

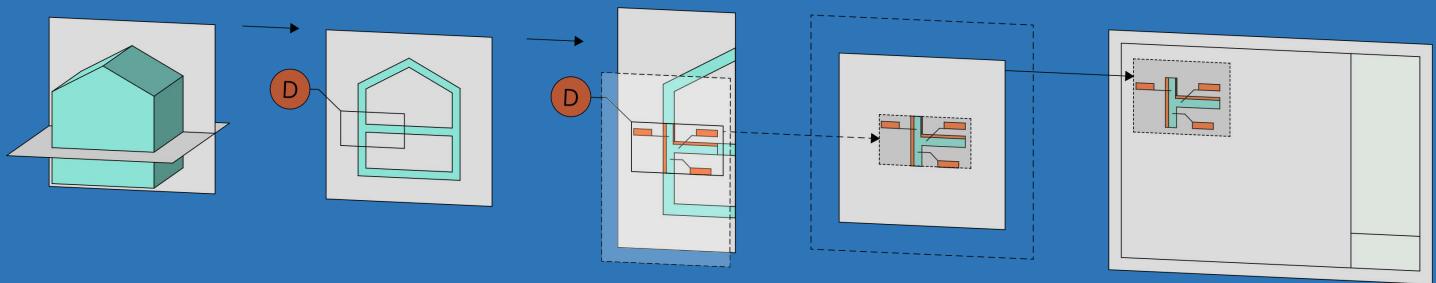
GRAPHISOFT WORKFLOW GUIDE SERIES

Detailing

Workflow Guide 2018/3

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The Workflow Guide Series are know-how documents providing solutions recommended for BIM workflows and project management-related challenges.

The Detailing Workflow Guide offers an overview of the different detailing workflows in ARCHICAD including summaries of advantages and disadvantages and a guidance for the best choice for each individual/project.

This document was created to support the efficiency of your work. If you have any feedback, please send it to helpcenter@graphisoft.com.



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Workflow Guide Series Detailing (International English Version)

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Although the building industry is heading towards information modeling, we recognize that traditional 2D-based documentation is still prevalent in current project documentation delivery. Creating and methodizing details of the building represents a major portion of a project documentation. This workflow guide elaborates on the different methods of detailing in ARCHICAD considering the currently available tools and possible workflows.

1. About Details

The primary purpose of a detail drawing is to illustrate the method of assembly of those elements of the building that cannot be adequately described by the general drawings or the specifications. Details can also be created if we want to isolate, present and even enlarge parts of the building so that we can add more information and descriptions to them. Details can show junctions of elements, specific elements, units or room types, to contribute to the project documentation or provide instructions for the building construction on site. Generally, there are **two main types of details**: details that describe a custom component, such as a handrail bracket, and details that describe how building elements relate to each other. The principles of creating a detail drawing in ARCHICAD apply equally to both types.

Although we will show ways to create 3D details, general understanding of the detail is to be a 2D drawing. For better coordination within the project file, as well as in the printed output, the detail drawings can have references to their positions in the model being marked on the project views where they are derived from, for example on a floor plan or a section. Detail drawings are part of the project documentation deliverables. Therefore, managing detail drawings and placing them onto layouts should be a part of the broader project strategy.

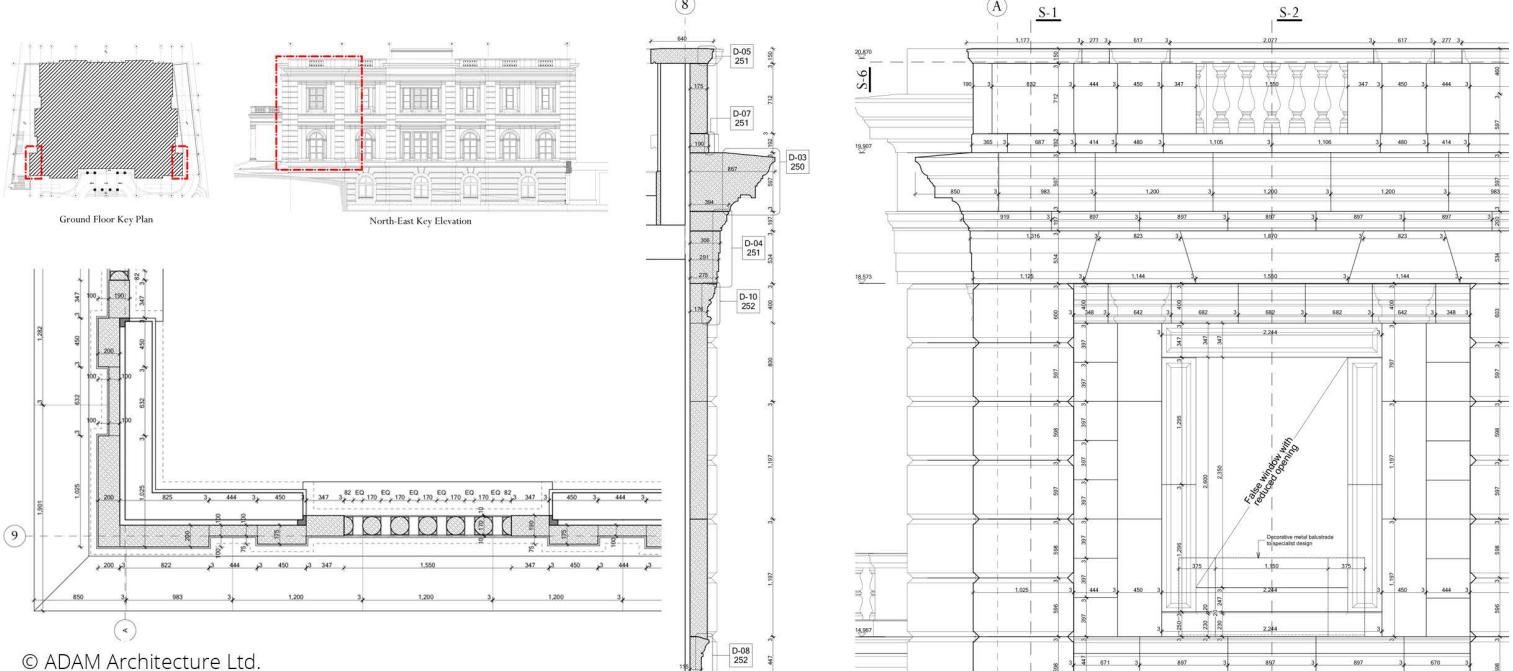


Image 1 - Detailing example fully modelled by ADAM Architecture

1.1 Detail methods

There are several methods for creating details. Considering that details are traditionally 2D drawings, the goal in detailing is to retain as much of the model data embedded in the model elements as possible.

This workflow guide covers the most popular workflows of detailing practiced widely among ARCHICAD users. Both model-based and 2D drawn detailing workflows are included with highlighted advantages and disadvantages for each workflow. They can be used for a **two-level detailing** process, which involves creation of a 1:20 detail (e.g. floor to floor section, cladding detailed floor plan, etc.), followed by a 1:10/1:5 interface/assembly detail (e.g. floor build-up detail, interface of cladding elements with structure, etc.).

Details can be created at any point during the project timeline, but most likely during the Design Development and Construction Documentation stages. At these stages, the model has usually reached a certain level of completion. Despite the state of the model development, we should always aim to regularly check the model for consistency, especially if the detailing workflow we decide to use retains a live relationship with the model. These checks should include management of building materials and layer priorities, which dictate element intersections and management of attributes, as well as settings that affect the display of elements in the views: layers and layer combinations, complex profiles, composites, pen sets, fill types.



[Read Help Center article \[1\] Element Intersections](#)

The efficiency of the detailing process depends highly on the development level of the model, on the project type and design workflow, the existing data and the users' skillset. Choosing the best detailing method depends greatly on what the priorities are among the goals:

- retaining model data in the details,
- reducing potential discrepancies between drawings,
- keeping file size within manageable limits, avoiding potential slow performance of the project as a result,
- drafting convenience, consistency and speed,
- assisting coordination amongst team members, by providing easy navigation through the project.

Choosing which method to use for the task at hand is often a compromise between the goals and available tools.

To better understand the detailing processes, we divided and cross-referenced the detailing methods in two ways:

- by the nature of the detail source;
- by the layout strategy.

The detail source can be the model itself, a detail from an office standard library or the manufacturer's documentation. Depending on the nature of its source, a detail drawing in ARCHICAD can be:

- Model-based
- 2D-based
- Standard detail

1.2 Methodology

Depending on the deliverables, applied standards and practices, there are different workflows presented in this document that we can choose from. To choose the best fit, we must consider these issues before starting the project:

- required project deliverables (model and documentation vs traditional 2D drawings),
- possibility to re-use typical details vs development of bespoke project details,
- project team's skills (ARCHICAD modeling vs 2D drafting skills),
- collaboration requirements (if there is any external team that will also work on the project),
- logical organization and sequencing of the details,
- time constraints and deadlines.

More questions may arise when we want to apply the most efficient workflow: How many sheets of details do we expect to produce? How long do we have to complete them? What input from others do we need upfront to meet the deadline and requirements? How should we group and arrange similar elements? Who do we need to provide information to and coordinate with (other team members, consultants and suppliers)?

There is no need to reinvent the wheel with detailing: avoid repetition of work and refer to similar details from previous projects; consult manufacturers for standard details.

The following **decision chart** illustrates the questioning process and should help us in making our choice from the start to determine which workflow suits our needs the best. Most of the time, the final detailing approach is more complex and will be a combination of several workflows, as a project usually includes several types of details from different sources that need to be approached in different ways. Therefore, we may use a similar questioning method to adjust to the complexity and nature of a project.

Although we can navigate directly from the diagram to the desired workflow explanation by clicking on the field with a method title, we should familiarize ourselves with the benefits and disadvantages of each workflow to understand the process better and work more efficiently with details.

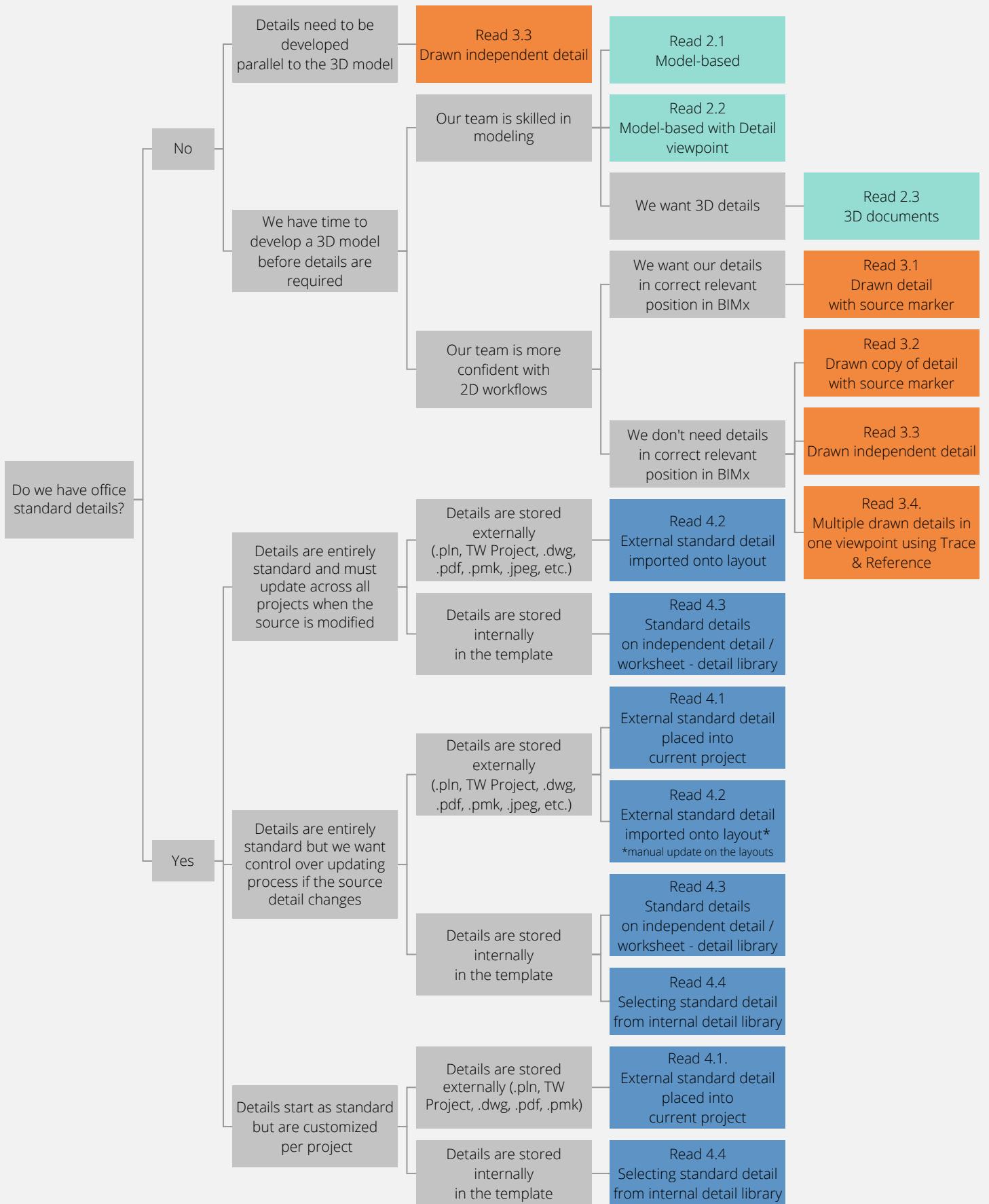


Image 2 - Detailing decision-making diagram

1.3 Tools for detailing

Several documentation tools for generating viewpoints of the model in ARCHICAD can be useful in the process of creating detail drawings: Section, Elevation, Interior Elevation, Worksheet, Detail tools, but also working with Floorplans and 3D Documents.



[Read Help Center article \[2\] Viewpoints in ARCHICAD](#)

ARCHICAD has a dedicated **Detail tool** in its documentation toolbox. By placing a detail marker on the project view, we can generate a detail drawing from the model. The detail viewpoint appears in the project map and consists of 2D elements only, which are transmuted from the BIM elements. We can rebuild the detail from its source view anytime based on any changes.



[Read Help Center article \[3\] Details](#)

To indicate which elements are displayed in a detail, **detail markers** are positioned on the floor plans, sections, elevations, interior elevations, 3D documents or worksheets. Although it is technically possible to place a detail marker even on another detail viewpoint, there are no useful use cases and we do not recommend it; some of ARCHICAD's functionalities might be limited in a detail generated from another detail.

A **detail marker** is a GDL object with many settings for its display on the project views and it can be customized. There are three types of detail markers and it is crucial to understand how they function:

- **Source** marker
- **Linked** marker
- **Unlinked** marker

Source marker generates the content from the model, unlike linked marker, which doesn't create a viewpoint content itself but can point at any viewpoint, view or drawing in ARCHICAD. Unlinked marker is just a marker element on the model view with no connection to any viewpoint or view of the project.

In addition to detail viewpoints automatically created with the placement of a detail marker, we can also create an **independent detail** with or without a marker in the model. An independent detail viewpoint is a blank working space where we can create our own content, paste or link external content.



[Read Help Center article \[4\] Create a Detail Drawing Viewpoint with Model Source](#)

The **source-based detail** drawing consists of only 2D lines and fills, including the 2D exploded representations of all construction elements inside the detail boundary of the marker. It is worth noting, that no element data is carried over from the model elements to their 2D representations in the detail viewpoint. All element properties will be lost except Renovation status, which remains. Building material is transferred to the [Cut fill - Building material](#) fill type, which retains physical properties information of the material.

To carry out generated detail drawing, we can enrich and embellish it by adding available 2D elements: lines, fills, hotspots, text, labels, figures, dimensions and 2D symbols from the object libraries.

To distinguish source-type detail markers on the screen, it is useful to use the relevant setting from the on-screen view options and highlight the source markers 'View/ On-Screen View Options/Highlight Source Markers'.

Placing **linked markers** means that, in the Detail Tool Settings, we must change the marker type to 'Place linked marker' and define to which viewpoint, view or drawing this marker will refer. That is why a linked marker doesn't generate a new viewpoint in the Project Map, compared to the source marker which does.

An **Unlinked marker** is simply a marker on a view. It does not generate a detail viewpoint in the Project Map and has no reference, so we can just add custom text to the marker of an external detail, for example.

An **Independent detail** always appears in the Project Map structure and always starts with an empty viewpoint. Unmarked independent details have no markers in the model and they are only represented by a drawing viewpoint, which can be opened from the Project Map in the Navigator. If we create an independent detail viewpoint and connect it to a linked marker in a model, it will become an **independent detail with Marker**, having the ability to navigate from the marker to the detail viewpoint and vice versa.

2. Model-based details

In the case of a well-developed and managed model, the ideal detailing workflow is to use the model to extract details with minimal 2D work involved. Although building a model for automatic extraction of details requires good modeling skills and a good understanding of BIM, a huge advantage of model-based detail over 2D is that we can utilize and display information built into the elements: properties, descriptions, classifications -- practically any non-graphical metadata. In model-based groups of detail workflows, one of the methods does not even use source marker detail to generate the detail, and we have an ARCHICAD-specific method of creating document-based 3D views of details with the help of 3D documents.

Three different model-based scenarios will be presented below:

1. Model-based,
2. Model-based with Detail viewpoint,
3. 3D Document.

2.1 Model-based

It is obvious that we cannot create model-generated details unless we develop a model to a certain level. The automatic way to obtain model-based details is to **use model-based views** (floor plans, sections, elevations, interior elevations). On these views, we can add more information related to the detail scale we are aiming for: additional 2D elements, labels, dimensions, text, etc. and those should be placed on a separate layer(s). These views will be placed on the layouts as cropped to fit the detail drawing area that we want to show. This workflow presents a '**live detail**' since any change made on the model is automatically reflected on the detail drawing on the layout.

To enable cross-referencing, we must place a linked detail marker with the Detail Tool on the amplified view that we used initially to derive the detail from. Make sure to use appropriate layers, to ensure the marker is shown on the general arrangement view and hidden on the amplified view. Using a linked detail marker will not create a separate detail viewpoint in the Project Map, but will give us the ability to link the marker to the placed detail drawing on the layout for ease of navigation. It will also ensure accurate navigation of the printed output.

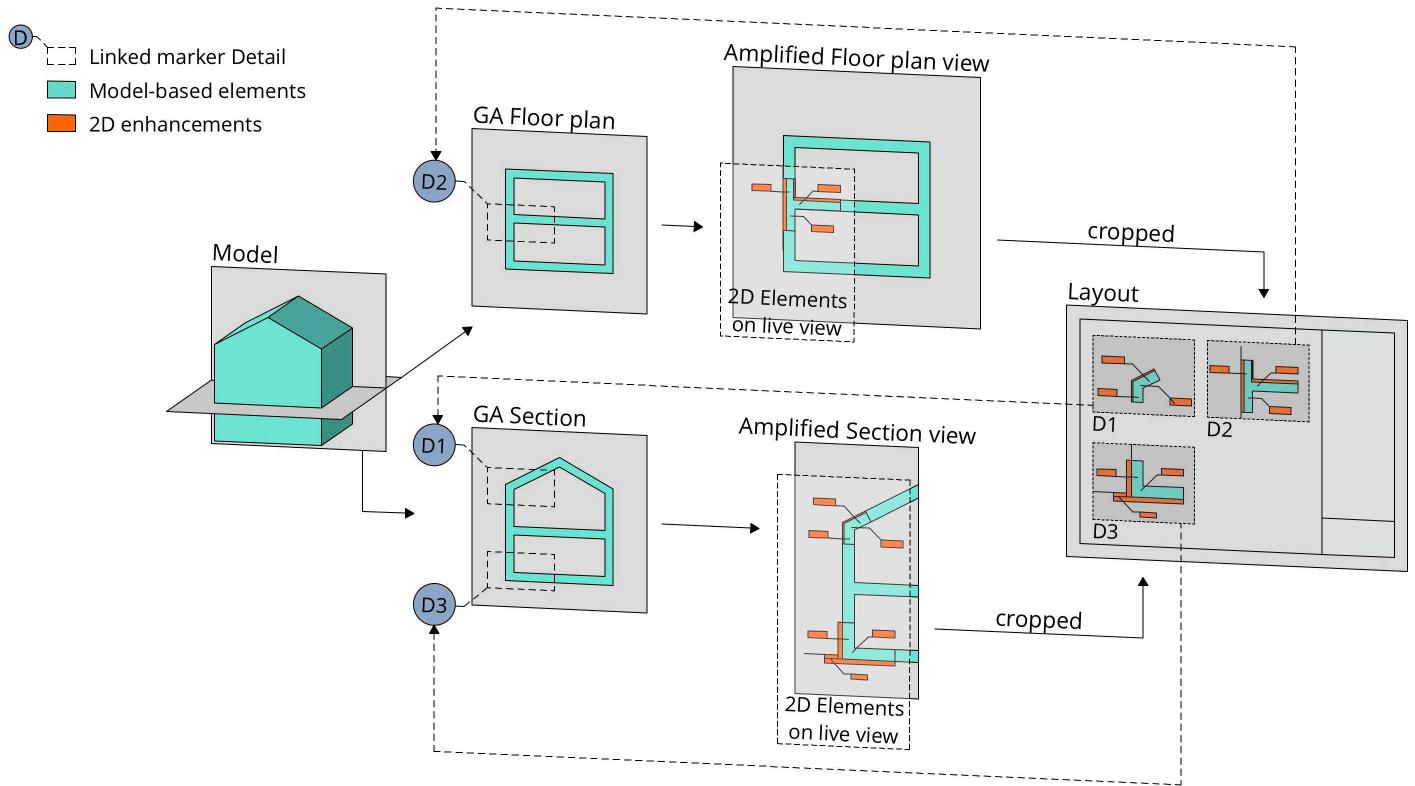


Image 3 - Model-based detailing workflow

Step 1 - In the first step, we must create a separate view from a high-level General Arrangement view, most commonly a floor plan or a section, with its corresponding settings (layer combination, scale, zoomed area into a specific part of the view) for the purpose of creating a detail – the ‘Amplified view’. We can keep a separate folder in the View Map for working with amplified views that are helping us create our details.

Step 2 - Here we can add additional information and enhance the graphic representation. Associative [labels](#) and dimensions are very useful to display more information about the elements and their properties. We can use other 2D elements for the detail scale level, which are rarely being modeled, such as: screws, membranes, etc. 2D elements from the ARCHICAD library can be handy here, too. We need to ensure that these elements are placed on the appropriate layers, which are not shown on the high-level general arrangement view from where the workflow starts.

Step 3 - A linked detail marker with the use of the Detail Tool needs to be placed on the high-level view that we started from. The detail marker should be placed on an appropriate layer, which is not shown in the generated detail drawing.

Step 4 - We can now place a clipped detail drawing onto a layout. It is also convenient to navigate back to the source view or to the detail marker position from the detail drawing on the layout, especially when corrections are needed.

If we have multiple details we want to display from the same source view (floor plan or section), it means we have to place the source view multiple times on the layout and resize the drawing area for each detail. Please note, that this can increase the size of the file,

especially the documentation part. However, keep in mind that the model-based detailing workflow is the only workflow that completely reflects model changes.

Despite being a ‘live-detail’ method and cross-referencing with a use of a linked marker works great in ARCHICAD, this workflow won’t provide a correct relevant position of the details in the BIMx 3D view. However, the detail drawings will be exported with layouts. More information in [BIMx](#) section.

Advantages	Disadvantages
<ul style="list-style-type: none">• All documentation is stored in the same file (unless another strategy is used to manage file sizes in large projects).• As the detail view has a live relation to the model, the detail always reflects any model changes.• All model information can be used as a basis for detail information.• Element properties can be queried (e.g. using Labels) at the detailing level.• Consistency among all views: floor plans, sections, elevations, details.• Convenient for transferring information between similar details, allowing for graphical consistency across the co-located details.• A detailed model means better ability to schedule information.• Less views in the View Map in the Navigator since we are not creating separate detail views.• Best suited for generating the first level (1:20) of details.	<ul style="list-style-type: none">• Every time there is a change in the model, we must update all the placed 2D elements on the details, too.• Additional layers and layer combinations are needed for elements visible only on the detailing scale.• Linked markers can be used, but drawings must be placed on a layout before they can be linked if the Detail drawing ID number is to be managed by automatic drawing numbering.• Solid white fills are sometimes required to hide information at the margins of the detail so that notes and dimensions can be added.• Placing cropped floor plan views on layouts increases the file size.• Details don’t have correct relevant position when exported in BIMx.• Generating both levels of details (1:20 and 1:5) using this method can become confusing.• Not ideal for generating 1:5 details, especially when these are standardized across the office and not project-specific.

2.2 Model-based with Detail viewpoint

One might wonder why the steps of the previously presented model-based workflow don’t include the use of the Detail Tool’s source marker when it is designed for this purpose. As we mentioned during the explanation of the Detail Tool, it turns 3D elements into 2D elements composed of fills and lines. This action loses ‘live detail’ characteristics to a large degree. However, the use of the detail tool brings other benefits to a workflow. For example, using the source marker of the detail tool to generate details in the project map is convenient for **organizing** the documentation, by numbering and **naming** the detail viewpoints.

As the detail tool doesn't generate details that have a bi-directional link to the model, any editing in the detail view would break the direct connection to the model. If we want to keep model-based documentation consistency, then all the changes should be made in the model-based source view (floor plan or section). Users must be made aware of the above, as navigating from the layout takes us to the detail view and it would feel natural for users to do the required editing there. Changes made in the detail view are difficult to track and should be avoided.

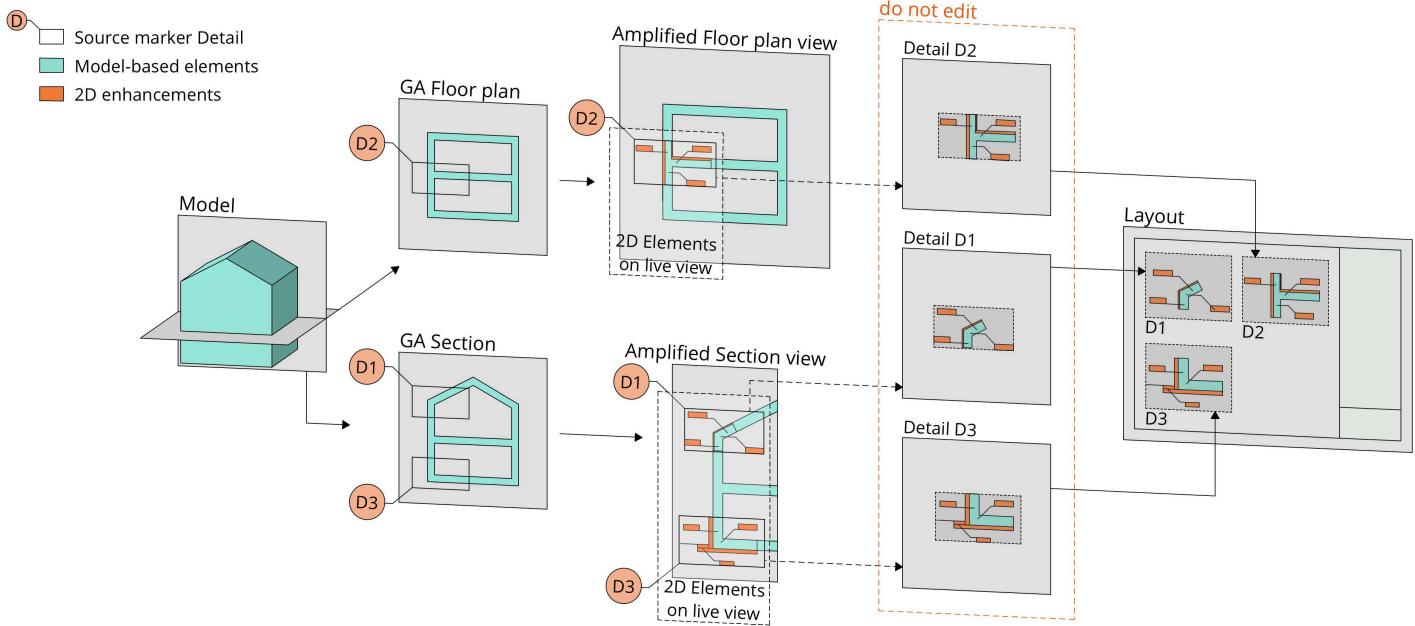


Image 4 - Model-based with Detail viewpoint detailing workflow

Step 1 - Similarly to the previously described workflow, we need a model-based view (most typically a floor plan or a section) with the appropriate settings – the 'Amplified view'.

Step 2 - In this dedicated view, we can add additional information and enhance the graphic representation. Associative [labels](#) and dimensions are useful to display more information about the elements and their properties. We can use other 2D elements to create elements for the detail scale level, which we rarely model, such as: screws, membranes, etc. 2D Elements from the ARCHICAD library can be handy here, too. We need to ensure that these elements are placed on the appropriate layers, which are not shown on the high-level general arrangement view that we started from.

Step 3 - We create a detail view by placing a source marker with the Detail Tool on the area we want to show in this view. To transfer all the 2D data we have placed on the source view into our detail view, make sure to untick the 'Copy construction elements only' option in the Detail Settings.

As described above, it is recommended to work on the dedicated source view when we want to add more data or make changes, but not in the final detail view. Also, make sure that the detail view is updated ([Rebuild from Source View](#)), when the source view updates have finished.

Step 4 - The Detail view is placed on the layout.

While this scenario still uses a model-based workflow to generate a detail, it suggests the use of a source marker of the Detail Tool, which would create a detail viewpoint in the Project Map, purely as a means of **managing file size** when placing the drawings on layouts and not as a means of developing the detail itself. While the development process of the detail information is the same as for previous, this workflow changes at the point of placing the drawing to a layout; instead of a cropped view, the detail view itself is placed on the layout.

Detail numbers are managed by drawing numbering, helping to reduce numbering errors on layouts consisting of details at mixed scales, if this is a strategy allowed by your office standards. Utilizing [naming](#) and numbering managed by the software enables us to use the automatic Drawing ID and Layout ID in the detail markers, reducing cross-referencing errors.

This workflow will provide a correct relevant position of the details in the [BIMx](#) 3D view.

Advantages	Disadvantages
<ul style="list-style-type: none"> As the source view of the generated detail still has a live relation to the model, the detail view will always reflect any model changes, as long as it is correctly rebuilt from the source view. All documentation is stored in the same file (unless a split model/layout book strategy is used to manage file sizes in large projects). All model information can be used as a basis for detail information. Element properties can be queried (e.g. using Labels) in the source view, not in the detail view. Consistency among all views: floor plans, sections, elevations, details. Convenient for transferring information between similar details, allowing for graphical consistency across the co-located details. A detailed model means better ability to schedule information. Easier management of details through naming and numbering. Easier navigation with the use of source markers, auto-referencing is possible. Smaller file size, as details are placed on layouts, not cropped views. Details have correct relevant positions when exported in BIMx. Best suited for generating the first level (1:20) of details. 	<ul style="list-style-type: none"> Anytime there is a change in the model, we must update all the placed 2D elements on the source views of the details, too. Details have to be updated to reflect the changes from the model source views. Additional layers and layer combinations are needed for elements visible only on the detailing scale. Solid white fills are sometimes required to hide information at the margins of the detail so that notes and dimensions can be added. Results in a larger Project Map tree, requiring a consistent and logically-structured naming convention to be adopted by the project. Generating both levels of details (1:20 and 1:5) using this method can become confusing. Not ideal for generating 1:5 details, especially when these are standardized across the office and not project-specific.

2.3 3D Documents

An appealing way of creating detail documentation based on the model is with the use of 3D Documents. Those are 3D-based but static documentation views, projected from a floor plan or a 3D window, which enable us to add dimensions, labels and graphical enhancements. This output is more descriptive and understandable for contractors, for example, than a standard 2D detail drawing; it can still be part of a standard documentation set. Please note, that with the help of associative [labels](#) and Autotexts, we can display any property built-in as element information. 3D Document-specific features are **hidden lines** of the elements that can be displayed, **shadows** and **any plane dimensions**.



[Read Help Center article \[5\] 3D Document](#)

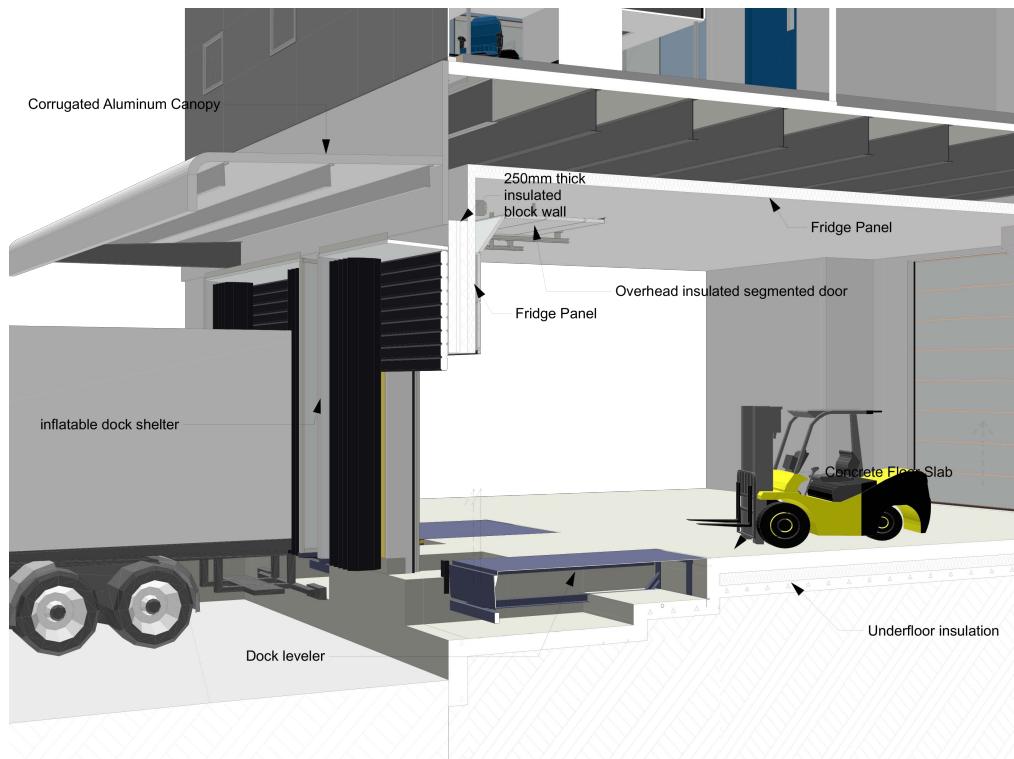


Image 5 - 3D Document-based detail - Kibsons International by architect Djordje Grujic

Step 1 - Isolate a section of the model in a 3D view (perspective or axonometric) or a floor plan using the cutting planes and/or Marquee Tool.

Step 2 - Create a 3D Document from that view. Apart from the settings inherited from the source view, we can additionally define the appearance of the 3D Document from within its own settings.

Step 3 - In 3D Documents, we can place associative [labels](#), dimensions, text or further embellish the document by adding images, fills and lines.

Step 4 - The 3D Document view can be placed on a layout in the same way as any other type of drawing.



[Read Help Center article \[6\] 3D Document Settings](#)



Image 6 - 3D Document-based detail by architect Jaime Ingram, for UHA SkyTower project



[Watch video 'Detailing in BIM with ARCHICAD' by architect Jaime Ingram.](#)

To avoid over modeling, we can model in detail only those parts of the model from where the 3D Documents will be saved. The main reason for this is to avoid large numbers of polygons and the performance slowdowns caused by them. Some users even use a separate ARCHICAD file for creating 3D models of details. Those can be used not only as a part of a documentation set, but for making animations, like fly-throughs and construction sequence animations, which we can use to communicate our design intent and construction techniques better, or simply to enrich our visualization material.

Advantages

- The 3D Document retains a live link to the model.
- All documentation is stored in the same file (unless another strategy is used to manage file sizes in large projects).
- All model information can be used as a basis for detail information.
- Element properties can be queried (e.g. using Labels) at the detailing level.
- Consistency among all views: floor plans, sections, elevations, details.
- A detailed model means better ability to schedule information.
- Easier management of details through naming and numbering.
- Best suited for very complex details that cannot be communicated in 2D.

Disadvantages

- Annotations from the source view cannot be transferred to a 3D Document.
- Potentially large file size.
- Requires advanced and specialized modeling skills.
- Can be time-consuming to transfer information between similar details to achieve consistency across the project.
- It's not cost effective for black and white printing.
- Details don't have correct relevant position when exported in BIMx.
- Cannot be used as a standard detailing workflow throughout an entire project.

3. Drawn details

2D detailing in its traditional delivery method may seem old-fashioned but can be more efficient in many project scenarios: if the details are complex or contain a lot of detail parts; if we want to retain development of a model to a very basic level; if the detail is standardized and won't be affected by the changes in the project development. Model and model-based views can serve as references for the 2D detail creation. However, the biggest disadvantage of this method is the manual update of the details when revisions are made in the project.

The 2D-based detail workflows in ARCHICAD imply creation of details that consist of 2D elements - mainly lines, fills, dimensions and labels. Whether we generate a detail viewpoint by placing a source detail marker on a project view or the workflow starts with creating an independent detail viewpoint where we draw our detail from scratch, we offer four drawn detail workflows in this section:

1. Drawn detail with source marker
2. Drawn copy of detail with source marker
3. Drawn independent detail
4. Multiple drawn details in one viewpoint using Trace & Reference

3.1 Drawn detail with source marker

A drawn detail, simply put, is a detail drawn with the help of **2D tools** and **elements**. We can start by placing a source detail marker on a view (i.e. floor plan or section) that generates 2D content in a detail viewpoint, then additionally enhance and develop the content.

If we use the '[Rebuild from Source view](#)' option to update the detail to reflect model changes, a pop-up message might appear where associative enhancements added to the generated 2D content, like associative dimensions or Autotext [labels](#), must be changed to static or be erased. Losing data is the real danger in the rebuild of the detail process. That is why some users won't rebuild from the source view, keeping their details exclusively manual. Naturally, in this case, [Trace & Reference](#) functionality helps a lot to reference model changes.

Consequently, due to project revisions and rebuilds of the detail drawing, common practice is not to use generated 2D content but to draw a detail from scratch. Some users keep generated content, but they lock generated 2D elements or make invisible those layers containing generated 2D detail content, by creating an appropriate layer combination. Please note that turning off the visibility of some layers will make invisible the elements belonging to the same layers in the reference view while [Trace & Reference](#) is on.

Completely erasing the generated content and creating a detail in an empty viewpoint using Trace & Reference is frequently used.

One might ask: Why should we use **source detail marker** at all if we want to manually draw a 2D detail? The biggest advantage of starting this workflow with a source detail marker is that those details will have a correct relevant position in [BIMx](#) models.

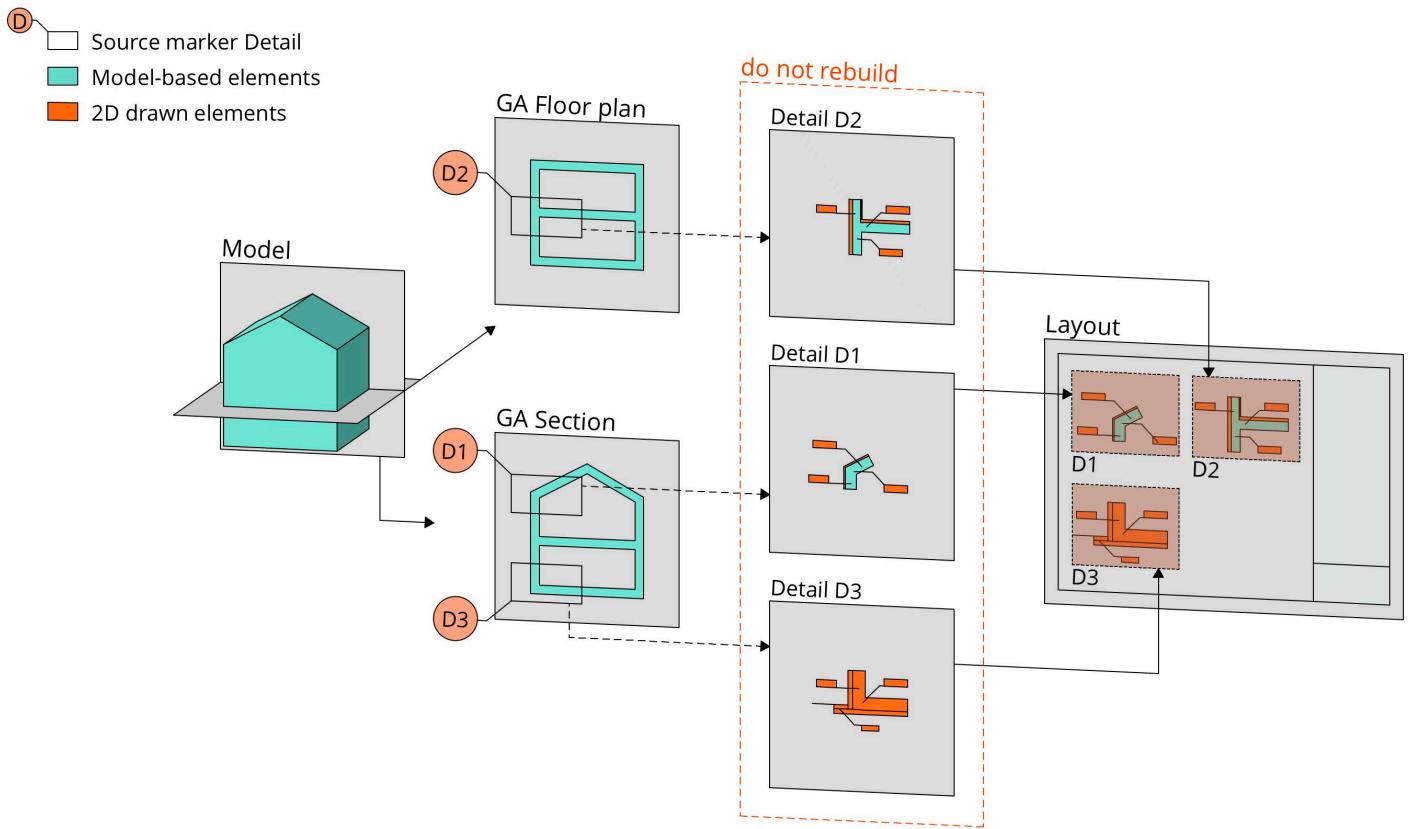


Image 7 - Drawn detail with source marker detailing workflow

Step 1 - Place a source detail marker (Marker type: 'Create a new detail viewpoint') on a view of choice.

Step 2 - The detail viewpoint is generated with 2D content. We can continue working on the generated 2D content and draw additional 2D elements but be aware that we mustn't [rebuild detail viewpoint from the source](#)! It is important to make sure associative elements (dimensions and [labels](#)) won't be transformed to static or erased as we might lose lots of data invested in building the detail.

Alternatively, we can erase the entire generated content and ensure a clean start from scratch, drawing the detail manually. [Trace & Reference](#) can help us draw the detail with 2D elements (lines, fills, dimensions, labels, etc.)

Step 3 - Place the detail view onto a layout.

Advantages	Disadvantages
<ul style="list-style-type: none"> Referencing between detail markers and detail drawings makes navigation easy. Easier management of details through naming and numbering. All documentation is stored in the same file (unless another strategy is used to manage file sizes in large projects). Models can be more basic and developed much faster without detailed modeling of junctions and specific elements. Easier navigation with the use of source markers, auto-referencing is possible. The number of polygons in the model is lower. We can engage the team members with less modeling skills for the detail creation. We can copy elements from other details. Use of Trace & reference is convenient to maintain relationship with model views. No additional layers and layer combinations are necessary for separating detail enhancement elements. Smaller file size, as details are placed on layouts, not cropped views. Details have correct relevant positions when exported in BIMx. Best suited for generating the second level (e.g. 1:5) of details. 	<ul style="list-style-type: none"> Additional layers and layer combinations are needed for locking or making elements generated from the source view invisible. Only some parts of the model information can be used as a basis for the detail. Details don't have a live connection to the model. They must be manually updated to reflect changes from the model. Everything becomes 2D elements so model element information is not available and associative labels cannot be used effectively. Can be time-consuming to transfer information between similar details to achieve consistency across the project. Time consuming if there are a lot of changes in the project. Results in a larger Project Map tree, requiring a consistent and logically-structured naming convention to be adopted by the project. We need to keep track of the model and the details' consistency. Not ideal for generating 1:20 details, as most of the time these are project-specific and heavily depend on the model content and updates.

3.2 Drawn copy of detail with source marker

This method starts the same as previously described: we place a source detail marker to generate 2D content in a detail viewpoint. Detail will be drawn with the help of 2D elements like fills, lines, dimensions, labels, etc.

It is recommended that the generated 2D elements in the detail viewpoint are left untouched and that they are copied to the right side to create an **editable version** of the detail. This ensures that when the detail viewpoint will be [rebuilt from the source view](#), no additional 2D work we have done will be lost in the editable version. We can still use [Trace & Reference](#) to compare the editable version with the original version at the time of the updates.

Updating 2D-based details is the biggest flaw in this detailing workflow. Changes cannot be tracked easily, and details must be updated manually.

Although we use a source detail marker, due to copying, detail content is shifted relative to the correct relevant position of the detail in the [BIMx](#) model.

Copying the original detail content is a good workflow for **detail variations** (e.g. same cladding type, different floor finish, which are shown in several variations of the same detail).

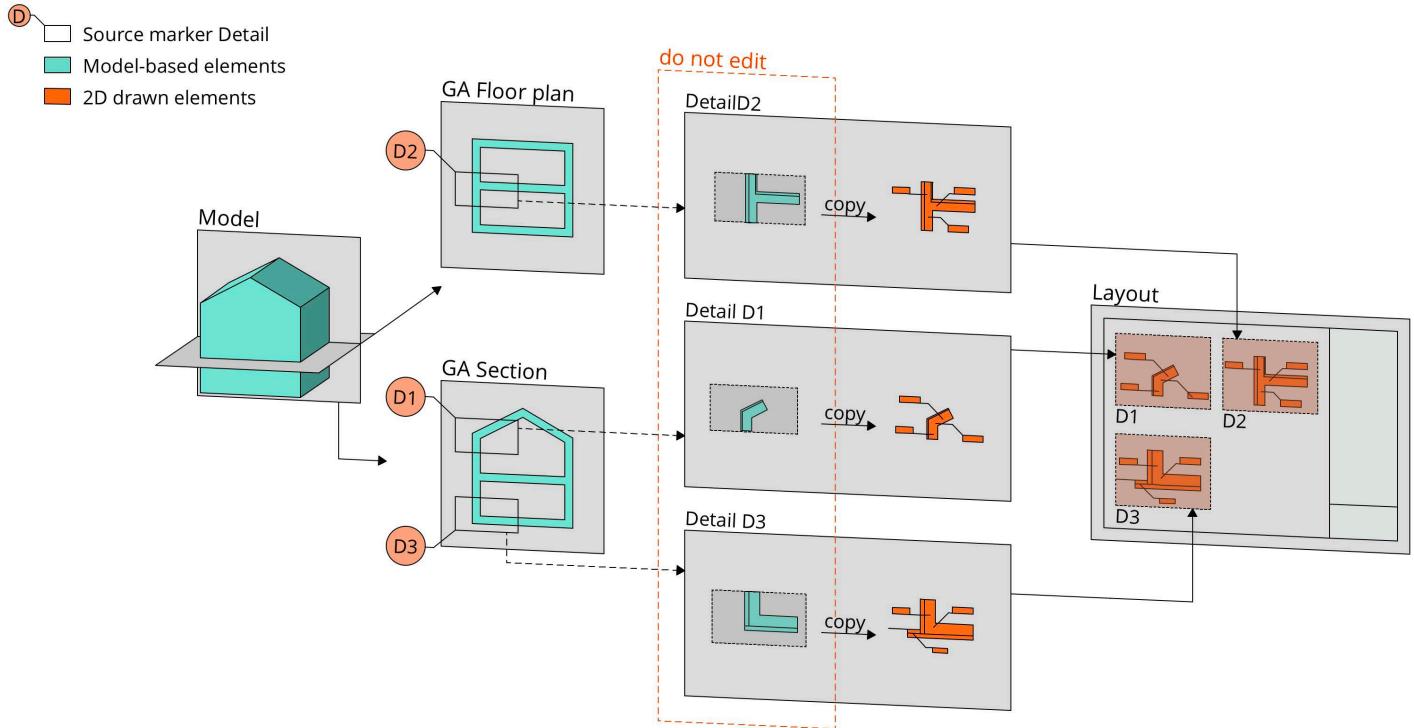


Image 8 - Drawn copy of detail with source marker detailing workflow

Step 1 - Place a source detail marker (Marker type: 'Create a new detail viewpoint') on a view of choice.

Step 2 - The detail viewpoint is generated with the 2D content from a source view. Before any editing and copying takes place, it is useful to [consolidate the lines and fills](#) of the detail drawing to erase duplicate elements and clean up the drawing. After that, it is good practice to copy the generated content to the right side, which we can edit, add more elements and annotations (dimensions, [labels](#), etc.) to complete the detail.

Step 3 - Place the detail view onto a layout.

If the model changes, we can import the changes into a detail viewpoint by choosing the '[Rebuild from Source View](#)' option from the context menu (right-click an empty area of the detail view). If we have copied the original content and used the copy to develop our detail, the rebuild process should only affect the original content. If not, any associative annotations placed on the original content may lose their associativity or get deleted.

To break the connection of a detail with the model altogether and eliminate the option of rebuilding the detail, we can **change the detail marker** type from source to a linked marker that will refer to the same detail viewpoint. This can be achieved from the Detail Settings.

Once the marker type is changed to linked marker, ARCHICAD will offer us a list of Project Map, View Map and Layout Map items, to connect the marker to. Once done, the detail item in the Project Map will be tagged as '**Independent with Marker**', instead of '**Drawing**', which are the tags to differentiate a detail with a linked marker from a detail with a source marker respectively. Changing any source detail marker to a linked one will result in detail not displaying its correct relevant position in [BIMx](#).

Advantages	Disadvantages
<ul style="list-style-type: none"> • Referencing between detail markers and detail drawings makes navigation easy. • Easier management of details through naming and numbering. • All documentation is stored in the same file (unless another strategy is used to manage file sizes in large projects). • Models can be more basic and developed much faster without detailed modeling of junctions and specific elements. • Easier navigation with the use of source markers, auto-referencing is possible. • The number of polygons in the model is lower. • We can engage the team members with less modeling skills for the detail creation. • We can copy elements from other details. • Use of Trace & reference is convenient to maintain relationship with model views. • No additional layers and layer combinations are necessary for separating detail enhancement elements. • Smaller file size, as details are placed on layouts, not cropped views. • Best suited for generating the second level (e.g. 1:5) of details. 	<ul style="list-style-type: none"> • Only some parts of the model information can be used as a basis for the detail. • Details don't have a live connection to the model. They must be manually updated to reflect changes from the model. • Everything becomes 2D elements so model element information is not available and associative labels cannot be used. • Can be time-consuming to transfer information between similar details to achieve consistency across the project. • Time consuming if there are a lot of changes in the project. • Results in a larger Project Map tree, requiring a consistent and logically-structured naming convention to be adopted by the project. • We need to keep track of the model and the details' consistency. • Details don't have correct relevant position when exported in BIMx. • Not ideal for generating 1:20 details, as most of the time these are project-specific, and they heavily depend on the model content and updates.

3.3 Drawn independent detail

Drawn independent detail method presents creating a detail manually from scratch, which means we have no use of model element information in a detail view. This workflow greatly resembles traditional way of 2D drawing where we start from an empty working view using lines and fills. The big difference is making use of [Trace & Reference](#) functionality, where we can reference model views anytime.

Starting from an **independent detail view** is suitable workflow for those users who want to create details the simplest way and eliminate the possibility of undesired changes by [rebuilding from the model source](#).

An independent detail viewpoint can be linked to a detail marker at any time. All we must do is place a **linked marker** type onto a preferred model view location that will refer to this independent detail viewpoint. This will cross-reference our independent detail viewpoints with details' locations in the model and make navigation throughout the project easier. Placed linked detail markers will open detail drawings on the layouts in [BIMx](#) as well. However, correct relevant positions of the details won't be shown in the 3D view.

Manually drawn details require manual changes during revisions.

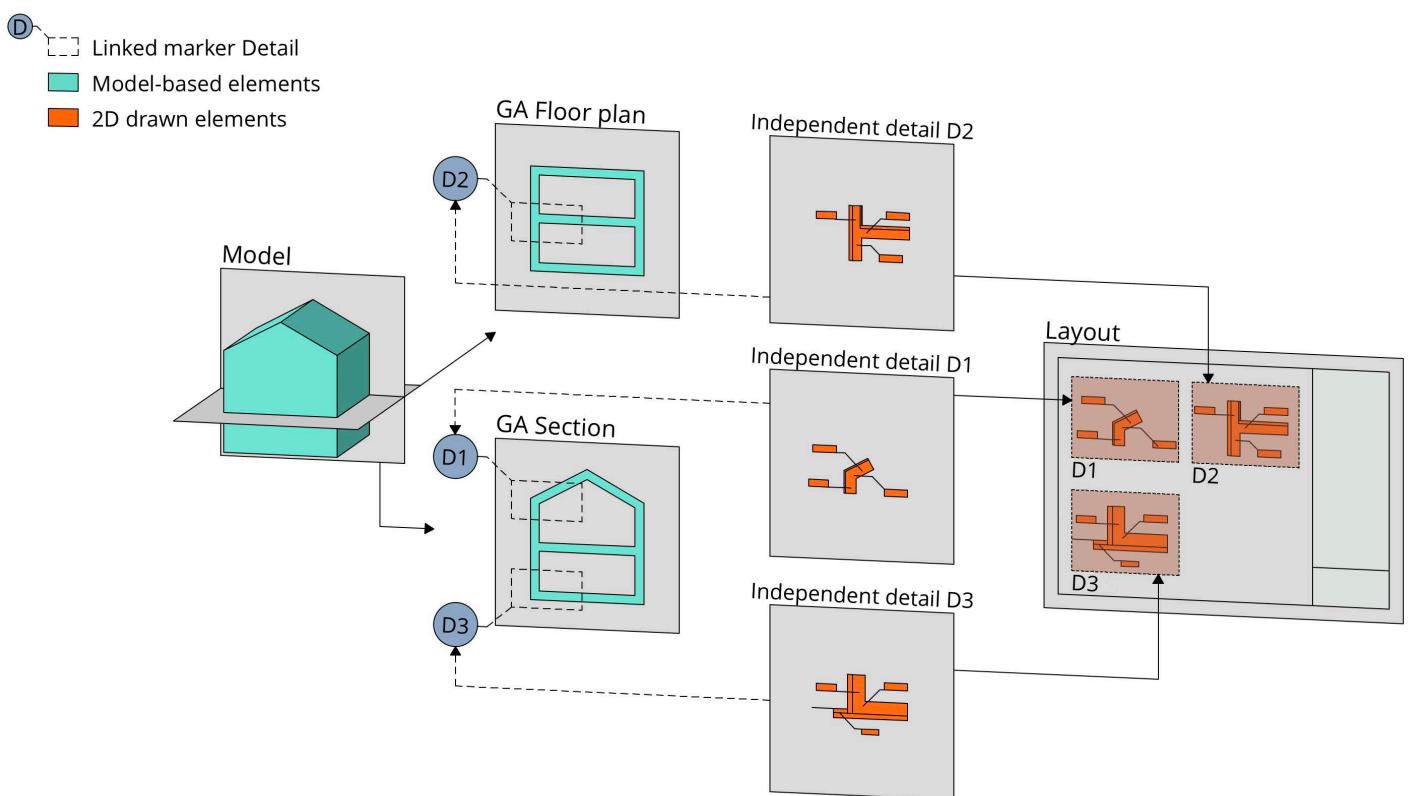


Image 9 - Drawn independent detail detailing workflow

Step 1 - Create an independent detail viewpoint.

Step 2 - Draw a detail using available 2D document tools. [Trace & Reference](#) option can be handy to reference the model views if needed.

Step 3 - Place linked marker with the use of the detail tool on the model view and link it to the independent detail viewpoint.

Step 4 - Place the detail onto a layout.

Advantages	Disadvantages
<ul style="list-style-type: none">Referencing between detail markers and detail drawings makes navigation easy.Easier management of details through naming and numbering.All documentation is stored in the same file (unless another strategy is used to manage file sizes in large projects).Models can be more basic and developed much faster without detailed modeling of junctions and specific elements.The number of polygons in the model is lower.We can engage the team members with less modeling skills for the detail creation.We can copy elements from other details or bring external content into our file.Details created this way can easily be included as part of a standard detail library.No additional layers and layer combinations are necessary for separating detail enhancement elements.Smaller file size, as details are placed on layouts, not cropped views.Best suited for generating the second level (e.g. 1:5) of details.	<ul style="list-style-type: none">Only some parts of the model information can be used as a basis for the detail.Details don't have a live connection to the model. They must be manually updated to reflect changes from the model.Everything becomes 2D elements, so model element information is not available and associative labels cannot be used.Can be time-consuming to transfer information between similar details to achieve graphical consistency across the project.Time consuming if there are a lot of changes in the project.The information we add to the detail cannot be viewed in the main model views, as the link is not bi-directional and there is no connection to other views (e.g. sections, elevations).We need to keep track of the model and the details' consistency.Might result in a larger Project Map tree, requiring a consistent and logically-structured naming convention to be adopted by the project.Details don't have correct relevant position when exported in BIMx.Not ideal for generating 1:20 details, as most of the time these are project-specific, and they heavily depend on the model content and updates.

3.4 Multiple drawn details in one viewpoint using Trace & Reference

Details are drawn with a correct relationship to the model with a help of the [Trace & Reference](#) function, but in the same independent detail viewpoint. For example, all floor plan details on a single story are detailed in their correct locations on the plan but done so in a single independent detail window. Each of these are then added as a cropped view to the layout book.

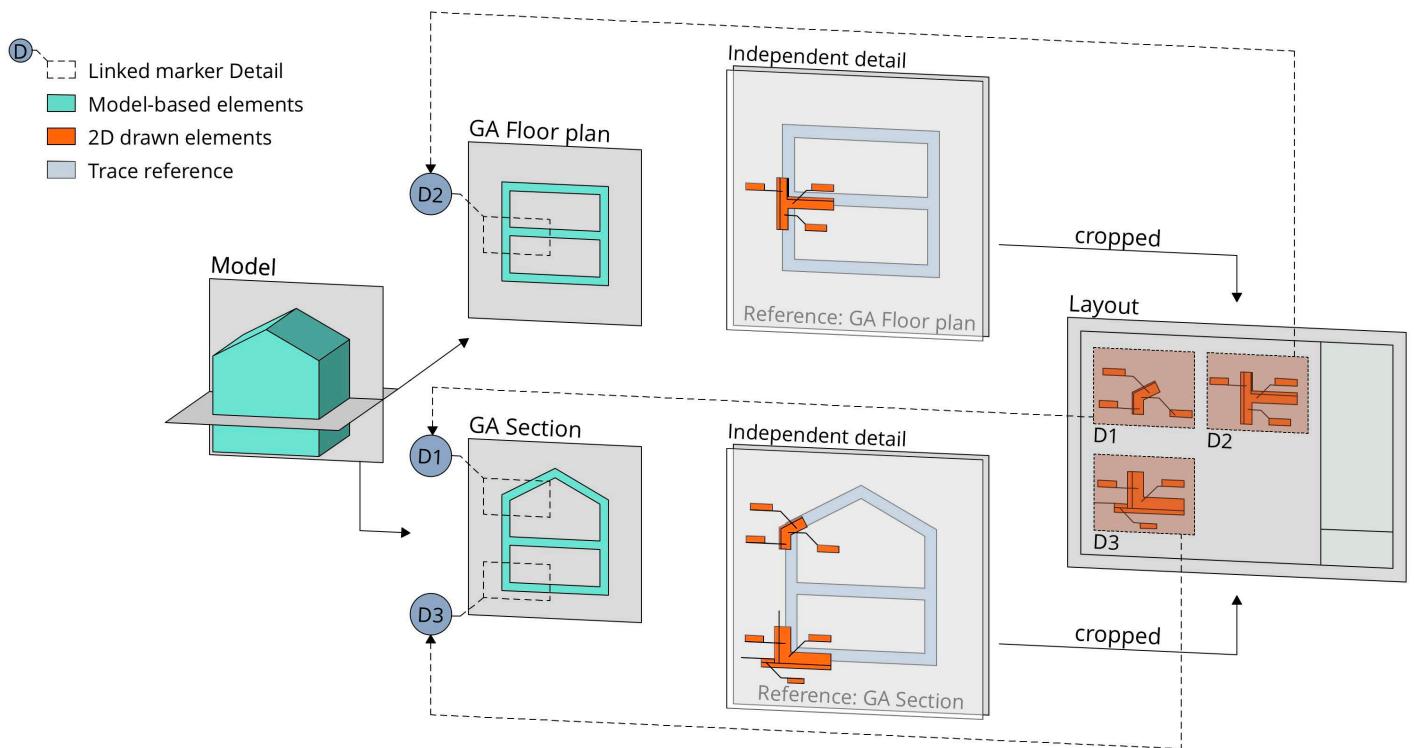


Image 10 - Multiple drawn details in one viewpoint using Trace & Reference detailing workflow

Step 1 - Create an independent detail viewpoint.

Step 2 - Activate [Trace & Reference](#) of one model view (e.g. a floor plan, a section, etc.) and draw all relevant details in that project region, using the available 2D document tools (i.e. lines, fills, labels, etc.). We can also copy the content from the source view and paste it to the relevant position in the detail view with the help of Trace & Reference functionality.

Step 3 - Place the cropped detail drawings onto layouts.

Step 4 - Place linked marker with the use of the detail tool on the model view and link it to the placed cropped drawing on the layout.

Advantages

- All documentation is stored in the same file (unless another strategy is used to manage file sizes in large projects).
- Models can be more basic and developed much faster without detailed modeling of junctions and specific elements.
- The number of polygons in the model is lower.
- We can engage the team members with less modeling skills for the detail creation.
- Less time-consuming to transfer information between similar details, allowing for good graphical consistency across the co-located details.
- We can copy elements from other details.
- Use of Trace & reference is convenient to maintain relationship with model views.
- Quicker and easier to edit similar elements on separate details.
- No additional layers and layer combinations are necessary for separating detail enhancement elements.
- Organization of manually drawn details is easier with correct details' positions.
- Less number of detail views needed for detail development.
- Best suited for generating the second level (e.g. 1:5) of details.

Disadvantages

- Details don't have a live connection to the model. They must be manually updated to reflect changes from the model.
- Everything becomes 2D elements, so model element information is not available and associative labels cannot be used.
- Detail markers cannot easily be used to navigate the project. Linked markers can be used but must be linked to drawings and not views. This means that drawings must be placed on a layout before they can be linked if the Detail ID number is to be managed by automatic drawing numbering.
- Time consuming if there are a lot of changes in the project.
- The information we add to the detail cannot be viewed in the main model views, as the link is not bi-directional and there is no connection to other views (e.g. sections, elevations).
- We need to keep track of the model and the details' consistency.
- Placing cropped views on layouts increases the file size.
- Details don't have correct relevant position when exported in BIMx.

4. Standard details

In this section we will present detailing methods that are used when we have standard details or when details are provided from the manufacturers of the construction materials and elements. Using standard details throughout multiple projects can save us a lot of time. Prefabricated construction housing projects are a perfect example.

Many manufacturers provide standard details, most commonly in .pdf or .dwg file formats. These can be imported or linked into ARCHICAD as [external drawings](#) or hotlinks and can be placed onto layouts with other drawings to form a project documentation set.

Some users keep standard details in a separate ARCHICAD file in the form of a detail library and import or link required detail drawings into their live projects. **Detail library** can be kept inside of an office template as well.

Standard details section contains four detailing methods:

1. External standard detail placed into current project
2. External standard detail imported onto layout
3. Standard details on independent detail/worksheet – detail library
4. Selecting standard detail from internal detail library

4.1 External standard detail placed into current project

This method is convenient when we have ready-made standard details as external sources. These details could be in .pdf or .dwg format, standard 2D details, or a part of a separate ARCHICAD file library. Because we create independent detail viewpoints to import [external drawings](#), this method is convenient if we want to do customization of the details or simply embellish them.

Choosing standard details for the project can be done even at early project stages, regardless of the model development phase; later, we can reference the detail position with the help of a linked detail marker.

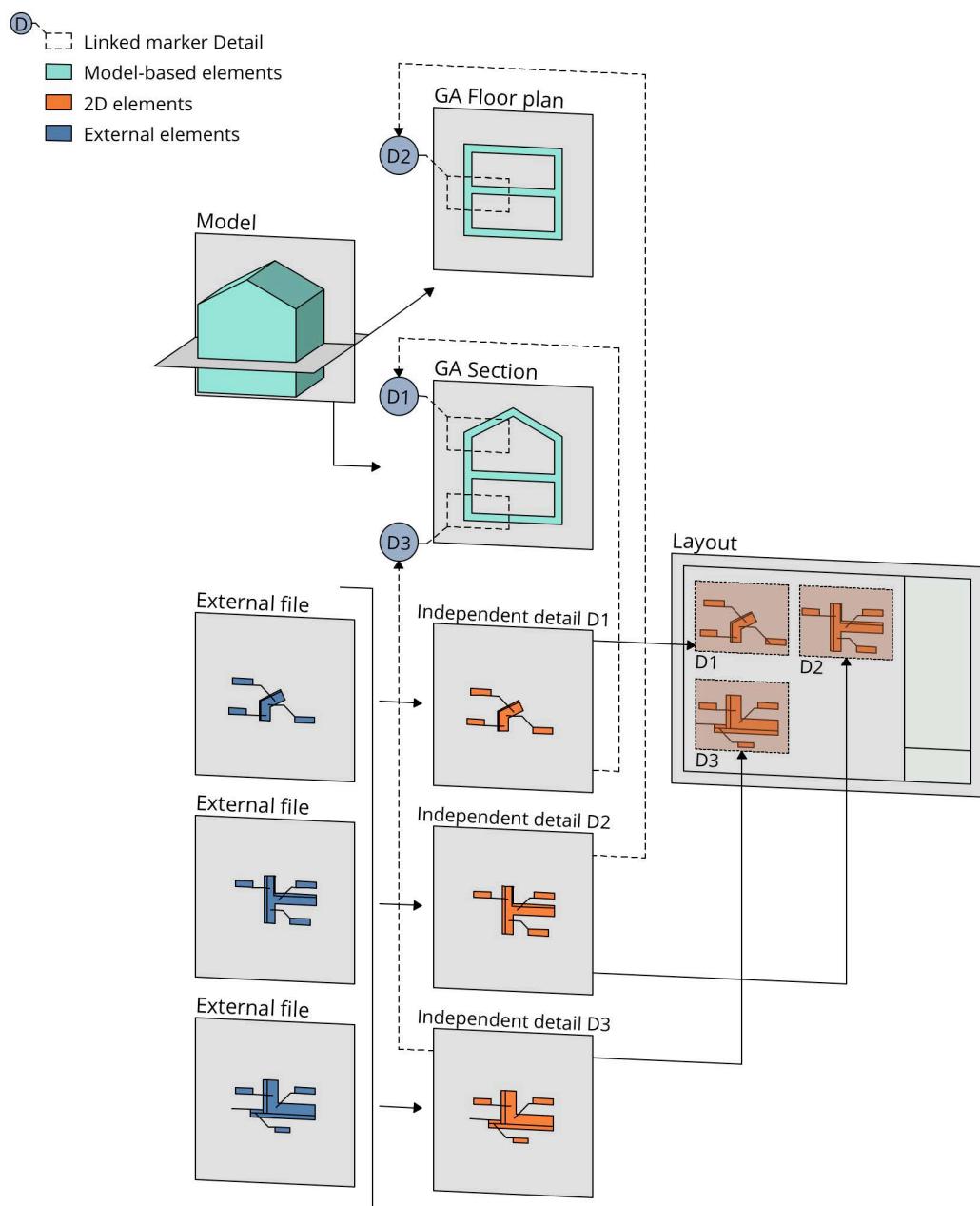


Image 11 - External standard detail placed into current project detailing workflow

Step 1 - Unless we want to place an external drawing directly onto a layout, an independent detail must first be created.

Step 2 - Place a chosen detail that we picked as an [external drawing](#) (.pdf, .dwg, .pmk, etc.) or a hotlink (.mod, .ifc, .2dl, etc.) inside the detail viewpoint.

Step 3 - We can keep an external detail drawing as is or add more information and details to it. To adjust the external detail to project specifics, we can even explode it to 2D elements and customize the content. [Trace & Reference](#) can be activated in the detail viewpoint if we wish to develop the detail further in line with our model.

Step 4 - With the detail tool, place a linked marker on a project view that will refer to this newly created independent detail viewpoint. We have now created a linked detail with a reference to the actual detail position in the model.

When bringing in any [external content](#), we must be aware of the attribute management between a source and a current project. Exploding the content of a (.dwg, .ifc) drawing can bring attributes (layers, pens, fills, etc.) from the external file. Good practice would be to explode the external drawing in a separate ARCHICAD file, organize its attributes to our liking, and then import it to our main project file.

Advantages	Disadvantages
<ul style="list-style-type: none">• Less time-consuming. Only requires the initial time investment to develop the detail library. Information can be reused between projects.• Linked markers can be used, makes navigation through the project easier.• Easier management of details through naming and numbering.• Documentation can still be stored in the same file if we embed external drawings into current project.• Models can be more basic and developed much faster without detailed modeling of junctions and specific elements.• The number of polygons in the model is lower.• We can engage the team members with less modeling skills for the detail creation.• Ready-made details can be used in the original state; no additional manpower is needed for their creation.• No additional layers and layer combinations are necessary for detail enhancement elements.• Smaller file size, as details are placed on layouts, not cropped views.• Usually, standardized detail content is not affected by model changes and updates.• Best suited for generating the second level (e.g. 1:5) of details.	<ul style="list-style-type: none">• A detail library needs constant management, maintenance and updates.• Details don't have a live connection to the model. They must be manually updated to reflect changes from the model.• Everything becomes 2D elements, so model element information is not available and associative labels cannot be used.• If we are exploding the content of the external detail drawings, additional layers and/or attributes may be added to the project.• If we are hotlinking external detail drawings, managing of hotlink files and their connections to the host project is required. Additional layers might be needed; unwanted attributes may be added to our project.• The information we add to the detail cannot be viewed in the main model views, as the link is not bi-directional and there is no connection to other views (e.g. sections, elevations).• We need to keep track of the model and the details' consistency.• Details don't have correct relevant position when exported in BIMx.• Not ideal for generating 1:20 details, as most of the time these are project-specific, and they heavily depend on the model content and updates.

4.2 External standard detail imported onto layout

This method is most commonly used when we keep our details in a **separate ARCHICAD file** and want to import a detail view into the current project. However, the same steps can be applied if we want to place **external drawings** (for example .pdf files) directly onto a layout without creating additional views in the current ARCHICAD project. Choosing standard details for the project with this method can be done even at early project stages, regardless of the model development phase.

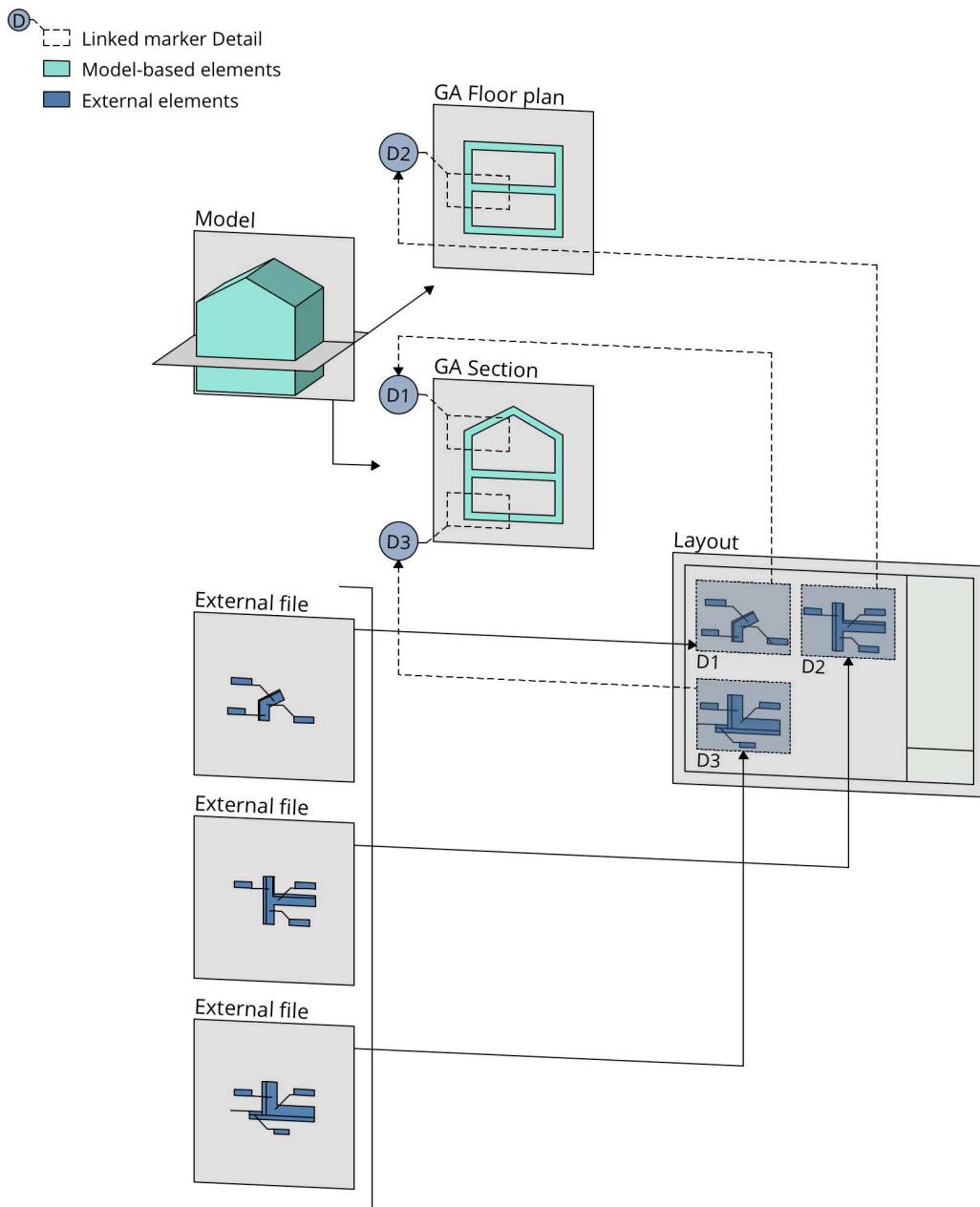


Image 12 - External standard detail imported onto layout detailing workflow

Step 1 - Open the ARCHICAD file that hosts the detail library to select the desired detail.

Step 2 - With the help of the Organizer, we can more easily choose a detail view from the external ARCHICAD detail library file and import it to a layout book into a current project.

Step 3 - It is recommended to place a linked detail marker in the project view that will refer to the external detail drawing placed onto a layout. This way, we will cross-reference the detail drawing with a detail position in the model.

Advantages	Disadvantages
<ul style="list-style-type: none">• Less time-consuming. Only requires the initial time investment to develop the detail library. Information can be reused between projects.• Linked markers can be used, makes navigation through the project easier.• Models can be more basic and developed much faster without detailed modeling of junctions and specific elements.• The number of polygons in the model is lower.• Ready-made details can be used in the original state; no additional manpower is needed for their creation.• No additional layers and layer combinations are necessary for separating detail enhancement elements.• Usually, standardized detail content is not affected by model changes and updates.• Less views in the View Map in the Navigator since we are not creating separate detail views.• Can be used with the ARCHICAD Drawing title. Drawing ID numbers can be automatically inserted by the Layout Book.• Best suited for generating the second level (e.g. 1:5) of details.	<ul style="list-style-type: none">• A detail library needs constant management, maintenance and updates.• Details don't have a live connection to the model. They must be manually updated to reflect changes from the model.• Documentation is hosted in different files (main file, detail library, etc.)• Potential impact to the file size and performance as we are constantly referencing an external ARCHICAD file.• Everything becomes 2D elements, so model element information is not available and associative labels cannot be used.• The information we add to the detail cannot be viewed in the main model views, as the link is not bi-directional and there is no connection to other views (e.g. sections, elevations).• We need to keep track of the model and the details' consistency.• Details don't have correct relevant position when exported in BIMx.• Not ideal for generating 1:20 details, as most of the time these are project-specific, and they heavily depend on the model content and updates.

4.3 Standard details on independent detail/worksheet – detail library

Pre-defined 2D details can be stored inside ARCHICAD on a dedicated worksheet or an independent detail view as part of an **office template**. This might increase the template file size, but the advantage is that the content is kept within one file.

The dedicated [worksheet or detail](#) view serves as a source for referencing detail drawings. If we have a standard **library of details** that we simply want to put on a layout and publish, the best way is to store it on a worksheet. Door elevations, ironmongery details, practically any elements that are referenced by codes and not by view markers, are good examples for which this workflow would work best.

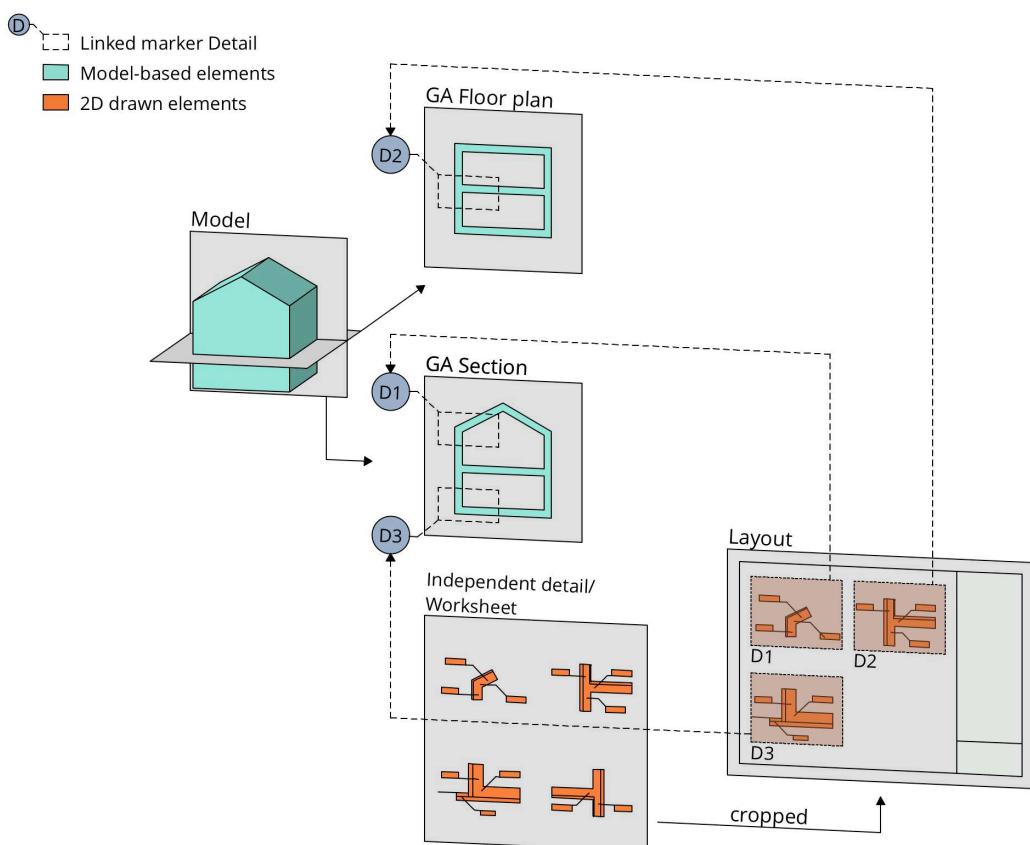


Image 13 - Standard details on independent detail/worksheet – detail library detailing workflow

Step 1 - If we need to show only particular details from the detail library stored on the independent view/worksheet, choose which details will be placed on the layout.

Step 2 - Place the cropped view of the chosen detail on a layout or, in case we want to show all the details from the collection, the entire worksheet.

Step 3 - By placing a linked detail marker onto a corresponding project view, we can mark the detail position in the model.

Advantages

- All documentation is stored in the same file (unless another strategy is used to manage file sizes in large projects).
- Less time-consuming. Only requires the initial time investment to develop the detail library in the template. Information will be reused between projects.
- Models can be more basic and developed much faster without detailed modeling of junctions and specific elements.
- The number of polygons in the model is lower.
- We can engage the team members with less modeling skills for the detail creation.
- Ready-made details can be used in the original state; no additional manpower is needed for their creation.
- Convenient for transferring information between similar details, allowing for graphical consistency across the co-located details.
- Quicker and easier to edit similar elements on separate details.
- Easier management of attributes, as detail elements are in the same file.
- No additional layers and layer combinations are necessary for separating detail enhancement elements.
- Less views in the View Map in the Navigator.
- Usually, standard detail content is not affected by model changes and updates.
- Suitable for detailing elements that are referenced by codes (i.e. door details, joinery details, railings) and not by detail or section markers.
- Best suited for generating the second level (e.g. 1:5) of details.

Disadvantages

- A detail library needs constant management, maintenance and updates.
- Details don't have a live connection to the model. They must be manually updated to reflect changes from the model.
- Auto referencing is not possible.
- Linked markers can be used, but cropped drawings must be placed on a layout before they can be linked if the Detail drawing ID number is to be managed by automatic drawing numbering.
- Cannot conveniently navigate between details in the project. Use of Trace & Reference is also less convenient.
- Not recommended for envelope and plan details because there is no relationship between the detail and the live model.
- Heavier template and initial project file size. We have to make decisions about the unused content.
- Everything becomes 2D elements, so model element information is not available and associative labels cannot be used.
- The information we add to the detail cannot be viewed in the main model views, as the link is not bi-directional and there is no connection to other views (e.g. sections, elevations).
- Placing cropped views on layouts might increase the file size. In case we place entire detail library view on a layout, separate drawing numbering is not available.
- We need to keep track of the model and the details' consistency.
- Details don't have correct relevant position when exported in BIMx.
- Not ideal for generating 1:20 details, as most of the time these are project-specific, and they heavily depend on the model content and updates.

4.4 Selecting standard detail from internal detail library

In some cases, we need to make project-specific modifications to a standard detail library kept inside ARCHICAD. This method explains how to select a detail from the **detail library** stored on a worksheet and copy its contents to a newly-created independent detail viewpoint. This way, basic standard detail library content remains an untouched part of a template and is a starting point for further editing. As mentioned in the previously described method, detail library might increase the template file size, but the advantage is that the content is kept within one file.

This method is useful if we want to split details into separate views with individual ID numbers and [names](#) for easier organization and tracking the details.

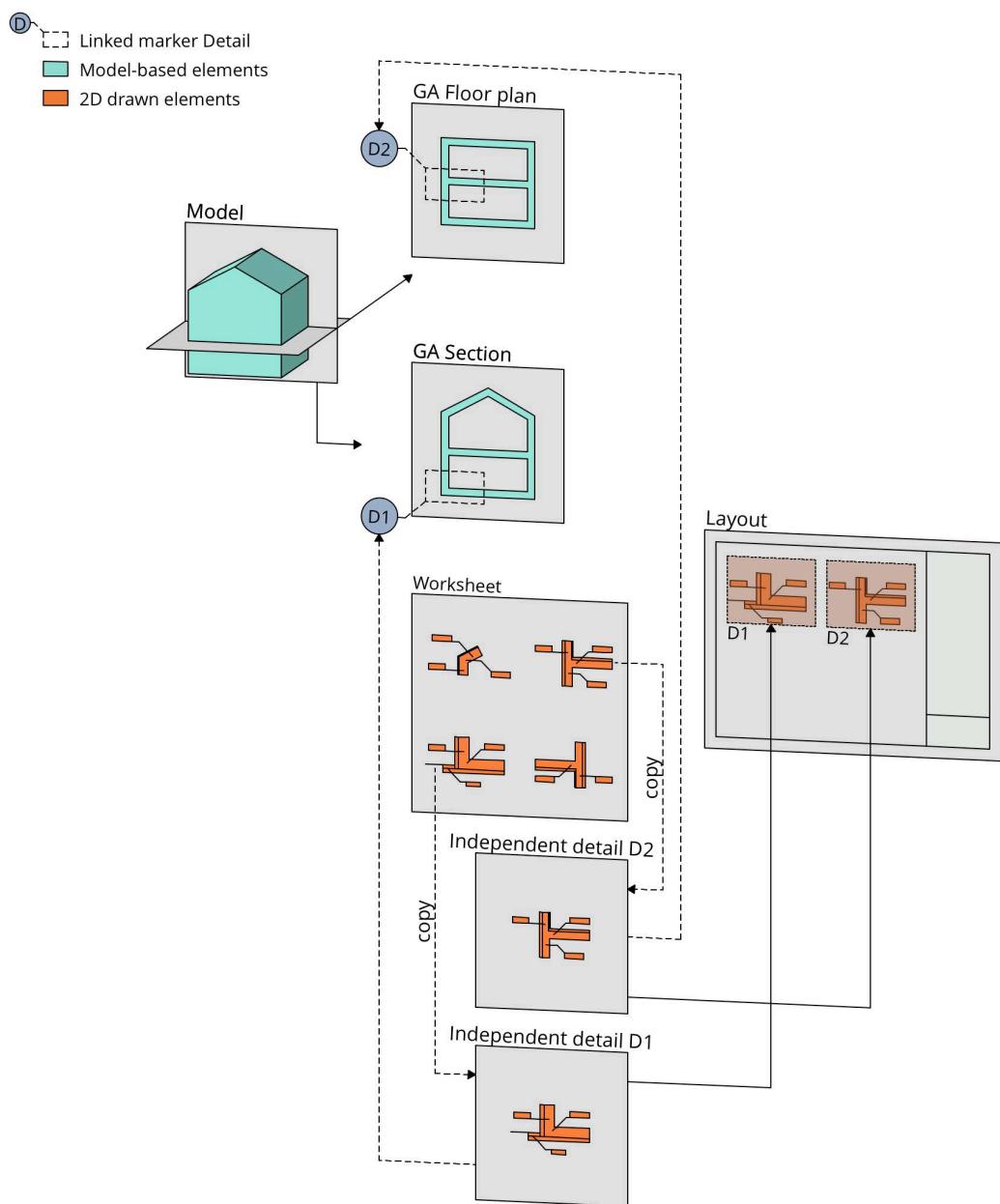


Image 14 - Selecting standard detail from internal detail library detailing workflow

Step 1 - Choose a detail from the worksheet that hosts the collection of details.

Step 2 - Create an independent detail.

Step 3 - Copy the contents from the source worksheet and paste it onto the newly created independent detail viewpoint. We can add more information and elements to enhance the detail.

Step 4 - With the detail tool, place a linked marker on a project view that will refer to this newly created independent detail viewpoint. This way, we create a linked detail with a reference to the actual detail position in the model.

Advantages	Disadvantages
<ul style="list-style-type: none">• Best suited for offices with a standardized set of details.• All documentation is stored in the same file.• Less time-consuming. Only requires the initial time investment to develop the detail library in the template. Information will be reused between projects.• Linked markers can be used, makes navigation through the project easier.• Easier management of details through naming and numbering.• Models can be more basic and developed much faster without detailed modeling of junctions and specific elements.• The number of polygons in the model is lower.• We can engage the team members with less modeling skills for the detail creation.• Ready-made details can be used in the original state; no additional manpower is needed for their creation.• Quicker and easier to edit similar elements on separate details.• Easier management of attributes, as detail elements are in the same file.• No additional layers and layer combinations are necessary for separating detail enhancement elements.• Usually, standardized detail content is not affected by model changes and updates.• Suitable for detailing elements that are referenced by codes (i.e. door details, joinery details, railings) and not by detail or section markers.• Best suited for generating the second level (e.g. 1:5) of details.	<ul style="list-style-type: none">• A detail library needs constant management, maintenance and updates.• Details don't have a live connection to the model. They must be manually updated to reflect changes from the model.• Not recommended for envelope and plan details because there is no relationship between the detail and the live model.• Heavier template and initial project file size.• Everything becomes 2D elements, so model element information is not available and associative labels cannot be used.• The information we add to the detail cannot be viewed in the main model views, as the link is not bi-directional and there is no connection to other views (e.g. sections, elevations).• Might result in a larger Project Map tree, requiring a consistent and logically-structured naming convention to be adopted by the project.• We need to keep track of the model and the details' consistency.• As the detail content is copied from the source, using linked detail markers won't allow backreferencing to its source.• Details don't have correct relevant position when exported in BIMx.• Not ideal for generating 1:20 details, as most of the time these are project-specific, and they heavily depend on the model content and updates.

5. Layout techniques

In each detail method presented, we covered the entire workflow from detail creation to its [placement on a layout](#). We also covered the advantages/disadvantages for each regarding **project documentation** size and organization. Given that file size, especially layout book size, is an important consideration in project management, we dedicated this section of the detail document workflow guide to thoroughly explain detail drawings' organization and placement on the layouts. The main reason for this is to keep file sizes within manageable limits to avoid potentially slow project performance. **Large scale projects** and projects containing **many details** are those that might be affected depending on the chosen layout technique.

The number of detail views we have in the file is not necessarily equal to the number of placed detail drawings we will have on the layouts. Multiple detail drawings can be derived from a single view; then again, one view can be a single drawing source but show more details at once.

Depending on how we arrange the placement of the detail drawings from views to layouts, we named three layout techniques:

1. One source view – one drawing
2. One source view – multiple drawings
3. Multiple source views – multiple drawings

The following diagram shows which of the eleven detail methods we explained earlier is suited for which layout technique:

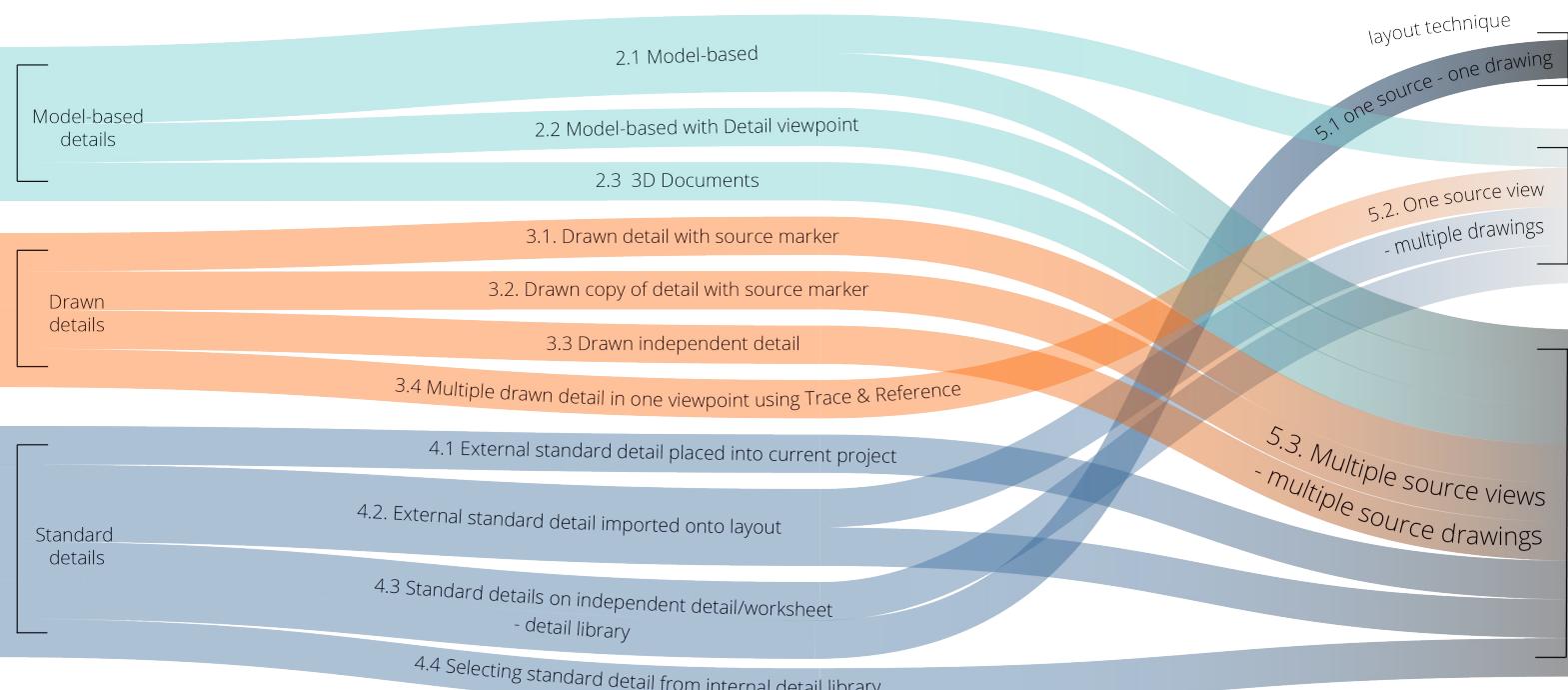


Image 15 - Detailing workflows process diagram

5.1. One source view – one drawing

This technique is characteristically used with the creation of a **detail library**. Details are created in a single location (independent detail or worksheet) next to each other, in the same way they would look on a layout. We can place a standard detail library as a single drawing on the layout for publishing as described earlier in [Standard details on independent detail/worksheet – detail library](#) method. The drawing on the layout only carries the additional necessary information for publishing, such as the title block, but a separate detail drawing numbering is not available. Detail titles and numbering needs to be managed manually.

It can also be time-consuming to find a specified detail, as detail markers cannot be used to navigate in the project. This is particularly true when the detail/worksheet viewpoint is not well organized and contains active, superseded, unfinished details, etc.

This method is suitable for generic details that do not have a specific relationship to the live model, such as generic **joinery details**, **door elevations**, **railings**, **detailed profiles**, and practically drawn details that would never be modeled, or those that require quick edit. Developing detail variations is also easy as we can easily transfer information and modify similar elements between details. This allows for good graphical consistency across the co-located details in the detail library. However, use of [Trace & Reference](#) is not convenient.

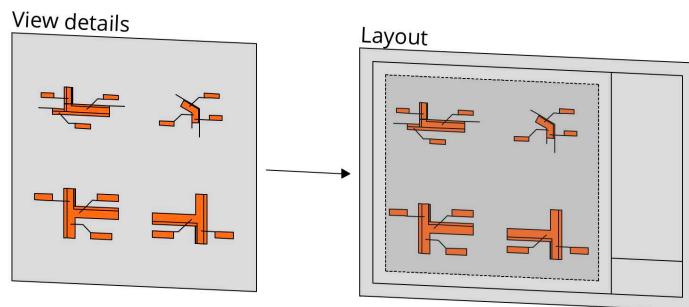


Image 16 - One source view - one drawing layout technique

The biggest advantage is that detail library is managed within **single view** and no additional views are created in the View Map tree. Placing single view on the layout also means no fear of file size growth caused by a large number of views and cropped drawings on the layouts.

5.2. One source view – multiple drawings

This technique is also suitable for **detail libraries**, but it is used with any method where we create more details in one view, for example the [Model-based](#) method. One source view transforms into multiple drawings on the layout when we crop it on the layout to show only one detail at a time. Therefore, it is added multiple times to the same or different layouts in the Layout Book.

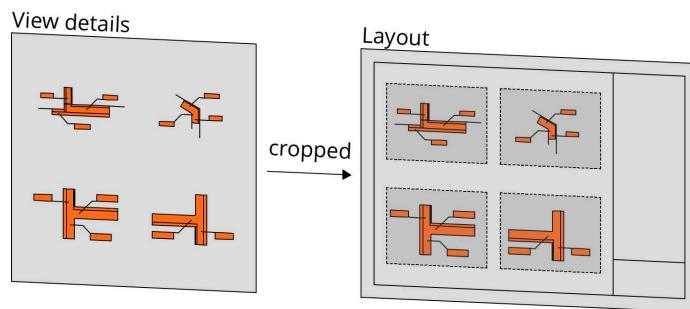


Image 17 - One source view – multiple drawings layout technique

In comparison to the previously described technique, where we created a single drawing from a single source view, project files can be larger, as we are adding the same view multiple times to a layout. However, the main advantage is the use of ARCHICAD [Drawing titles](#) and automatic ID numbers of the cropped drawings [placed on the layout](#). Linked markers can be used after the drawings are placed on the layouts.

This technique will secure less views in the View Map tree, but it produces more cropped drawings on the layout. Therefore, this method should be used sparingly on medium to large projects.

5.3. Multiple source views – Multiple drawings

With this technique, each detail is created in its own view: detail, section or floor plan view. Ideally, these views are generated from the model, as described in [Model-based with Detail viewpoint](#) workflow, and each detail is then individually placed onto the layout. It is the most commonly used layout technique with **all types of detailing** workflows: model-based, 2D drawn-based and standard detailing.

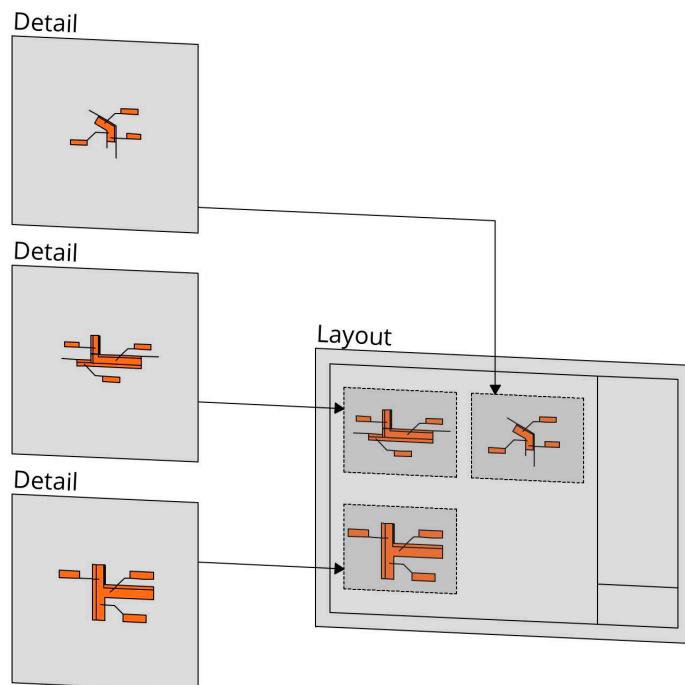


Image 18 - Multiple source views – Multiple drawings layout technique

This method is highly recommended for details that are referenced from the main project views. The big advantages of the method are: Direct model relationship to details, the ability to navigate via detail markers and detail [numbering](#) and cross referencing managed by ARCHICAD.

This technique calls for proper and logical structuring of the project views and number of drawings placed on the layouts which may add to project file size. This is especially important if we combine detailing methods of drawings placed on the layouts, as updating Layout Book might take longer time due to number of different sources.

It can be time-consuming to transfer information between similar details if we have large number of detail views.

6. Special Considerations

6.1 Naming convention

Established and standardized naming conventions across all views helps us keep track of the drawing references in the Navigator. If the chosen detailing workflow allows for it, we can use automatic ID numbering to manage detail drawings more easily. Two main pieces of information about every detail are its Reference ID and Name.

Reference ID is an editable field that contains the ID of the generated detail viewpoint. The ID serves to identify the detail in the project view and in the navigator. Every time we add new detail in the project, an ordinal number will be added to the detail ID. We can enter a **Name** of the detail; this name appears in the navigator palette and the title bar of the detail window.



[Read Help Center article \[7\] Detail Tool Settings](#)

If we place a linked or an unlinked marker, the ID/Name fields are grayed out; the linked marker will inherit the ID/Name from its reference that it is connected to. As for the unlinked marker, it can only display custom text that we can enter under the '**Marker Symbol Text/Marker Text...**' settings in a detail settings dialog. When we want to create an independent detail, a dialog will pop up to enter the Reference ID and Name.

Under the '**Marker Symbol Text/Marker Text...**' settings of a detail settings dialog, we can determine which text will be displayed in two rows in the detail marker. In the first row we can show reference ID, detail Name, **drawing ID** and a custom text. For the second row, we can choose to display detail name, **layout ID** and a custom text.

To display drawing ID and layout ID information in the source marker, we must change the marker reference to '**The first placed drawing of the viewpoint**' in the detail settings, so when detail is placed on the layout, it will read the information from that layout.



[Read Help Center article \[8\] Layout and Drawing IDs](#)

6.2 Labels

Labels allow us to link text information or a symbol to construction elements and 2D Fills. Labels can be associative or independent and we can choose the label type in the info box.

Associative labels are placed by clicking an element; they can display information built in the model elements. The label remains associated to the element even after we move or modify the element. If we delete an element, its associated labels are also deleted.

Independent labels are not associated to any element, so they don't read information automatically from an element. **Symbol** Labels are GDL objects that are available along with Text/Autotext labels; they can display any kind of element information or property. Any label used often can be saved as a favorite.



[Read Help Center article \[9\] Labels](#)

The ability to use associative labels in details depends heavily on the chosen detailing workflow. We can use associative labels in all the model-based detailing workflows. In addition, associative labels can be placed on Cut Fill – Building Material fills in Drawn 2D details to display information contained in building materials. Independent labels must be updated manually with each project change. We can use text content of the labels to search for the elements using the Find & Select function.

An organized office template with favorite labels, consistent property sets, and classifications is key to more efficient documentation processes. We can keep most commonly used labels in the inventory library of the template -- typically in a worksheet -- and pick up the parameters from those labels or copy them.



[Read Help Center article \[10\] Expression-defined property labels](#)

Saving favorites is the advised method for fast loading the desired settings for any type of element, not just labels. In addition, we can create our own **graphical** labels with available 2D tools and text/Autotext saved as custom GDL labels.



[Read Help Center article \[11\] Custom Graphical Label](#)

6.3 External content

We already mentioned in several methods with standard details, that detail content most often is in the form of external files originating from manufacturers. There is an option to explode these external drawing files (most often in .pdf and .dwg formats), but we should avoid exploding these in our main project file and instead keep them in the project as references only.

Choosing '**Explode into Current View**' command from Edit/Reshape menu or a context menu, will turn selected drawings or selected ARCHICAD elements (Floor Plan and other 2D windows only) into 2D drawing primitives: lines without arrowheads, circles, arcs, elliptic arcs, splines, unframed fills and single-line texts. That is why exploding drawings can result in large number of exploded 2D elements and can increase project file sizes. During the explode conversion we can choose to import layers, line and fill types of the original drawings, which naturally introduces new attributes in our project. Therefore, we should be aware of careful attribute management.



[Read Help Center article \[12\] Explode into Current View](#)

6.4 Line and fill consolidation

After exploding the elements or in model-based generated details, we may find that exploded lines and fills often contain superfluous elements (extra line segments, overlapping or superfluous fills) that make editing in detail viewpoint difficult. To make editing easier, we should use **linework** and **fill consolidation** functions on selected items in the detail window immediately after exploding the content or generating a source detail.

Line and fill consolidation are separate functions and are executed on selected elements independently of each other from 'Edit/Reshape/Linework Consolidation...' or 'Fill Consolidation...'.



[Read Help Center article \[13\] Consolidate Lines and Fills in Drawing Windows](#)

6.5 Cut Fill – Building Material

For construction model elements, cut fills are assigned through the Building Material attribute. When a model element is exploded to 2D elements (lines and fills) in the source detail drawing, the resulting fill will have the Cut Fill - Building Material category. A detail fill in this category retains the physical properties of the original construction element stored in the Building Materials settings, such as Thermal conductivity, etc.

Assigning this fill category to fills in details is necessary if we want to perform [the thermal bridge](#) analysis of the EcoDesigner STAR add-on¹. Cover, drafting or cut fill won't work with Thermal Bridge simulation. Cut Fill - Building Material type can be used for creating drawn **2D-based details** as well. Therefore, thermal bridge analysis can be performed on 2D-based details as well.



[Read Help Center article \[14\] Fill Categories](#)

6.6 Thermal bridge simulation

The EcoDesigner STAR add-on for ARCHICAD enables architects to perform thermal bridge analysis on any detail of their project. This 2D **heat-flow simulation** can be run on any ARCHICAD project details to identify those critical parts of the building that might be responsible for heat-loss, vapor condensation or local thermal comfort issues. To perform this calculation, all the fills representing element skins on the detail must have the Cut Fill - Building Material category, which holds the information about the building materials' physical properties.

When we launch the thermal bridge analysis wizard from the context menu of the detail viewpoint, we must define the exterior, interior and underground parts of the detail elements. The 2D thermal conduction calculation then produces the value for the linear thermal transmittance (psi value) of the detail.

The results are available as color-coded pixel graphic diagrams displaying the **temperature** and **energy flows**. The embedded graphic is first placed as a drawing on top of the original detail (it contains both temperature and energy flow diagrams separated in drawing layers). We must move it aside to show the simulation diagram next to the detail drawing or displace it to another view. These images can be placed on layouts as part of the project documentation set.

¹ Read more about the EcoDesigner STAR add-on: http://www.graphisoft.com/archicad/ecodesigner_star/

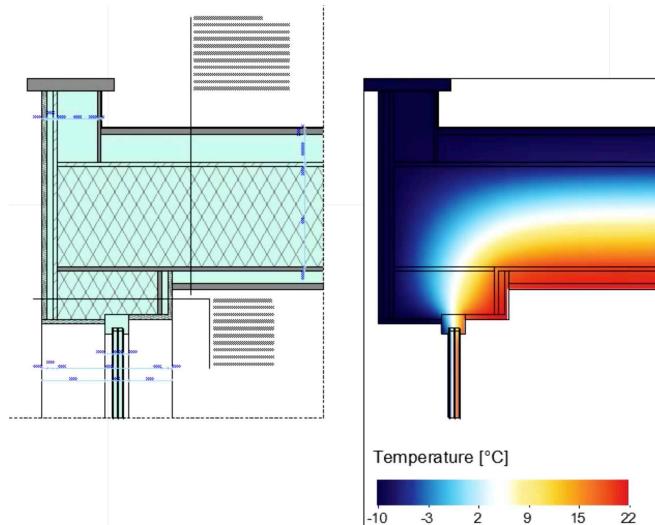


Image 19 - Temperature flow thermal bridge detail diagram

The calculated psi values of thermal bridges and their effective lengths can be assigned to the thermal blocks where they occur. This way the effect of thermal bridging is accounted for in the dynamic building energy performance analysis.

 Visit [GRAPHISOFT page](#) to learn about EcoDesigner STAR and Thermal bridge simulation.

6.7 Rebuild from source view

This command is available only in the Detail and Worksheet windows from the context menu. Associative elements, dimensions and labels, created in a detail viewpoint that are associative to the detail elements generated from the source view elements, cannot remain associative upon 'Rebuild from Source View' command if there is any change made with the elements generated from the model. A warning dialog will pop up offering to '**Delete these elements**' or '**Change these elements to static**'.

The 'Rebuild from Source View' command might not be visible in the 'View/Refresh' menu by default. We can customize the menu to include this command in 'Options/Work Environment/Menus...' if needed.

6.8 Trace & Reference

The benefits of Trace & Reference functionality where we can place two views alongside each other with different viewing options are well known to ARCHICAD users. Comparing different model views and easy checks this way are essential in day-to-day work, especially in detailing.

Please note that if we want to copy the content from a source view into a detail viewpoint, we must keep the Reference of a source view visible to paste the elements on the correct position. Detail has its own viewpoint origin and pasting will place elements in relation to the detail origin as from the project origin in the source view.



Read [Help Center article \[15\] Virtual Trace](#)

6.9 Graphic Overrides

Graphic Overrides is an impressive and powerful feature to be used in any graphical presentation. It is worth mentioning in relation to creating details. Rules determined with Graphic Override combinations will apply certain graphical presentation for any type of the element.

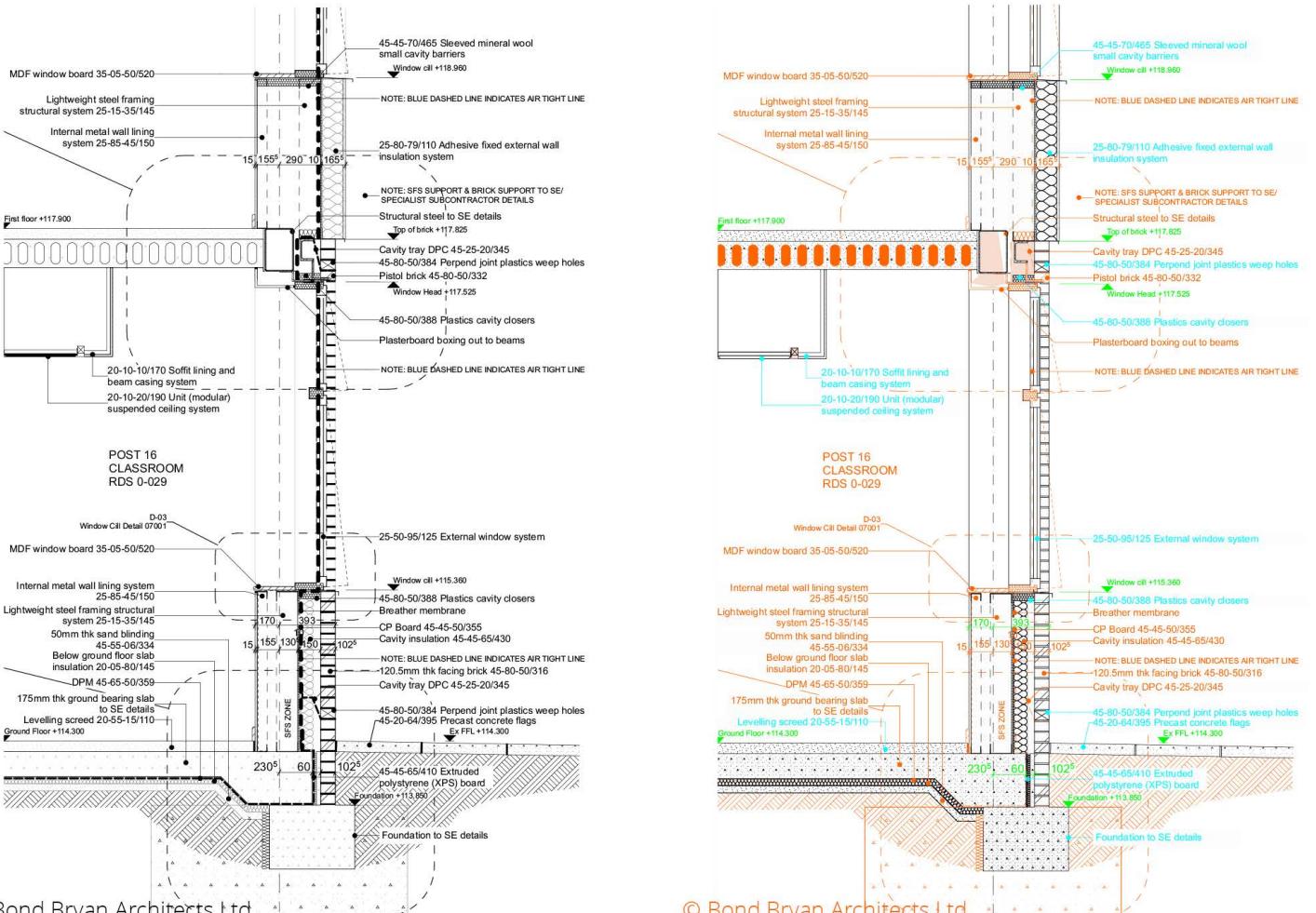


[Read Help Center article \[16\] Graphic Overrides](#)

The simplest use case is to just touch up a detail graphic presentation, but we can also present detail elements in different ways for different detail scales, or even use Graphic Overrides for a quality checking of the details. For example, setting a graphic override rule that would apply a different pen color to detail elements generated from the model compared to the manually added 2D elements for easy identification of the element origin. The right side of the picture below uses graphic override rules. The color black marks model generated content, orange marks 2D elements, green marks associative dimensions and light blue marks associative labels.



[Read Help Center article \[17\] Using Graphic Overrides for Project Auditing](#)



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Image 20 - Left side: Detail section 1:20; Right side: Same Detail using Graphic Override rules; by Bond Bryan Architects

6.10 Detail context menu commands

There are several commands available from the context menus of the selected detail marker, detail viewpoint or detail title in the navigator project map palette, which make navigation between details and their references much easier.

The ‘Go to Drawing’ option will open a layout and select a corresponding linked detail drawing. It is available from the context menu if we right click on the detail marker’s head, only for those details that are linked to the drawing placed on the layout.

To find all the views connected to the detail marker, we must right click on the detail marker and from the context menu choose the ‘Views from this Detail Drawing/All Related Views...’ option. The views that are not linked to the detail marker will be grayed out. We can open a view directly from this navigator-like list by selecting it.

Similarly, if we want to find all the markers attached to a detail viewpoint, we need to right click on the specific detail from the navigator’s Project Map list and choose ‘Find Linked Markers...’ from the context menu. A dialog will pop out with the list of all the linked markers that we can select and navigate to or manage their settings directly from this dialog.



[Read Help Center article \[18\] Find Linked Markers](#)

A separate option from the Project Map’s context menu ‘Select Detail marker on the Source View and zoom to it’ will select the source detail marker and navigate to its location in the project.

6.11 Detail Boundary

Unchecking ‘Create Detail/Worksheet Boundary in Detail/Worksheet window’ In ‘Work Environment settings/More options’ will eliminate the dashed boundary around detail drawing for all newly-created detail viewpoints using a polygon input method.

6.12 Section Details

Detail viewpoints created from a section reveal the elevation of the original construction, which means that **elevation dimensioning** placed on detail viewpoints shows correct elevation values, unless we displace drawing elements vertically. The same is true for details generated from elevations and interior elevations.

6.13 GDL detail library

Some users create standardized details as GDL library parts and use detail object libraries throughout their projects, instead of a separate file or sets of external drawings. The parametric capabilities of the GDL objects allow us to create more generic types of details, for which we can change their appearance and configuration through the object settings or even through Interactive Schedules.

While this is not how the majority of ARCHICAD users would approach detailing in the software as it requires advanced GDL knowledge, it is an option if your office has users with advanced GDL programming skills. However, keep in mind that rolling out such a workflow in your office would mean that you must depend solely on these few users with the advanced GDL knowledge when it comes to creation of details.

Good examples of efficient use of GDL detail library are homebuilder companies and pre-fabricated construction projects where types of details repeat but dimension parameters differ. The ability to utilize parameter flexibility in GDL object makes it possible to create variations of the same detail, reducing the overall number of details in the detail library.

 [Read Help Center article \[19\] GDL](#). Visit [GRAPHISOFT GDL Center](#) to learn more.

6.14 BIMx

A detail exported to BIMx can be shown on the correct relevant position in connection to the model, in the BIMx 3D view, the same way as sections and floor plans do.

This is true only for the details with the **source markers**, as linked types of details are not generating positions originally from the model. That is why it is worth pointing out that if we want to utilize the full potential of the BIMx model, consider only those detailing workflows that use source detail markers.

Details with linked markers and standard details with external drawing sources can be exported to BIMx as part of a layout documentation but will not show the correct relevant position in the model. Navigation from a layout with these types of detail drawings to a 3D view in BIMx will work, but will not trigger the transition between the drawing and its position in a model. External detail linked from another ARCHICAD file onto the layout will be displayed on a layout when exported to BIMx but won't open a 3D window from its layout.

Any detail marker visible on the model views like floor plans, sections or elevations, will be shown in BIMx in blue, which means you can click on them and open the layout where those details are appointed.

 [Read Help Center article \[20\] About BIMx](#)

6.15 Layout detail placement

The capability of ARCHICAD to simultaneously place more drawings from the views onto layouts is a huge help in project documentation management. If we would have to move and position each detail on a layout individually, it would be very frustrating and time-consuming. That is why we shouldn't forget to set Auto arrangement for the drawing placement when we create a new master layout in the Master Layout Settings.

Automated arrangement and positioning of the detail drawings can be especially handy if we have many details. Setting the distances between drawings and layout edges, sequencing by name, ID or navigator position, and even automatically creating a new layout when the current one gets full of drawings based on set placement parameters, are advantages of this functionality. We can even set flat or matrix grid rules to place drawings on a layout accordingly.

Many offices, therefore, use dedicated master layouts for detail drawing placements.



[Read Help Center article \[21\] Arranging Multiple Drawings on the Layout](#)

6.16 Worksheet vs. Detail

While creating a Worksheet based on the source model is like creating a model-based detail, the worksheet is optimized for creating partial floor plans and partial sections. Both tools have a '**No Boundary**' geometry method for marker placement with one crucial difference: the source worksheet will generate 2D content based on a source view, while detail will generate an independent detail viewpoint with no content. Unlike the detail tool, the worksheet tool has a single-click 'capture' geometry method, which reproduces the entire contents of the current window as 2D elements in the worksheet viewpoint.

The default settings of a Worksheet tool differ in two ways from the default Detail tool settings. When generating worksheet window content based on the model elements, annotation elements and dimensions will appear, unlike in detail where we must uncheck '**Copy construction elements only**' first. Newly created source worksheets will have the same **scale** as the source view, while a detail by default will become half the scale of the source view.

6.17 Deleting markers

If we delete a source marker, a dialog box appears offering options to delete the source marker and its detail viewpoint or to delete the source marker but keep the detail viewpoint as an independent viewpoint with no model source.

Deleting a linked marker has no effect on any other element.

7. Best practices

- Develop the 3D model as much as possible before detailing and do a model check-up. This is especially important if we are aiming for model-based detailing workflows.
- Use the office template to manage attributes, especially complex profiles.
 - Define properties for easier labeling and accurate schedules.
 - Use building material intersection priorities for proper intersection of model elements.
- Use as many associative/linked elements as possible.
- Avoid using static annotations as it is difficult to update them. Instead, use associative labels and dimensions where possible.
- If we use associative dimensions, dimensions will automatically update after any modifications are made in the model.
- Use layer priorities specific to layer combinations for clean joints.
- Use Linework and Fill Consolidation before editing 2D details generated from the model. It will clean up the drawing by merging identical fills and clearing overlapping elements.
- With the use of linked markers, navigation in the project documentation and coordination of the printed output will be easier.
- When we create details with the source marker and develop them in the detail viewpoint, remember to rebuild from the source only when is necessary not to lose associativity with annotation elements. We can copy the original detail to the right and do any development work on the copy and not the original.
- Do not place a detail into a detail.
- Set appropriate Renovation status and Renovation filter before creating a detail.
- Do not annotate on layouts.
- In a detail library, try to organize details, for example in an imaginative grid, when we have multiple detail drawings in one viewpoint.
- Avoid using detailed complex profiles in the whole model, as it has a huge impact on the polygon count. Instead, use them partially, only where we are creating a detail from.
- Avoid using large number of cropped drawings placed on the layouts.
- Use source detail markers when exporting to BIMx.
- Use model-based detailing workflows to utilize model data. The Model-based with Detail viewpoint method offers the most benefits considering project file size.

Appendix

Help Center links

- [1] Element Intersections <https://helpcenter.graphisoft.com/?p=65244>
- [2] Viewpoints in ARCHICAD <https://helpcenter.graphisoft.com/knowledgebase/85539/>
- [3] Details <https://helpcenter.graphisoft.com/user-guide/76812/>
- [4] Create a Detail Drawing Viewpoint with Model Source
<https://helpcenter.graphisoft.com/user-guide/65375/>
- [5] 3D Document <https://helpcenter.graphisoft.com/?p=65368>
- [6] 3D Document Settings <https://helpcenter.graphisoft.com/?p=65903>
- [7] Detail Tool Settings <https://helpcenter.graphisoft.com/user-guide/66076/>
- [8] Layout and Drawing IDs <https://helpcenter.graphisoft.com/user-guide/77090/>
- [9] Labels <https://helpcenter.graphisoft.com/user-guide/77063/>
- [10] Expression-defined property labels
<https://helpcenter.graphisoft.com/knowledgebase/84715/>
- [11] Custom Graphical Label <https://helpcenter.graphisoft.com/user-guide/76152/>
- [12] Explode into Current View <https://helpcenter.graphisoft.com/user-guide/76406/>
- [13] Consolidate Lines and Fills in Drawings <https://helpcenter.graphisoft.com/?p=65012>
- [14] Fill Categories <https://helpcenter.graphisoft.com/user-guide/76994/>
- [15] Virtual Trace <https://helpcenter.graphisoft.com/user-guide/76416/>
- [16] Graphical Overrides <https://helpcenter.graphisoft.com/?p=65464>
- [17] Using Graphic Overrides for Project Auditing
<https://helpcenter.graphisoft.com/knowledgebase/85885/>
- [18] Find Linked Markers <https://helpcenter.graphisoft.com/user-guide/76836/>
- [19] GDL <https://helpcenter.graphisoft.com/user-guide/65914/>
- [20] About BIMx <https://helpcenter.graphisoft.com/knowledgebase/25706/>
- [21] Arranging Multiple Drawings on the Layout
<https://helpcenter.graphisoft.com/user-guide/77085/>

Keywords

Detail, Detailing, Model-based detail, Drawn detail, Standard detail, source marker, linked marker, ARCHICAD