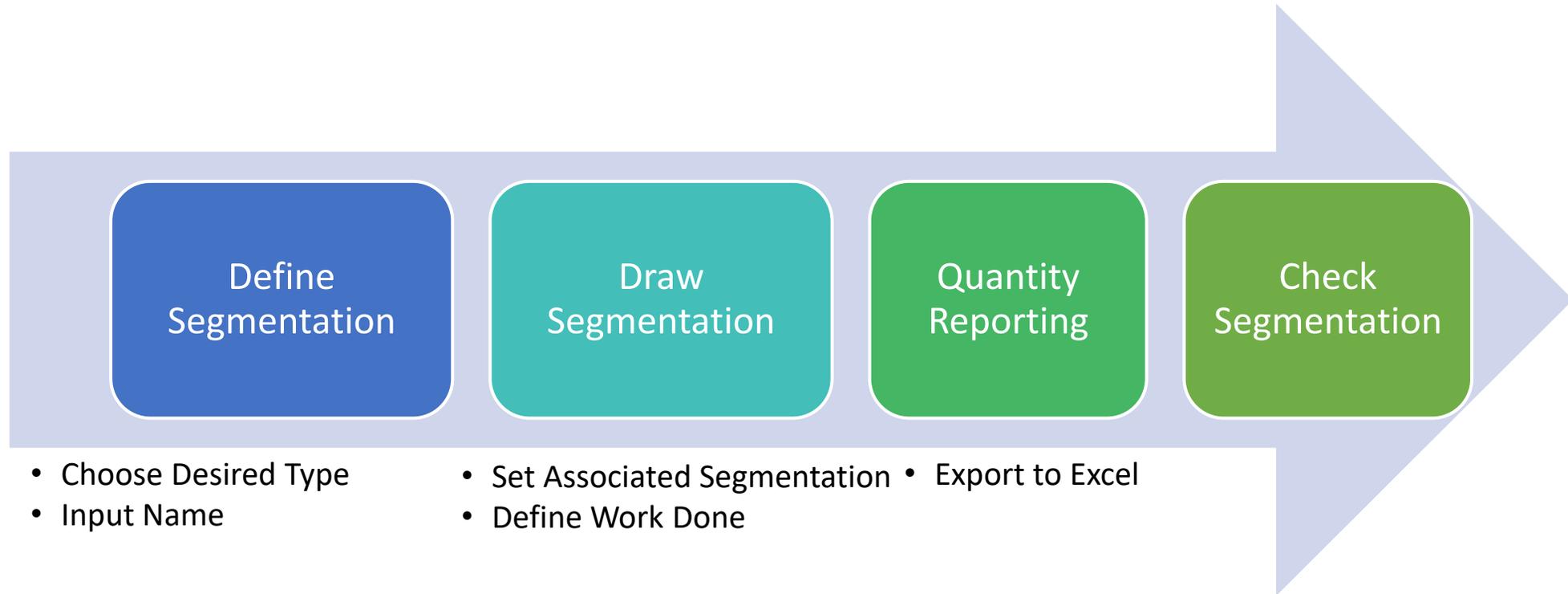




Segmentation: Foundation, Column, & Wall



Progress Claim Flow



Define Segmentation

- Step 1: New Element List → Construction Zone/Subcontracting/Progress Claim/Custom
- Step 2: Choose Specific Element for the Scope
- Step 3: Input Name

The screenshot displays the software interface for defining segmentation. The ribbon at the top includes tabs for START, PROJECT SETTINGS, BIM MODEL, IDENTIFY, DRAW, VIEW, QUANTITY, and REVISION. The 'DRAW' tab is active, showing various drawing tools. The 'SEGMENTATION' section of the ribbon includes options like 'Set Associated Segmentation', 'Define Work Done', 'Check Segmentation', 'Element Schedule', 'Copy by Floor', 'Join', 'Convert Element', 'Measure Distance', 'Common Attribute', and 'Separation Line'. Below the ribbon, there are dropdown menus for 'Basement', 'Segmentation', and 'Segmentation'. The 'Element List' panel shows a grid of element categories, with 'Progress Claim' highlighted by a red dashed box and a green circle labeled '1'. The 'Calculation Scope' dialog is open, showing a list of elements with checkboxes. 'Column' and 'Wall' are checked, and a red dashed box highlights these two options with a green circle labeled '2'. The 'Attribute Editor' table at the bottom shows the following data:

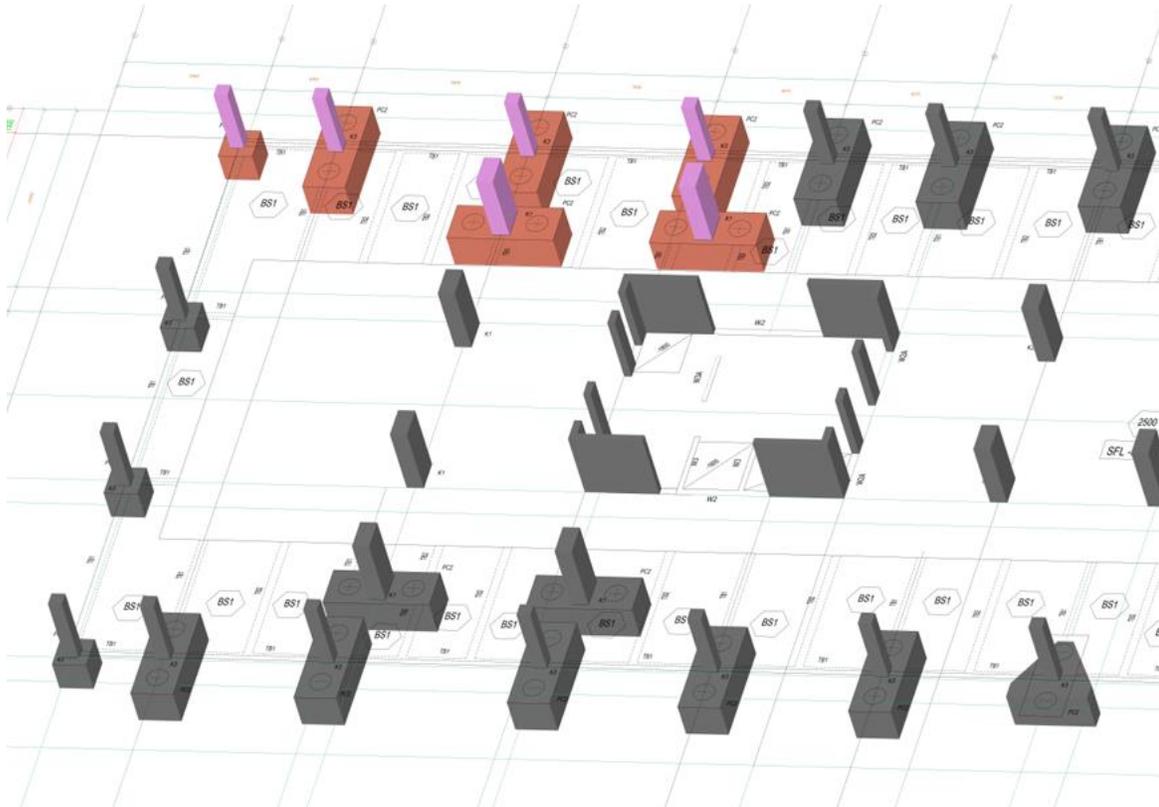
Attribute	Value
Name	Progress Bulan Januari
Segmentati...	Progress Claim
Calculatio...	Column Beam Slab Fou
Sequence	1



Draw Segmentation – Specific Element



Case: Vertical Element Work Based on Entities



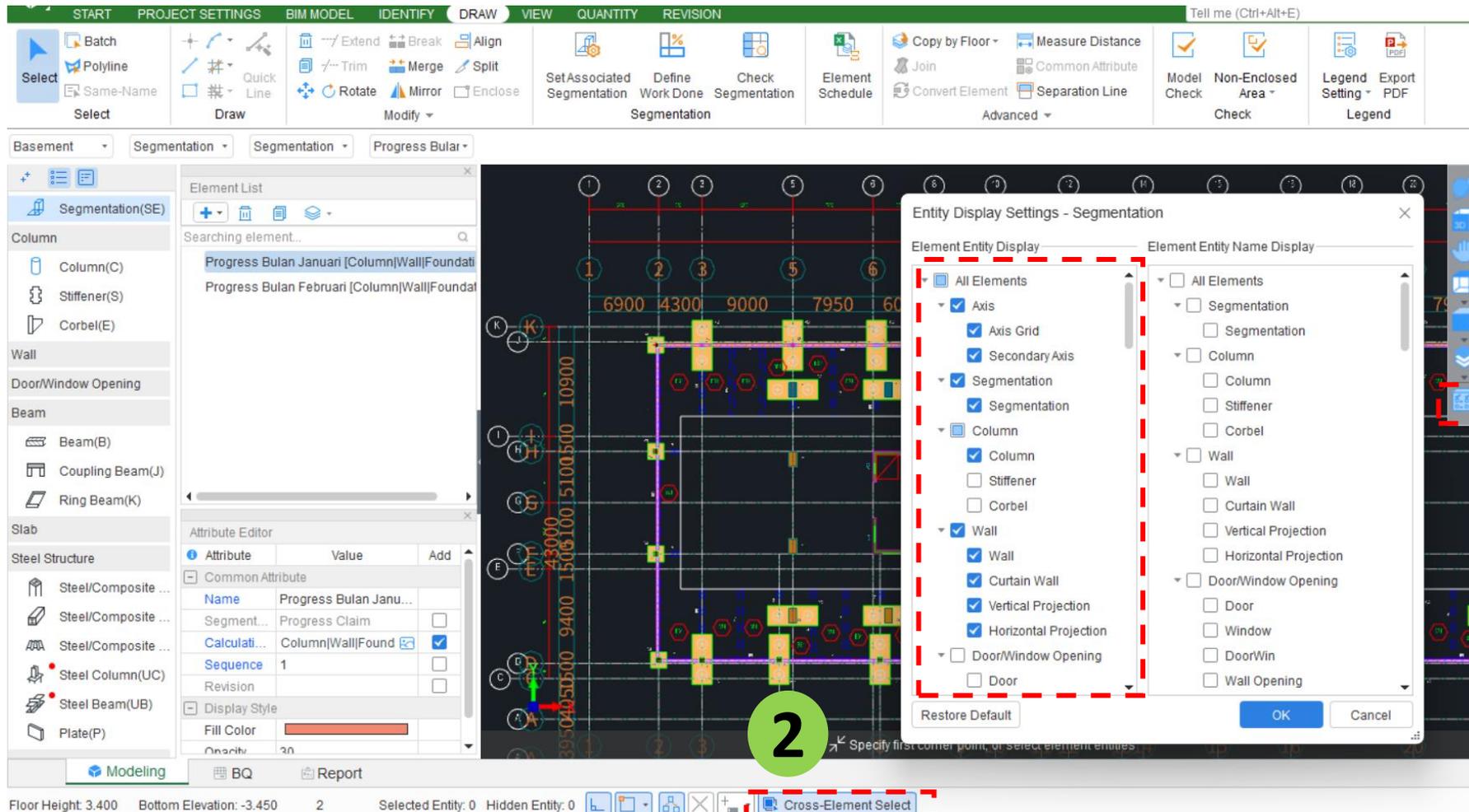
Vertical elements such as pile caps, columns, and walls are constructed individually at specific points.

Segmentation by area is ineffective for these elements, requiring users to manually draw regions that cover specific components.

The **Set Associated Segmentation** feature allows zones to be defined per entity. For walls, it can be combined with the **Break** function to enable more precise zone creation.

Draw Segmentation – Specific Element Method

- **Step 1:** Entity Display Settings → Tick necessary elements
- **Step 2:** Turn on Cross-Element Select



1
Entity Display Settings

Draw Segmentation – Specific Element Method

- **Step 3:** Set Associated Segmentation and block the required entities
- **Step 4:** Choose the desired work progress

The screenshot displays the CubiCost software interface. The top menu bar includes START, PROJECT SETTINGS, BIM MODEL, IDENTIFY, DRAW, VIEW, QUANTITY, and REVISION. The DRAW ribbon is active, with the 'Set Associated Segmentation' tool highlighted. A green circle with the number '3' is placed over this tool. The main workspace shows a 3D model of a building structure with a grid of columns and beams. A red dashed line indicates the selected area. A green circle with the number '4' is placed over the 'Set Associated Segmentation' dialog box, which is open and shows the 'Progress Claim' section. The 'Progress Claim' section has two sub-sections: 'Progress Bulan Januari' and 'Progress Bulan Februari'. Under 'Progress Bulan Januari', 'Formwork' and 'Concrete' are checked. Under 'Progress Bulan Februari', 'Formwork' and 'Concrete' are unchecked. The dialog box has 'OK' and 'Cancel' buttons. The bottom status bar shows 'Floor Height: 3.400 Bottom Elevation: -3.450 2 Selected Entity: 54 Hidden Entity: 0' and a 'Cross-Element Select' button.

If there are entities that are not included,

- Step 5: Select the target entities
- Step 6: Set Associated Segmentation and choose “Null”

The screenshot displays the CubiCost software interface. The ribbon at the top contains various tool categories: Select, Draw, Modify, Segmentation, Element Schedule, and Advanced. The 'Set Associated Segmentation' button is highlighted with a red dashed box. A yellow arrow points from this button to the 'Set Associated Segmentation' dialog box. The dialog box is open over a 3D model of a building structure. A green circle with the number '5' is placed over a selected beam in the 3D model, and another green circle with the number '6' is placed over the 'Null' option in the dialog box. The dialog box contains the following options:

- Progress Claim
 - Null
 - Progress Bulan Januari
 - Formwork
 - Concrete
 - Progress Bulan Februari
 - Formwork
 - Concrete

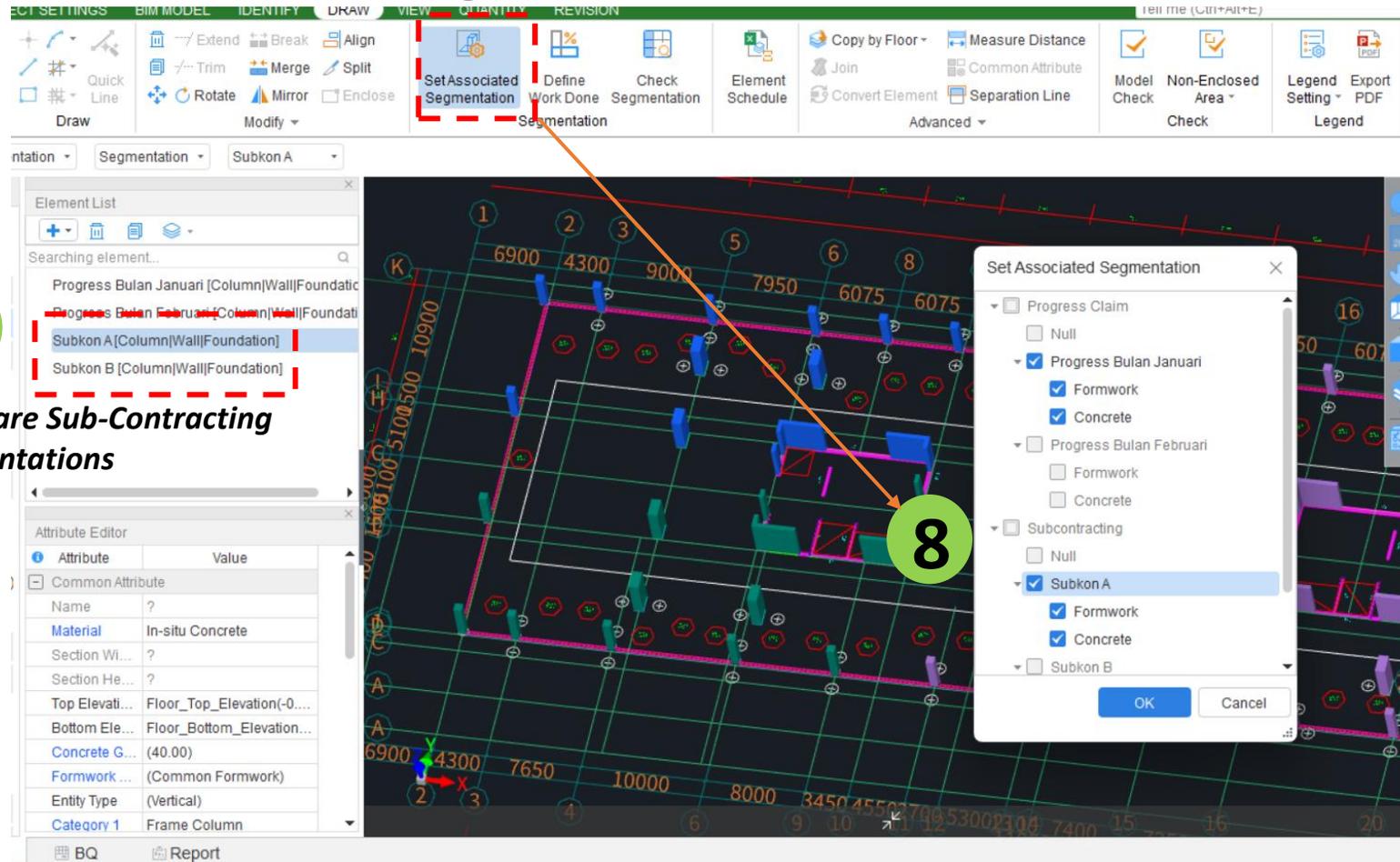
The status bar at the bottom indicates: Floor Height: 3.400, Bottom Elevation: -3.450, 2, Selected Entity: 6, Hidden Entity: 0, and Cross-Element Select.

Draw Segmentation – Mix with Other Segmentation

- **Step 7:** If there are further classifications, you can use additional **but different** segmentation, such as Sub-Contracting, etc.
- **Step 8:** Set each element's segmentation .

7

These are Sub-Contracting Segmentations

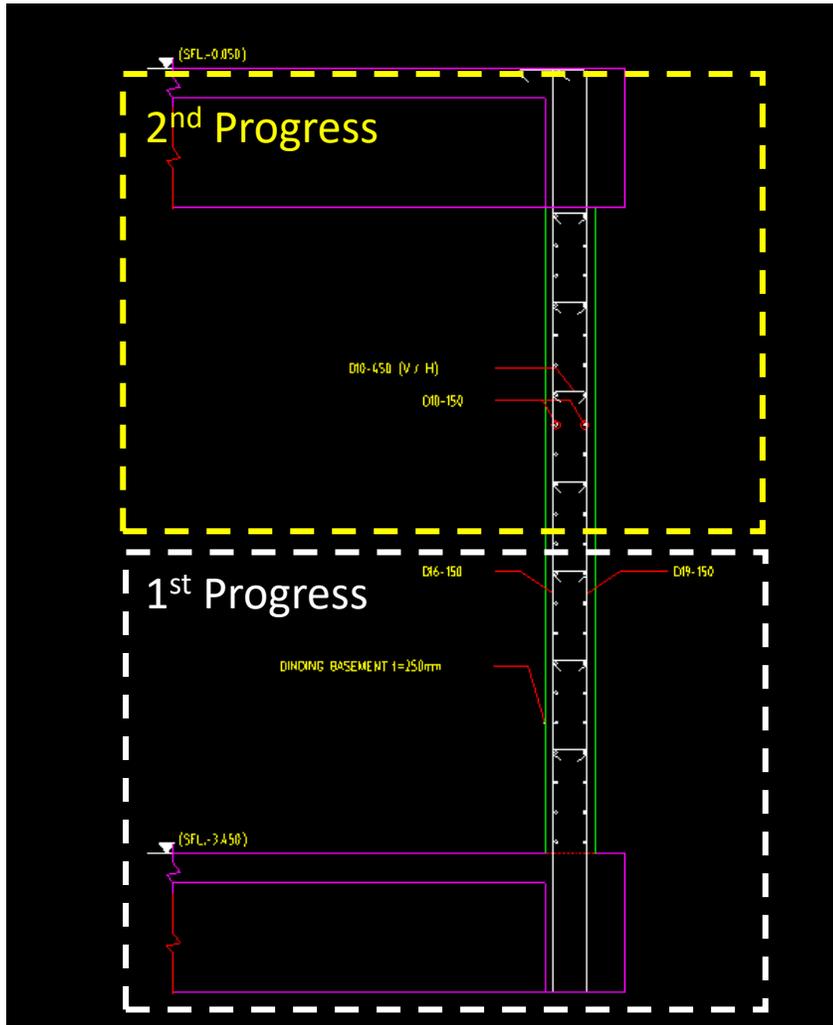




Draw Segmentation – Define Work Done



Case: Vertical Element Work in Stages



Previously, **Set Associated Segmentation** was used for vertical elements, such as pile caps, columns, and walls.

If these elements are constructed in multiple phases, segmentation must be further refined using **Define Work Done**.

This function allows work progress to be tracked as a percentage (%) over multiple periods.

Draw Segmentation – Define Work Done

- **Step 1:** Create Progress Claim for several periods
- **Step 2:** Define Work Done → Set percentage (%) for each period

Visual representation of wall progress

1

2

Progress Claim	Percentage (%)
Progress Bulan Januari	50
Progress Bulan Februari	30
Null	0

Check Segmentation

- Progress Claim
- Progress Bulan Februari
- Progress Bulan Januari



- + [Menu Icon] [List Icon]
- Axis
- Segmentation
- Segmentation(SE)**
- Column
- Wall
- Door/Window Opening
- Beam
- Slab
- Steel Structure
- Staircase
- Finishes
- Prefabrication
- Foundation
- Excavation
- Others
- Custom Element
- Custom Quantity



Quantity Reporting



Quantity Reporting

- **Step 1:** After Calculate, go to View Quantity by Category
- **Step 2:** Set Classification and Quantity → Tick the desired segmentation (ex: Progress Claim).
- **Step 3:** Element Quantity → Tick the necessary quantities

The screenshot displays the 'View Quantity by Category' window. On the left, a tree view lists element types: Column, Wall, Beam, In-situ Slab, Pile Cap, and Raft Foundation. The main table shows classification conditions for 'Beam' elements, with 'Progress Claim' selected. A red dashed box highlights the 'Set Classification and Quantity' dialog box (Step 2), which contains a table of attributes and their usage. Another red dashed box highlights the 'Element Quantity' dialog box (Step 3), showing a list of quantities to be included in the report, with 'Volume' and 'Area of formwork' checked. A third red dashed box highlights the 'QUANTITY' tab in the software's navigation bar (Step 1), where the 'View Quantity by Category' button is highlighted.

Classification Condition	Attribute	Use
1	Construction Zone	<input type="checkbox"/>
2	Subcontracting	<input type="checkbox"/>
3	Progress Claim	<input checked="" type="checkbox"/>
4	Custom	<input type="checkbox"/>
5	Zone	<input type="checkbox"/>
6	Floor	<input checked="" type="checkbox"/>
7	Name	<input type="checkbox"/>
8	Name Suffix	<input type="checkbox"/>
9	Material	<input type="checkbox"/>
10	Concrete Grade	<input type="checkbox"/>
11	Entity Type	<input type="checkbox"/>
12	Section Shape	<input type="checkbox"/>
13	Section Width	<input type="checkbox"/>
14	Section Height	<input type="checkbox"/>
15	Axis to Left Sideline	<input type="checkbox"/>
16	Category 1	<input type="checkbox"/>
17	Category 2	<input type="checkbox"/>
18	Concrete Type	<input type="checkbox"/>

Element Quantity	Checked
All Quantities	<input checked="" type="checkbox"/>
Volume	<input checked="" type="checkbox"/>
Area of formwork	<input checked="" type="checkbox"/>
Area of formwork for strut...	<input type="checkbox"/>
Area of formwork to side ...	<input type="checkbox"/>
Area of formwork to side ...	<input type="checkbox"/>
Area of formwork to soffit...	<input type="checkbox"/>
Area of formwork to soffit...	<input type="checkbox"/>
Area of formwork to top	<input type="checkbox"/>
Area of formwork to top f...	<input type="checkbox"/>
Girth of section	<input type="checkbox"/>
Net length	<input type="checkbox"/>
Weight of rebar	<input type="checkbox"/>
Number	<input type="checkbox"/>
Volume of infill concrete	<input type="checkbox"/>
Length of axis	<input type="checkbox"/>

1

2

3

Quantity Reporting

- Volume of concrete and area of formwork are now separated by each progress.
- Total quantities are constant, preventing any overclaimed and underclaimed amounts.
 - *[Null] : Entities outside progress claims*
- View Expression can be used to re-check the calculation, especially if Define Work Done was applied

View Quantity by Category

Column

- Wall
- Beam
- In-situ Slab
- Pile Cap
- Raft Foundation

Set Element Range Set Classification and Quantity Export to Excel Temp

Classification Condition		Name	Volume(m3)	Area of formwork(m2)
Progress Claim	Floor	K1	23.670	92.040
[Null]	Basement	K2	7.872	30.176
		K2A	15.744	60.352
		WC1	20.103	114.932
		WC2	3.692	25.763
		K3	27.294	135.664
Progress Bulan Januari	Basement	K1	23.670	91.860
		K3	18.675	92.826
		WC1	20.103	114.932
		WC2	3.693	25.744
Total			164.514	784.289

View Element Entity Quantity Expression

Element Type: [] Element Name: K3 Quantity Name: [All]

Quantity Name	Quantity Expression	Quantity	Unit	Segmentation	Count Tag
1 Volume	$0.650 \times \text{Length} \times 0.650 \times \text{Width} \times 3.400 \times \text{Height}$	1.437	m3	Original	<input checked="" type="checkbox"/>
2 Area of formwork	$8.840 \times \text{Original area of formwork to column} - 1.700 \times \text{Deduct wall}$	7.140	m2	Original	<input checked="" type="checkbox"/>
3 Number		1	pc	Original	<input checked="" type="checkbox"/>
4 Weight of rebar	$1.437 \times \text{Volume} \times 150.000 \times \text{Steel ratio}$	215.475	kg	Original	<input checked="" type="checkbox"/>
5 Girth	$(0.650 \times \text{Length} + 0.650 \times \text{Width}) \times 2$	2.600	m	Original	<input checked="" type="checkbox"/>
6 Volume	$50\% \times 1.437 \times \text{Original Volume}$	0.718	m3	PC Progress Bulan Januari	
7 Area of formwork	$50\% \times 7.140 \times \text{Original Area of formwork}$	3.570	m2	PC Progress Bulan Januari	

Quantity Reporting for Mixture of Segmentations

- **Step 1:** Set Classification and Quantity → Tick the desired segmentations (ex: Progress Claim & Sub-Contracting).
- **Step 2:** Use Move Down or Move Up to adjust the filter hierarchy

1

Progress Claim	Subcontracting	Floor	Name	Volume(m3)	Area of formwork(m2)	Number(pc)	Weight of rebar(kg)	Girth(m)
			K1	23.670	92.040	6	3550.502	27.600
			K2	7.872	30.176	2	1180.800	9.200
			K2A	15.744	60.352	4	2361.599	18.400
		Basement	K3	27.294	135.664			
			WC1	20.103	114.932			
			WC2	3.692	25.763			
			K1	11.835	46.020			
		Basement	K3	10.056	49.986			
			WC1	10.047	57.502			
			K1	11.835	45.840			
			K3	8.619	42.840			
		Basement	WC1	10.056	57.430			
			WC2	3.693	25.744			
		Total		164.514	784.289			

2



- + [Menu Icon] [List Icon]
- Axis
- Segmentation
- Segmentation(SE)**
- Column
- Wall
- Door/Window Opening
- Beam
- Slab
- Steel Structure
- Staircase
- Finishes
- Prefabrication
- Foundation
- Excavation
- Others
- Custom Element
- Custom Quantity



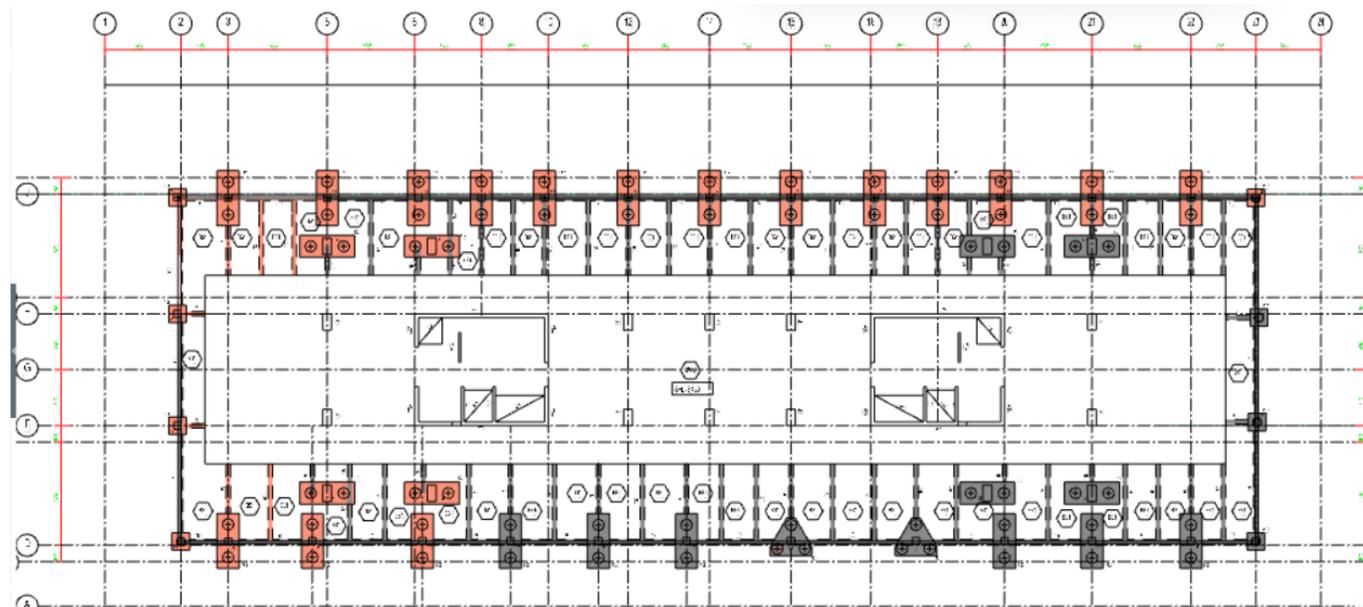
Check Segmentation



Case: Reporting Work Progress

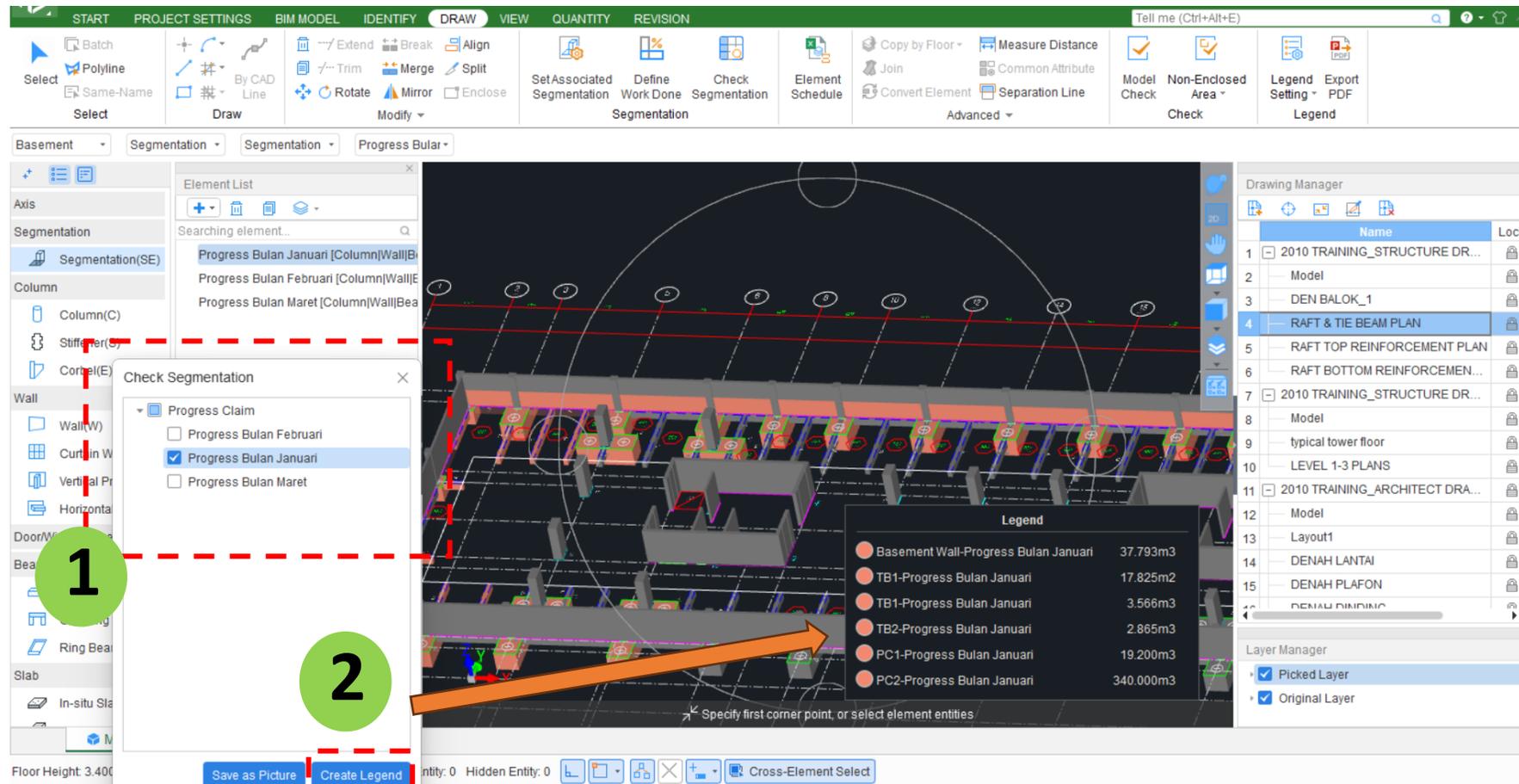
In general, work progress is reported through highlighted drawings. Colored objects indicate completed work, while greyed-out objects represent tasks that have not yet started.

In **Cubicost TAS C-VI**, segmentation zones drawn on the model can be distinguished from excluded areas using **Check Segmentation**. Additionally, the segmentation can be exported as a PDF along with detailed quantity information.



Check Segmentation

- **Step 1:** Check Segmentation → Choose the segmentation name
- **Step 2:** Create Legend to show the quantities (optional). Make sure to display the drawing to give a better view



Check Segmentation

- Step 3: Go to 2D Plan View
- Step 4: Export PDF → Change to White & Background Contrast Color

The screenshot displays the CubiCost software interface. The ribbon at the top includes tabs for START, PROJECT SETTINGS, BIM MODEL, IDENTIFY, DRAW, VIEW, QUANTITY, and REVISION. The 'DRAW' tab is active, showing various drawing tools. The 'VIEW' tab is also visible, with the 'Export PDF' button highlighted by a red dashed box and a green circle labeled '4'. The drawing area shows a 2D plan view of a structure with a grid of columns and beams. A green circle labeled '3' is placed over the drawing area. The 'Check Segmentation' dialog box is open, showing a list of elements and their volumes. The 'Export PDF' dialog box is also open, with the 'Background' checkbox checked and the 'CAD Line' checkbox checked. The 'Drawing Manager' panel on the right shows a list of drawing sheets, with 'RAFT & TIE BEAM PLAN' selected. The 'Layer Manager' panel at the bottom right shows the 'Picked Layer' and 'Original Layer' checked.

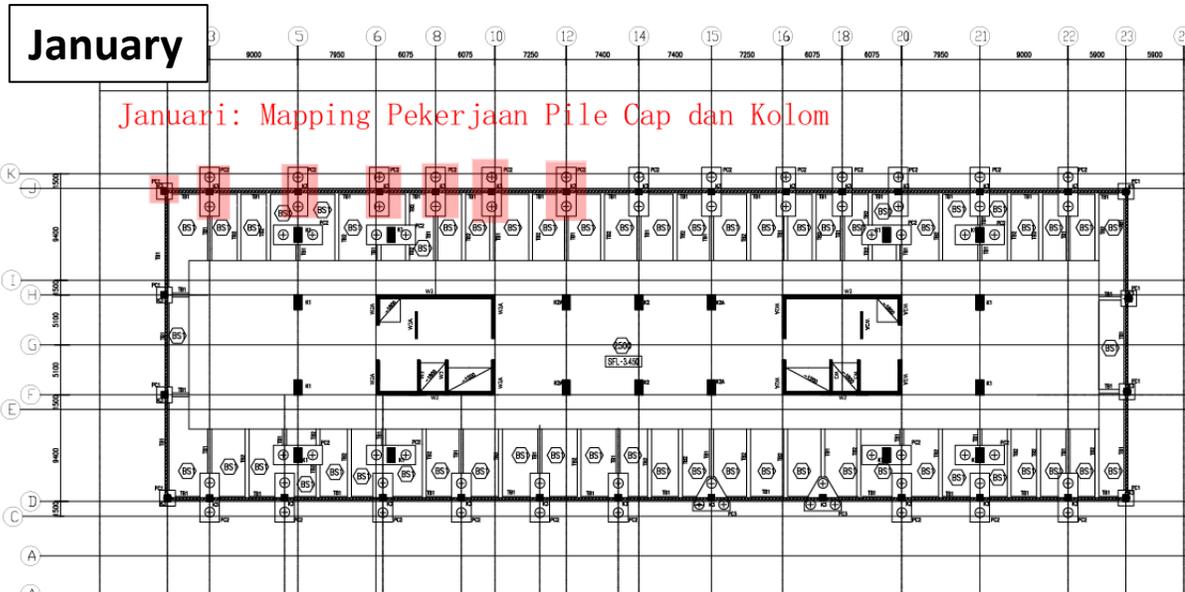
Element Name	Volume (m3)
Basement Wall-Progress Bulan Januari	37.793m3
TB1-Progress Bulan Januari	3.566m3
TB2-Progress Bulan Januari	2.865m3
PC1-Progress Bulan Januari	19.200m3
PC2-Progress Bulan Januari	340.000m3

CASE 1: PROGRESS CLAIM

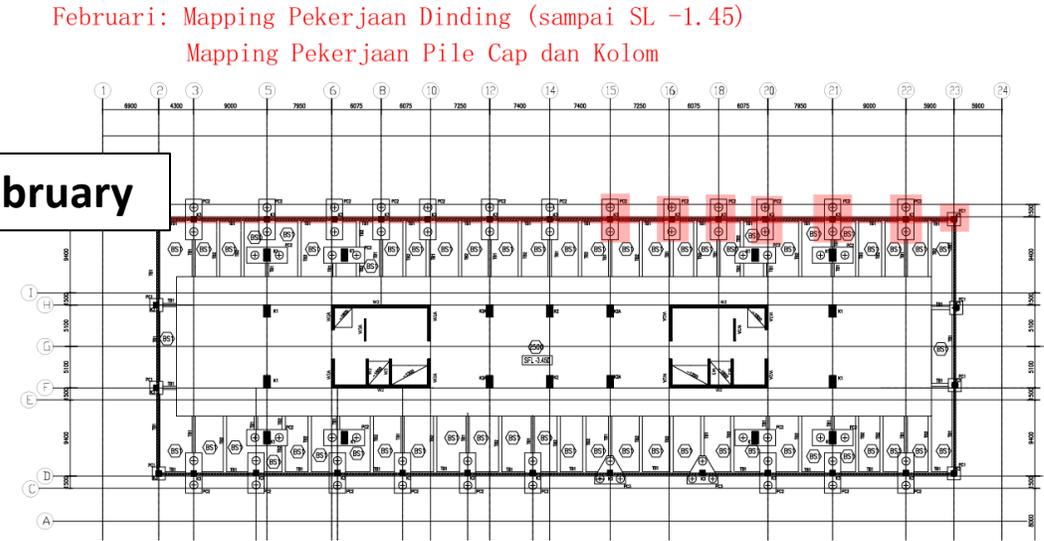
Progress Claim of Foundation, Column, and Wall Basement

Several works have been completed as follows,

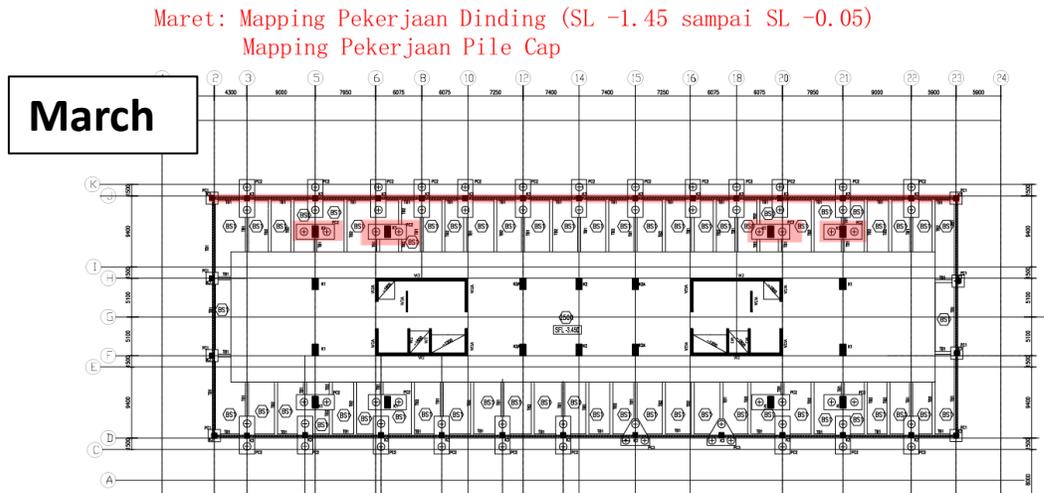
1. 8 Pile Caps and Columns → January 2025
2. Wall (2 m height) → February 2025
3. 7 Pile Caps and Columns → February 2025
4. Wall (remaining height) → March 2025
5. 4 Pile Caps → March 2025



February



March



Progress Claim of Foundation, Column, and Wall Basement

- **Step 1:** Create 3 types of Progress Claims
- **Step 2:** Use Progress Claim → Set Associated Segmentation for Pile Caps, Columns, and Walls
- **Step 3:** For construction in stages, use Define Work Done

The screenshot displays the CubiCost software interface with three key steps highlighted by green circles:

- Step 1:** The 'Element List' panel on the left shows three progress claim entries: 'Progress Januari [Column|Wall|Pile Cap]', 'Progress Februari [Column|Wall|Pile Cap]', and 'Progress Maret [Column|Wall|Pile Cap]'. The 'Progress Maret' entry is selected.
- Step 2:** The 'Set Associated Segmentation' dialog box is open, showing a tree view where 'Progress Januari' is selected. Under 'Progress Januari', the 'Formwork' and 'Concrete' checkboxes are checked.
- Step 3:** The 'Define Work Done' dialog box is open, showing a table for defining work done percentages for different progress claims.

Progress Claim	Percentage (%)
Progress Januari	58
Progress Februari	42
Null	0

The background shows a 2D architectural drawing of a basement foundation with columns and walls, overlaid with a grid and various dimensions.