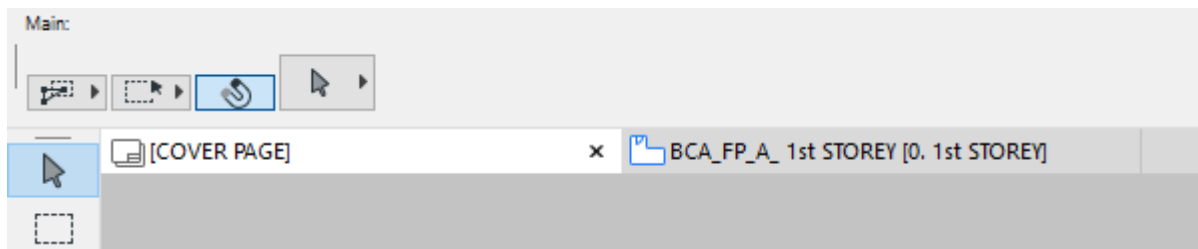
Find more details on **Revision Management** in general
at the GRAPHISOFT Help Center here:

<https://helpcenter.graphisoft.com/user-guide/77094/>

Submission File Format

Saving the files requires a specific naming format to define the following.

- 1 Make sure that all tabs except a floor plan of the project are closed and that the **COVER PAGE layout is opened** and **moved to the front**. This layout has to be the one that appears when the officers open the file.



Note: A floor plan viewpoint or view has to remain open, otherwise ARCHICAD will close the project.

- 2 Use **File/Save as...** menu command and save you file in one of the different formats.

- **BIM native file format and software version in a single file:**

ARCHICAD - **.pla**, **.pln** and/or **.mod**, version **23**, indicated in the file name, for example:

ABCDEF_S1_BLK01_ST01_**AC23**_RPP1_123456.**pla**

Note: PLA files include all library elements used in a project and make the file management easier for the submission, therefore it is highly recommended to use this format.

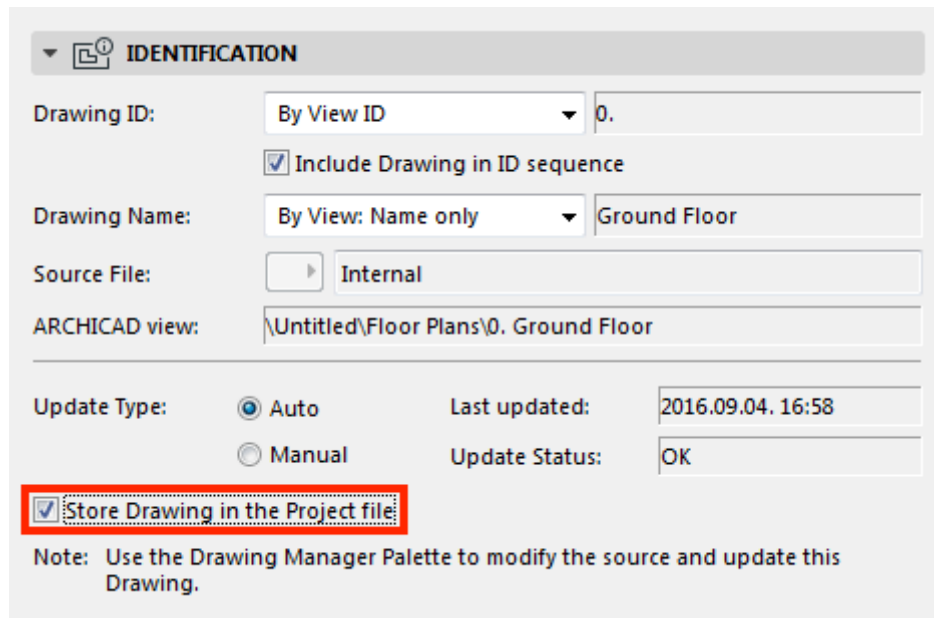
For file naming conventions for submission refer to COP in force:

Project ID							Author				Model Part							Submission Version						Software Version					Related ST					User Defined					
A	B	C	D	E	F	_	S	1	_	B	L	K	0	0	1	_	S	T	0	2	_	A	C	2	1	_	R	P	P	1	_	1	2	3	4	5	6		

Before submitting the file make sure all necessary views are set correctly and show the relevant information.

Make sure that all external references (2D drawings) are stored with the project file to ensure that the checking officers will see the same content as the QP.

- 1 Select the linked drawings and open their settings.
- 2 Check the **Store Drawing in the Project file** checkbox for each drawing.



The screenshot shows the 'IDENTIFICATION' panel in the ARCHICAD Drawing Manager. The panel contains the following fields and options:

- Drawing ID:** Set to 'By View ID' with a value of '0'.
- ☒ **Include Drawing in ID sequence**
- Drawing Name:** Set to 'By View: Name only' with a value of 'Ground Floor'.
- Source File:** Set to 'Internal'.
- ARCHICAD view:** Set to '\\Untitled\\Floor Plans\\0. Ground Floor'.
- Update Type:** Radio buttons for 'Auto' (selected) and 'Manual'.
- Last updated:** 2016.09.04, 16:58
- Update Status:** OK
- ☒ **Store Drawing in the Project file** (This checkbox is highlighted with a red box in the original image).

Note: Use the Drawing Manager Palette to modify the source and update this Drawing.

ACKNOWLEDGEMENT

Revision of the current template and guide done by GRAPHISOFT Singapore.

For any queries please contact:

GRAPHISOFT Singapore

152 Beach Road
#10-05 Gateway East
Singapore 189721

