



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

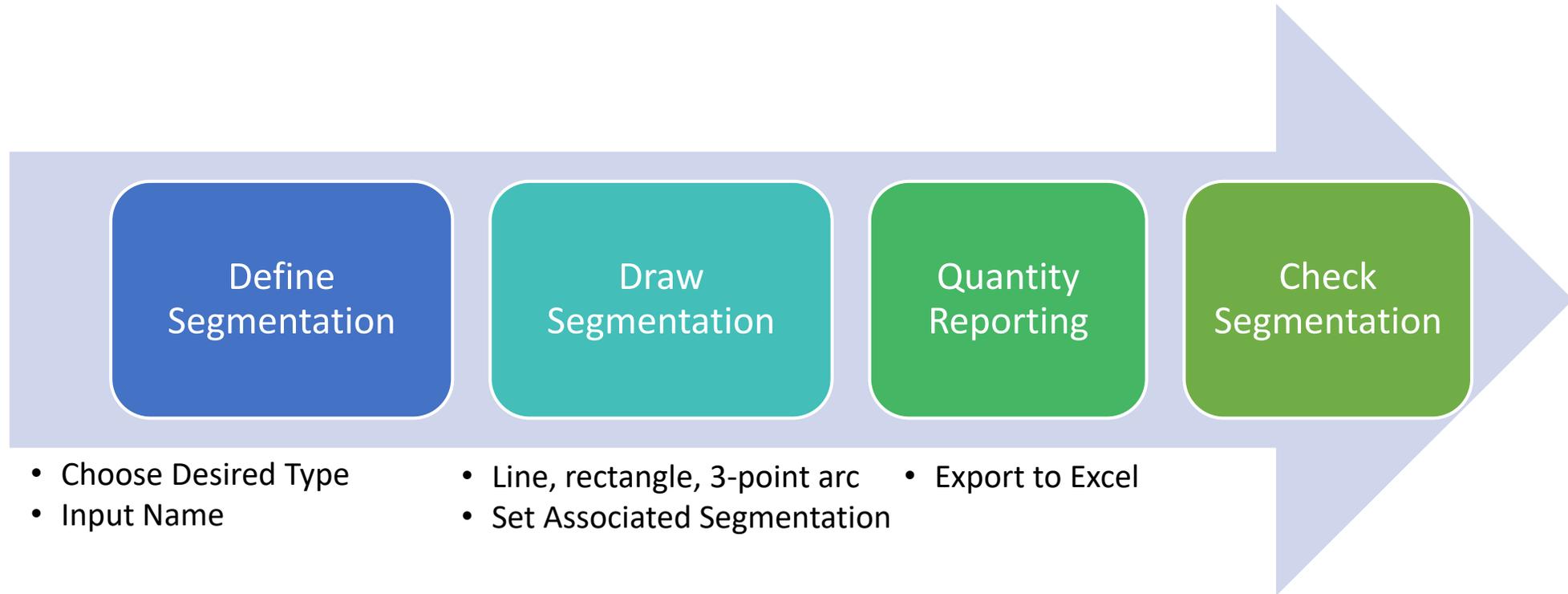


# Segmentation: Beam & Slab



# Segmentation Flow

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# 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 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 tab is also visible, with options like Set Associated Segmentation, Define Work Done Segmentation, Check Segmentation, Element Schedule, Copy by Floor, Measure Distance, Join, Common Attribute, Convert Element, and Separation Line.

The 'Element List' panel shows a list of elements with icons. The 'Progress Claim' element is highlighted with a red dashed box and a green circle labeled '1'. The 'Calculation Scope' dialog is open, showing a list of elements with checkboxes. The 'Slab' element is checked and highlighted with a red dashed box and a green circle labeled '2'. The 'Attribute Editor' table is visible at the bottom, with a green circle labeled '3' next to the 'Name' field.

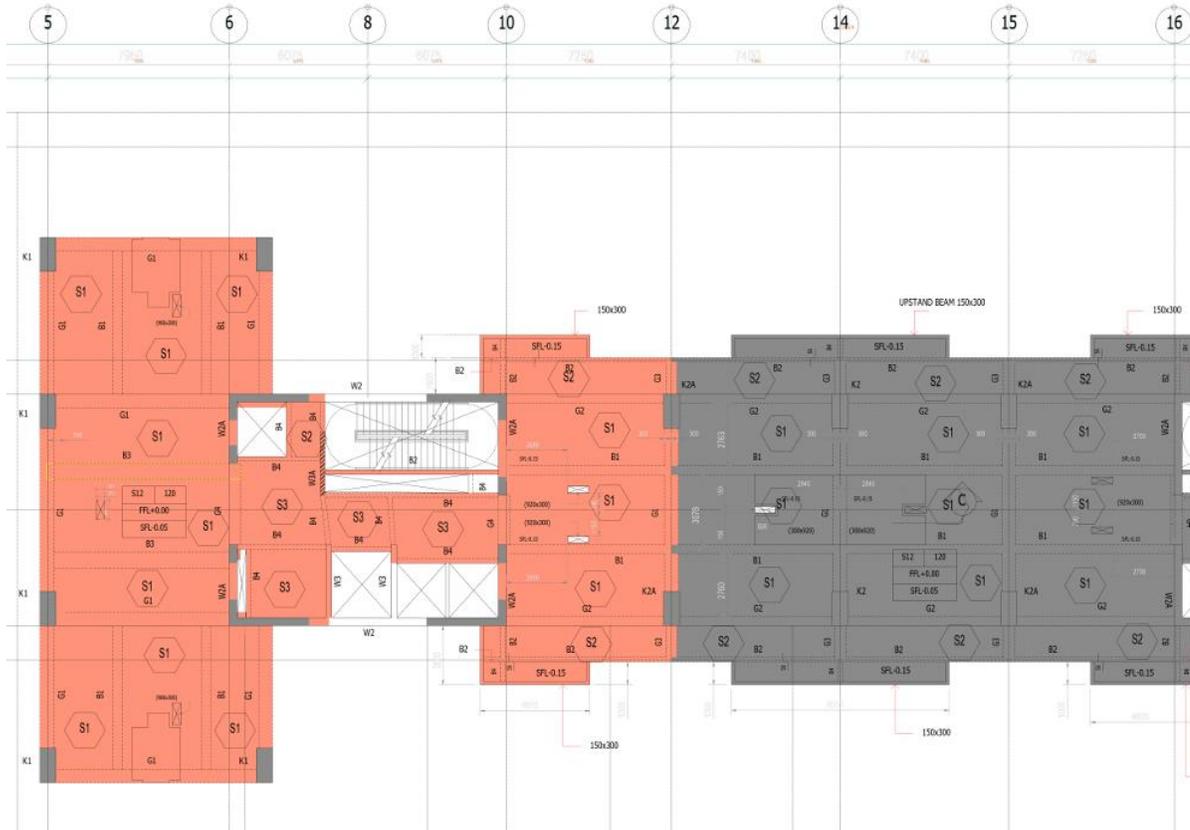
Attribute	Value
Name	Progress Bulan Januari
Segmentati...	Progress Claim
Calculati...	Column Beam Slab Fou
Sequence	1



# Draw Segmentation – Area



# Case: Beams and slabs are cast together

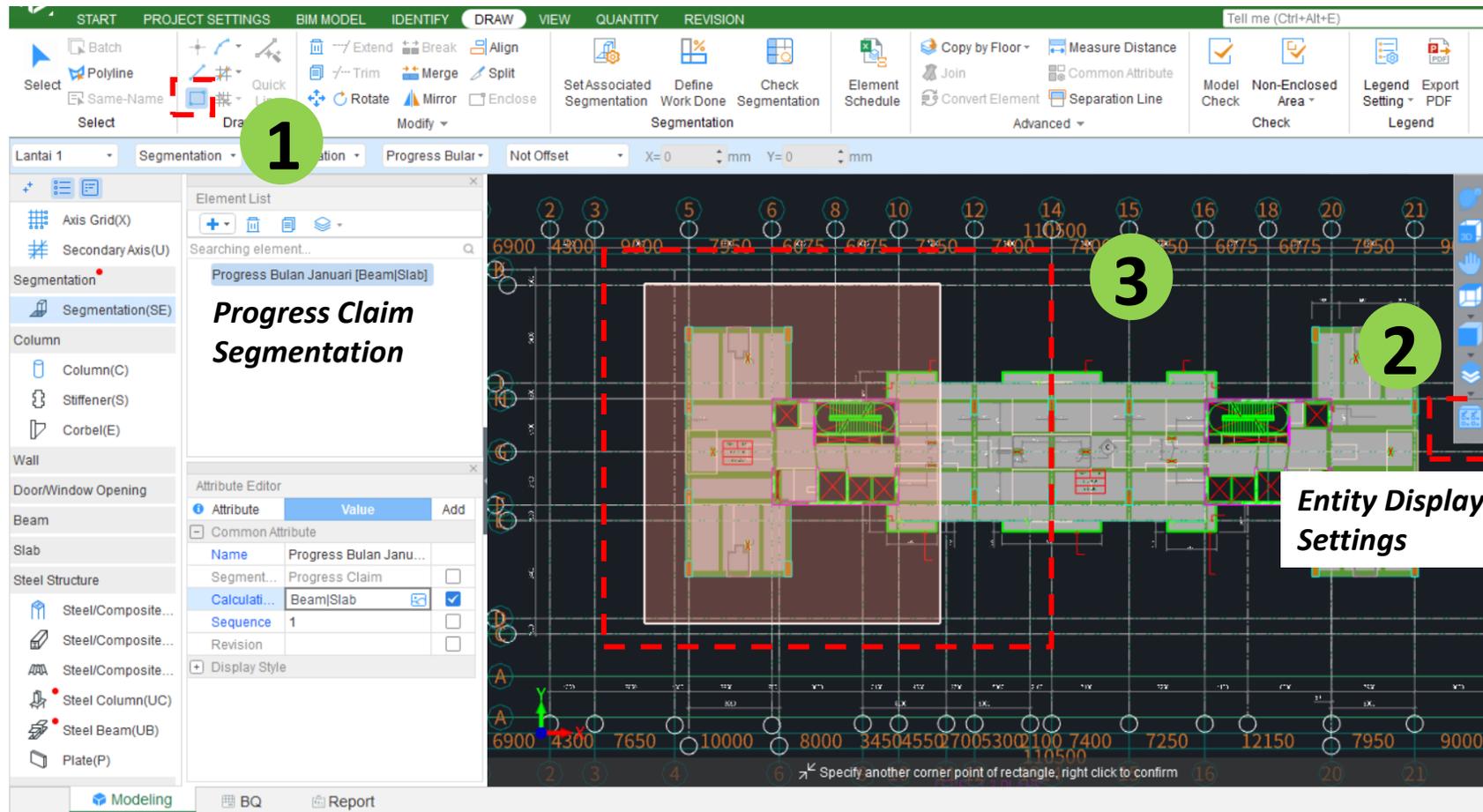


Most upper structure beams and slabs are cast together in a designated area. To obtain the quantities, we can create **segmentation** using the **rectangle** function.

**Entity Display Settings** can also be filtered to show only the necessary elements.

# Draw Segmentation – Area Method

- Step 1: Choose Draw Mode → Line, rectangle, 3-point arc
- Step 2: Entity Display Settings
- Step 3: Draw Segmentation Area



# Draw Segmentation – Mix with Other Segmentation

- **Step 4:** If there are further classifications, you can use additional **but different** segmentation, such as Sub-Contracting, etc.
- **Step 5:** Draw the zone inside the existing zone to obtain more detailed quantities.

**4** These are Subcontracting segmentations

**5**

Attribute	Value	Add
Common Attribute		
Name	Subkon B	
Segmenta...	Subcontracting	<input type="checkbox"/>
Calculatio...	Beam Slab	<input checked="" type="checkbox"/>
Sequence	1	<input type="checkbox"/>
Revision		<input type="checkbox"/>
Display Style		
Fill Color	<span style="background-color: red; width: 20px; height: 10px; display: inline-block;"></span>	
Opacity	30	

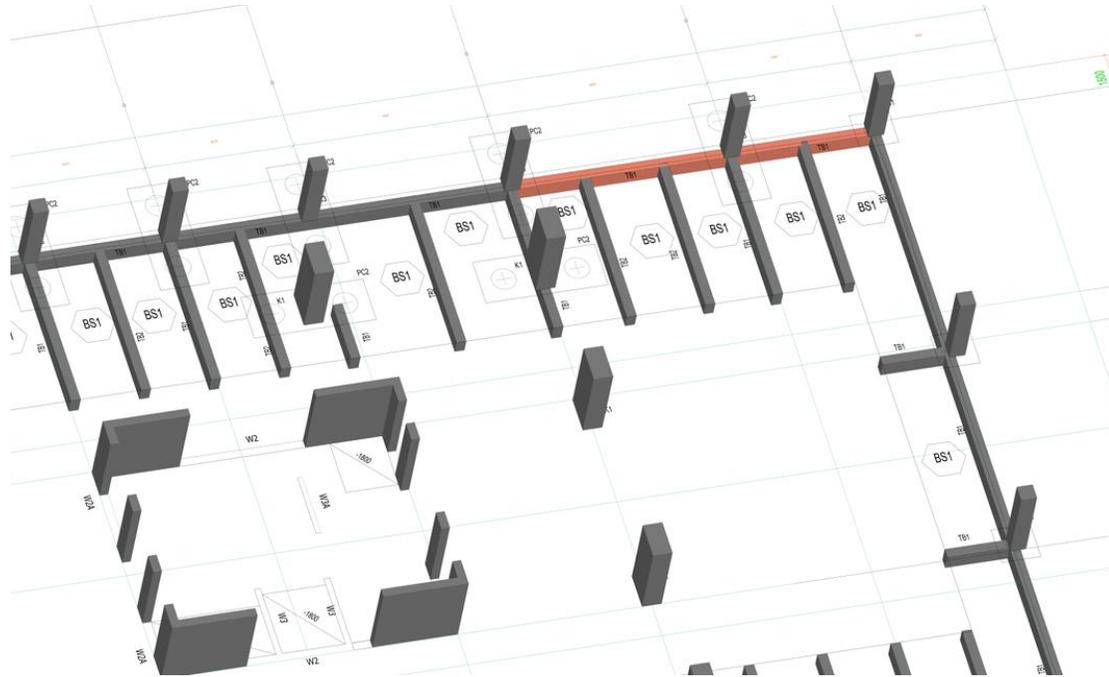
Specify first corner point, or select element entities



# Draw Segmentation – Specific Axis or Element



# Case: Tie beam is constructed in stages following the axis



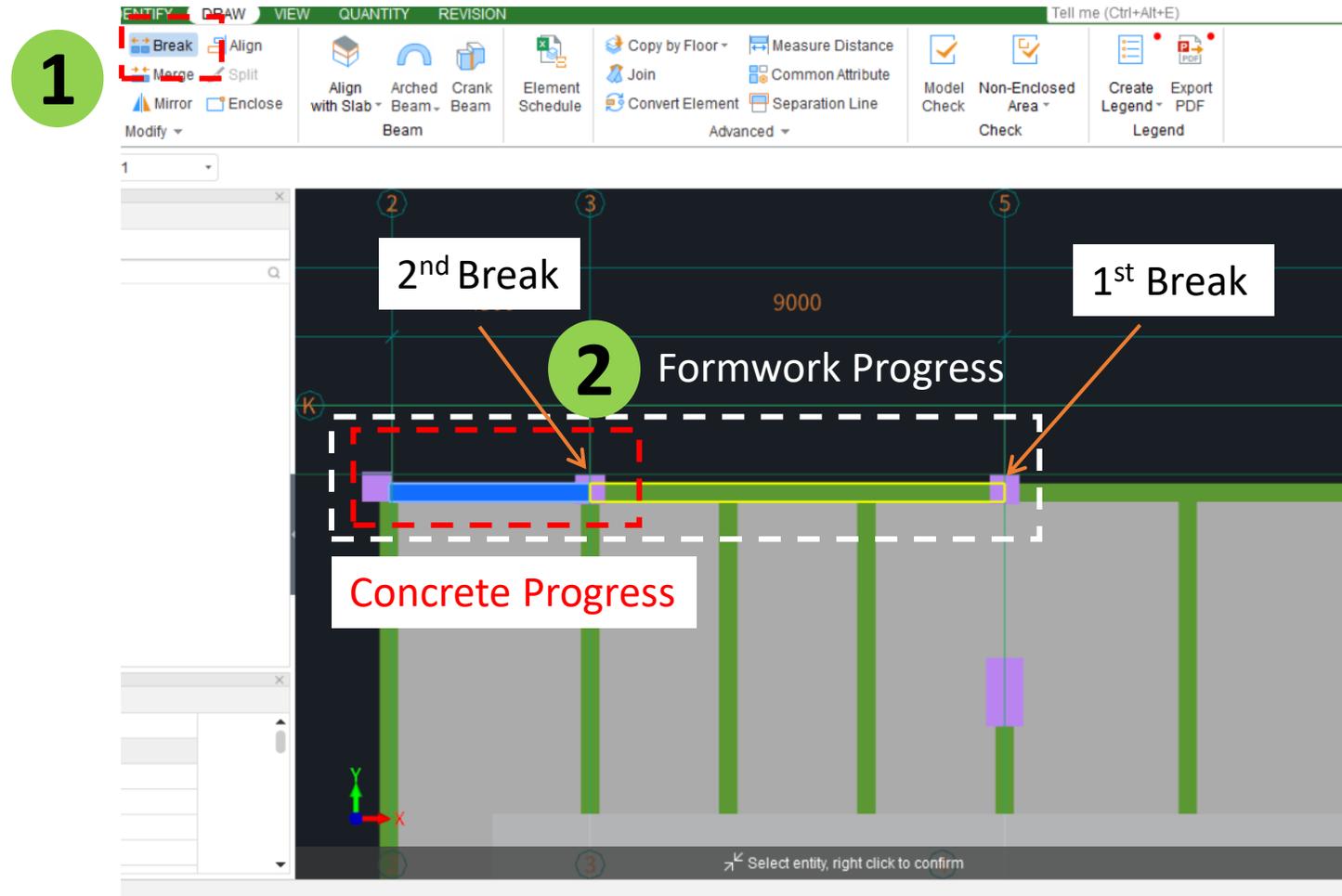
Horizontal elements, such as tie beams, are placed along a straight axis based on their type and constructed separately with slab.

If a segmentation area is drawn, it may overlap with other beams, leading to incorrect quantity allocation in progress claims.

The **Set Associated Segmentation** feature allows zones to be defined per entity, preventing overclaims caused by overlapping beam quantities. When combined with the **break** or **split** function, it enables more precise zone creation.

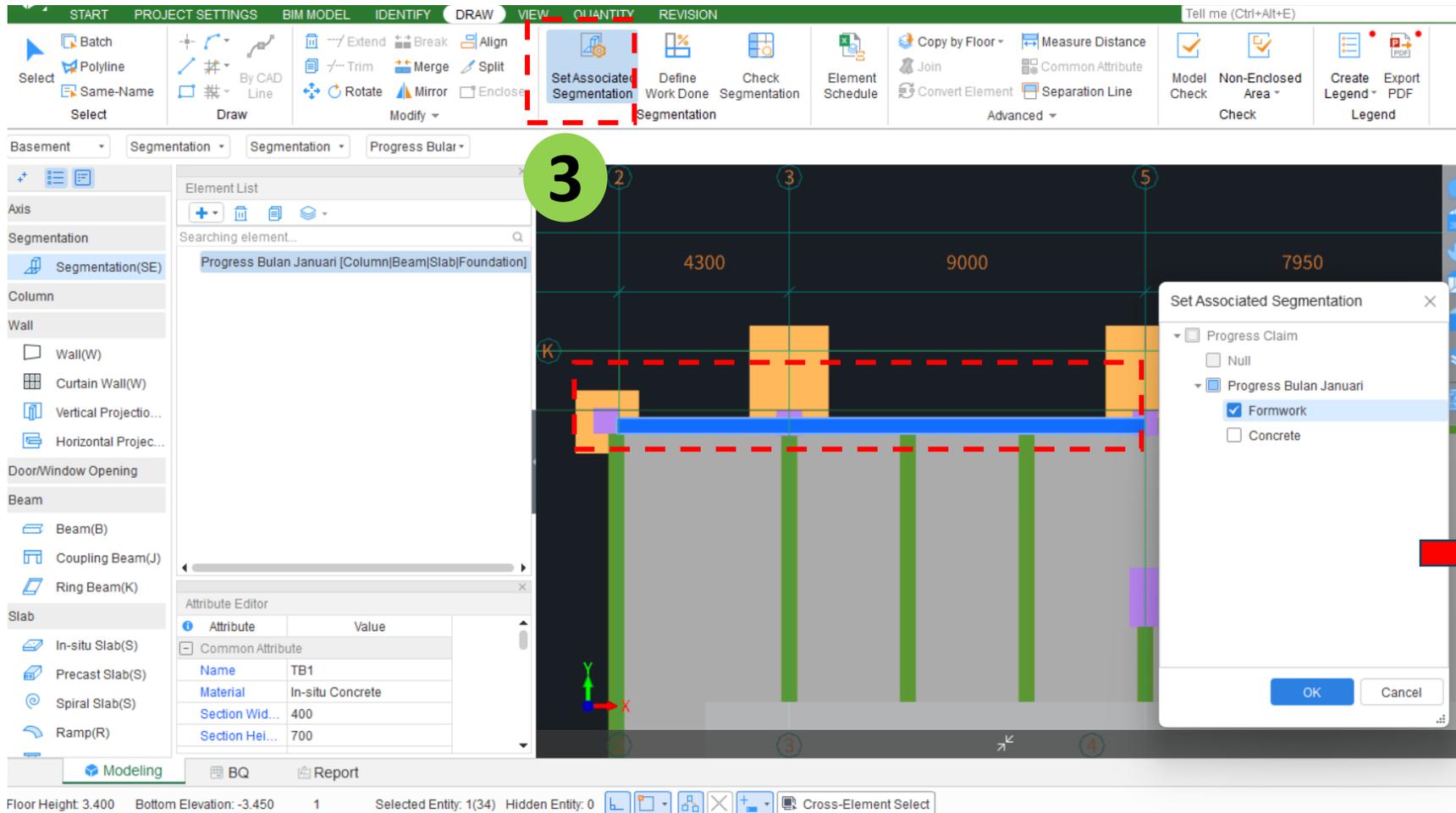
# Draw Segmentation – Specific Axis Method

- **Step 1:** Break or split to smaller parts based on their progress
- **Step 2:** If the formwork progress and concrete progress differ, break it down further

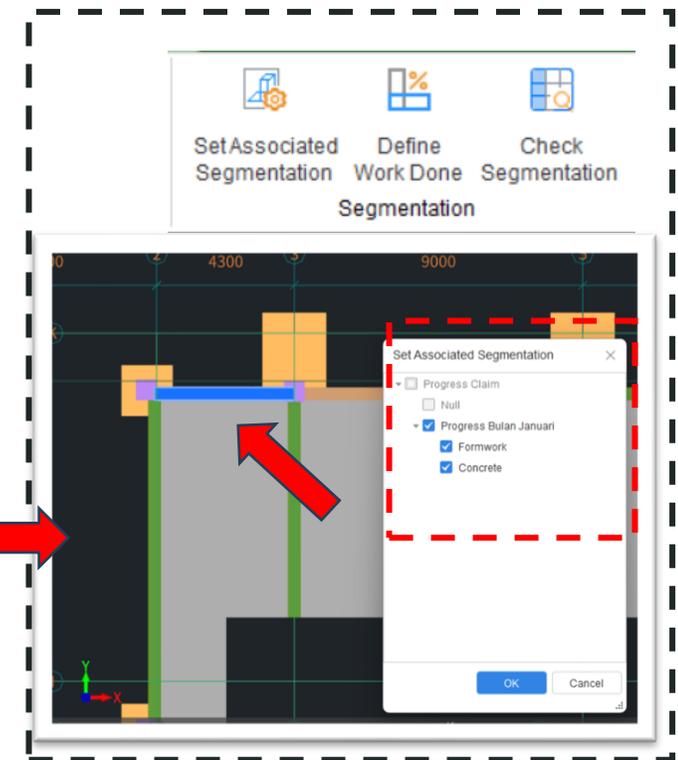


# Draw Segmentation – Specific Axis Method

- **Step 3:** Choose desired work; formwork or/and concrete for each entities



*Formwork progress and concrete progress differ*



# Alternative Method – Block Group of Beams

- Step 1: Tick beam only on Display Settings
- Step 2: Turn on “Cross-Element Select”
- Step 3: Block all necessary beams
- Step 4: Set Associated Segmentation
- Step 5: Choose desired work

The screenshot shows the CubiCost software interface with the following elements:

- Step 1:** The 'Entity Display Settings - Segmentation' dialog box is open, and the 'Beam' checkbox is checked under the 'Element Entity Display' section.
- Step 2:** The 'Cross-Element Select' button in the bottom toolbar is highlighted.
- Step 3:** A group of beams in the 3D model is highlighted with a purple selection box.
- Step 4:** The 'Set Associated Segmentation' dialog box is open, and 'Progress Bulan Januari' is selected with its associated work items 'Formwork' and 'Concrete' checked.
- Step 5:** The 'Entity Display Settings - Segmentation' dialog box is open, and the 'Formwork' and 'Concrete' checkboxes are checked under the 'Element Entity Name Display' section.

**Entity Display Settings**

# How about the Slab on Ground?

- **Step 1:** Use the previous method → Draw Segmentation Area. Make sure calculation scope has been adjusted.

The screenshot displays the CubiCost software interface during the 'DRAW' phase. The top menu bar includes 'START', 'PROJECT SETTINGS', 'BIM MODEL', 'IDENTIFY', 'DRAW', 'VIEW', 'QUANTITY', and 'REVISION'. The 'DRAW' menu is open, showing options like 'Batch', 'Polyline', 'Quick Line', 'Draw', 'Extend', 'Break', 'Align', 'Split', 'Set Associated Segmentation', 'Define Work Done Segmentation', 'Check Segmentation', 'Element Schedule', 'Copy by Floor', 'Join', 'Convert Element', 'Measure Distance', 'Common Attribute', 'Separation Line', 'Model Check', 'Non-Enclosed Area Check', 'Legend Setting', and 'Export PDF'. A red circle with the number '1' highlights the 'Draw' button in the 'DRAW' menu.

The main workspace shows a 3D model of a slab on ground with a grid of columns and beams. The grid lines are labeled with numbers 2, 3, 5, 6, and 8. The slab is segmented into several rectangular areas. A red dashed box highlights the 'Calculation Scope' dialog, which is open on the right side of the screen. The dialog has a list of elements to include in the calculation scope, with 'Slab' checked and highlighted by a red arrow. The other elements in the list are unchecked: Column, Wall, Door/Window Opening, Beam, Steel Structure, Staircase, Finishes, Prefabrication, Foundation, Excavation, Others, Custom Element, and Custom Quantity. The 'OK' button is visible at the bottom right of the dialog.

The bottom status bar shows 'Floor Height: 3.400', 'Bottom Elevation: -3.450', '1', 'Selected Entity: 0', 'Hidden Entity: 0', and a 'Cross-Element Select' button. The CubiCost logo is visible in the bottom right corner.



- + [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 in the CubiCost software. The window is divided into several sections:

- Left Sidebar:** Lists element types: Column, Wall, Beam, In-situ Slab, Pile Cap, Raft Foundation. 'Beam' is selected.
- Main Table:** A table with columns for Classification, Element, and Quantity. It shows progress claims for different months (February, January, Maret) under the 'Basement' category. A 'Total' row is at the bottom.
- Top Bar:** Contains buttons for 'Set Element Range', 'Set Classification and Quantity', 'Export to Excel', and 'Template'. A green circle with the number '1' highlights the 'Quantity' button in the top navigation bar.
- Dialog Box:** A 'Set Classification and Quantity' dialog box is open, showing a list of 'Element Type' and 'Classification Condition' with checkboxes for 'Use'. A green circle with the number '2' highlights the 'Set Classification and Quantity' button in the top bar. Another green circle with the number '3' highlights the 'Element Quantity' section of the dialog, which contains a list of quantities to be included in the report, such as 'Volume' and 'Area of formwork'.

The 'Quantity' button in the top navigation bar is highlighted with a green circle and the number '1'. The 'Set Classification and Quantity' button in the top bar is highlighted with a green circle and the number '2'. The 'Element Quantity' section of the dialog box is highlighted with a green circle and the number '3'.

# Quantity Reporting

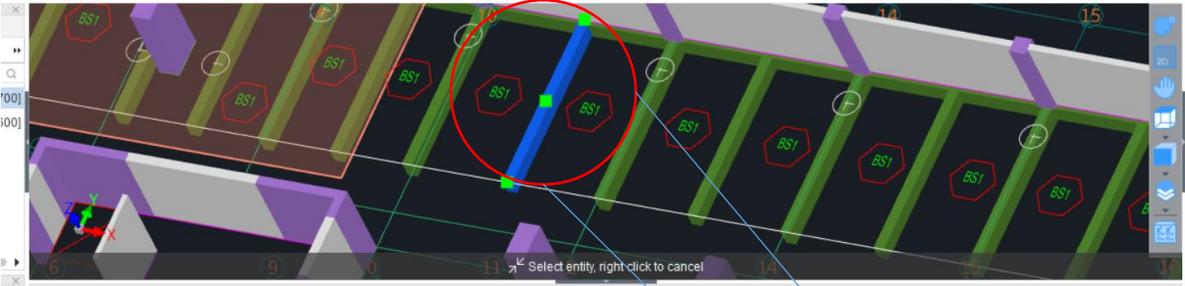
- Volume of concrete and area of formwork are now separated by each progress.
- Total quantities are constant, preventing any overclaimed and underclaimed amounts.
  - *[Null] : Entities outside progress claims*
- View Expression can be used to re-check the calculation

### View Quantity by Category

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

Set Element Range
Set Classification and Quantity
Export to E

Classification Condition		Quantity	
Progress Claim	Floor	Volume(m3)	Area of formwork(m2)
1 [Null]	Basement	44.141	361.020
2 Progress Bulan Februari	Basement	7.781	73.837
3 Progress Bulan Januari	Basement	4.885	50.012
4 Progress Bulan Maret	Basement	24.105	170.003
5 Total		80.911	654.871



View Element Entity Quantity Expression

Quantity Name	Quantity Expression	Quantity	Unit	Segmentation	Count Tag	Remarks
9 Length of axis		7.003	m	Original	<input checked="" type="checkbox"/>	
10 Area of formwork	100%*7.483<Original   Area of formwork>	7.483	m2	PCIProgress Bulan Februari		
11 Area of formwork to side of beam	100%*4.762<Original   Area of formwork to side of beam>	4.762	m2	PCIProgress Bulan Februari		
12 Area of formwork to soffit of beam	100%*2.721<Original   Area of formwork to soffit of beam>	2.721	m2	PCIProgress Bulan Februari		
13 Volume	100%*0.952<Original   Volume>	0.952	m3	PCIProgress Bulan Maret		
14 Girth of section	100%*2.000<Original   Girth of section>	2.000	m	PCIProgress Bulan Maret		

# 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

The screenshot displays the 'View Quantity by Category' window. On the left, a list of categories is shown, with 'Beam' selected. The main area shows a table with columns for 'Progress Claim', 'Subcontracting', 'Floor', 'Volume(m3)', and 'Area of formwork(m2)'. A red dashed box highlights the 'Set Classification and Quantity' dialog box, which is open over the table. The dialog has three main sections: 'Element Type', 'Classification Condition', and 'Element Quantity'. In the 'Classification Condition' section, 'Progress Claim' and 'Subcontracting' are checked in the 'Use' column. In the 'Element Quantity' section, 'Volume' and 'Area of formwork' are checked. At the bottom of the dialog, 'Move Up' and 'Move Down' buttons are highlighted with a red dashed box and a green circle labeled '2'. A green circle labeled '1' is also present in the top right of the dialog box.

Progress Claim	Subcontracting	Floor	Volume(m3)	Area of formwork(m2)
[Null]	[Null]	Lantai 1	52.217	409.495
Progress Bulan Januari	Subkon A	Lantai 1	17.812	136.757
	Subkon B	Lantai 1	17.078	128.393
	Total		87.107	674.644



- + [Icons]
- Axis
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- Slab
- Steel Structure
- Staircase
- Finishes
- Prefabrication
- Foundation
- Excavation
- Others
- Custom Element
- Custom Quantity



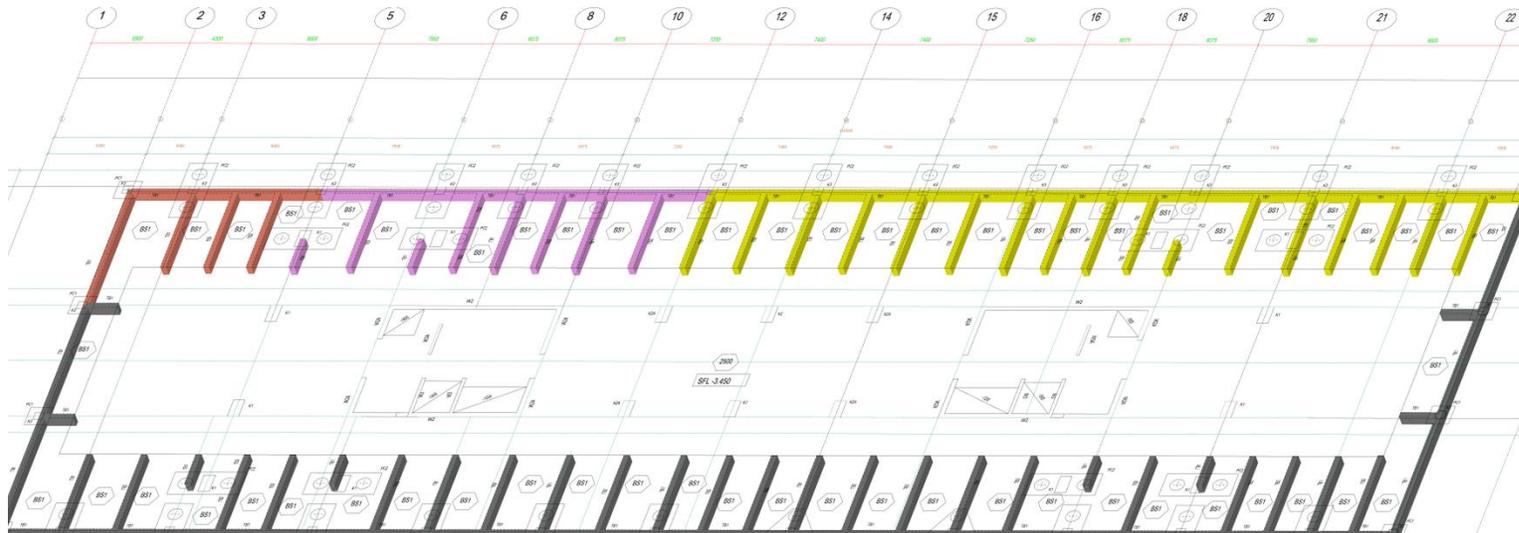
# Check Segmentation



# 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

1

The screenshot shows the CubiCost software interface with the 'DRAW' tab active. A 'Check Segmentation' dialog box is open, showing a list of segmentation names: 'Progress Claim', 'Progress Bulan Februari', 'Progress Bulan Januari', and 'Progress Bulan Maret'. The 'Progress Claim' is checked. Below the dialog, there are buttons for 'Save as Picture' and 'Create Legend'. A 'Legend' table is also visible, listing various beam types and their quantities.

Legend	Quantity
TB1[400*700]-Progress Bulan Februari	5.714m3
TB1[400*700]-Progress Bulan Januari	4.241m3
TB1[400*700]-Progress Bulan Maret	13.091m3
TB2[400*600]-Progress Bulan Februari	3.529m3
TB2[400*600]-Progress Bulan Januari	1.905m3
TB2[400*600]-Progress Bulan Maret	8.291m3

2

# 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 'Check Segmentation' and 'Export PDF' buttons are highlighted with red dashed boxes and a green circle with the number '4'. The 'Check Segmentation' dialog box is open, showing a list of elements to check, including 'Progress Claim', 'Progress Bulan Februari', 'Progress Bulan Januari', and 'Progress Bulan Maret'. The 'Export PDF' dialog box is also open, with options for 'Background: Change to White' and 'CAD Line: Background contrast color'. The 'Legend' table is visible at the bottom right, listing various elements and their volumes.

Legend	
● TB1[400*700]-Progress Bulan Februari	5.714m3
● TB1[400*700]-Progress Bulan Januari	4.241m3
● TB1-Progress Bulan Januari	3.566m3
● TB2-Progress Bulan Januari	2.865m3
● PC1-Progress Bulan Januari	19.200m3
● PC2-Progress Bulan Januari	340.000m3

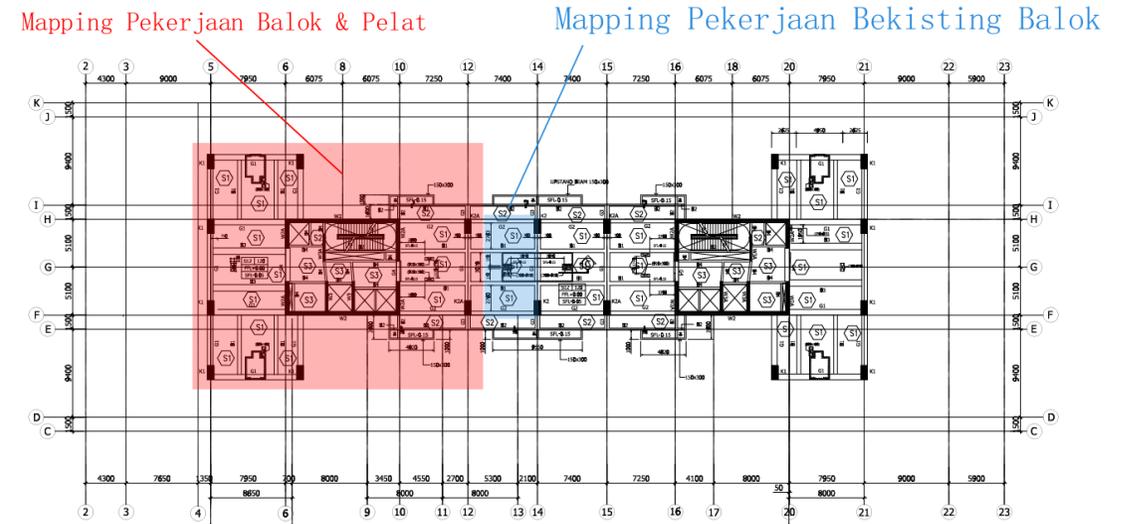
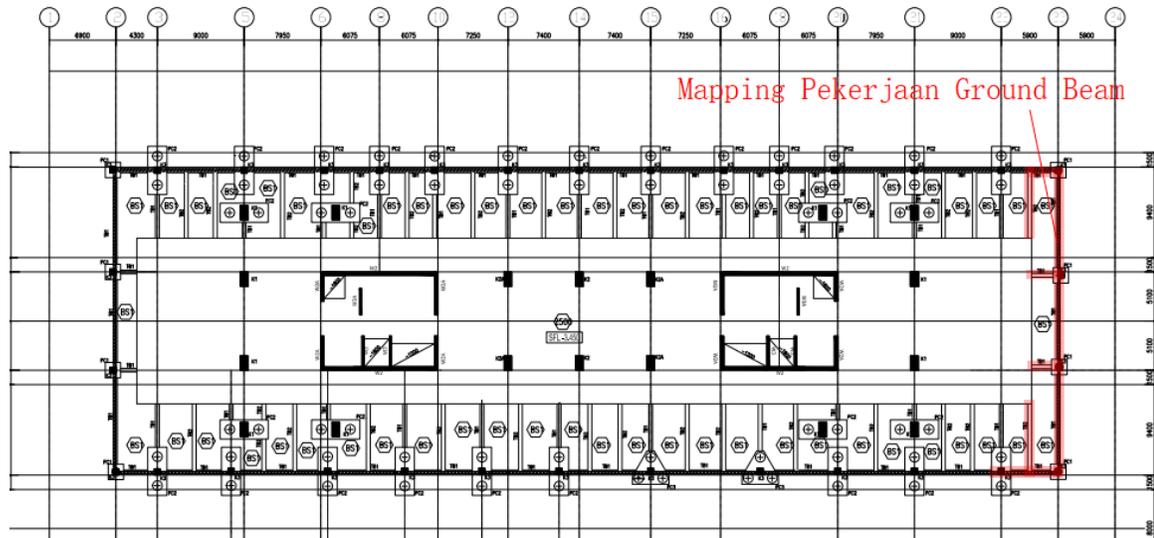
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# CASE 1: PROGRESS CLAIM

# Progress Claim of Beam & Slab Basement and 1<sup>st</sup> Floor

In January 2025, two construction activities has been finished. Below are the reports from site engineer.

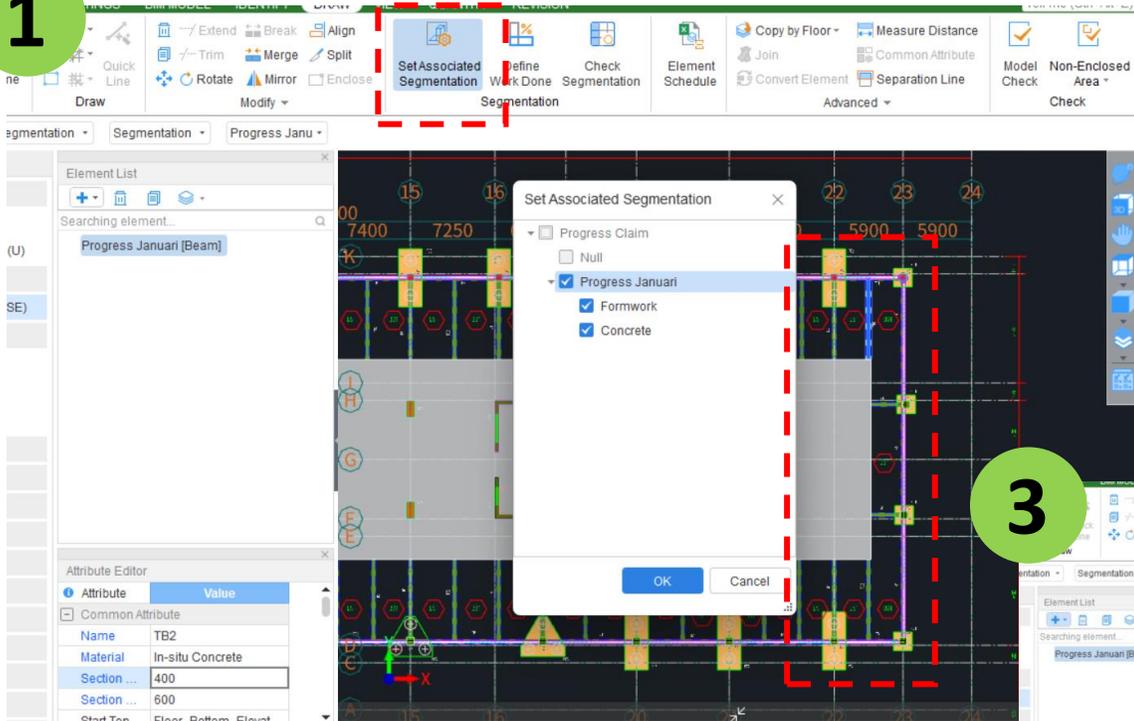
1. Ground beam work at the basement
2. Beam and slab work on the 1st floor
  - Some beams and slabs have been successfully cast together, while some beams remain uncast, with only their formwork completed.



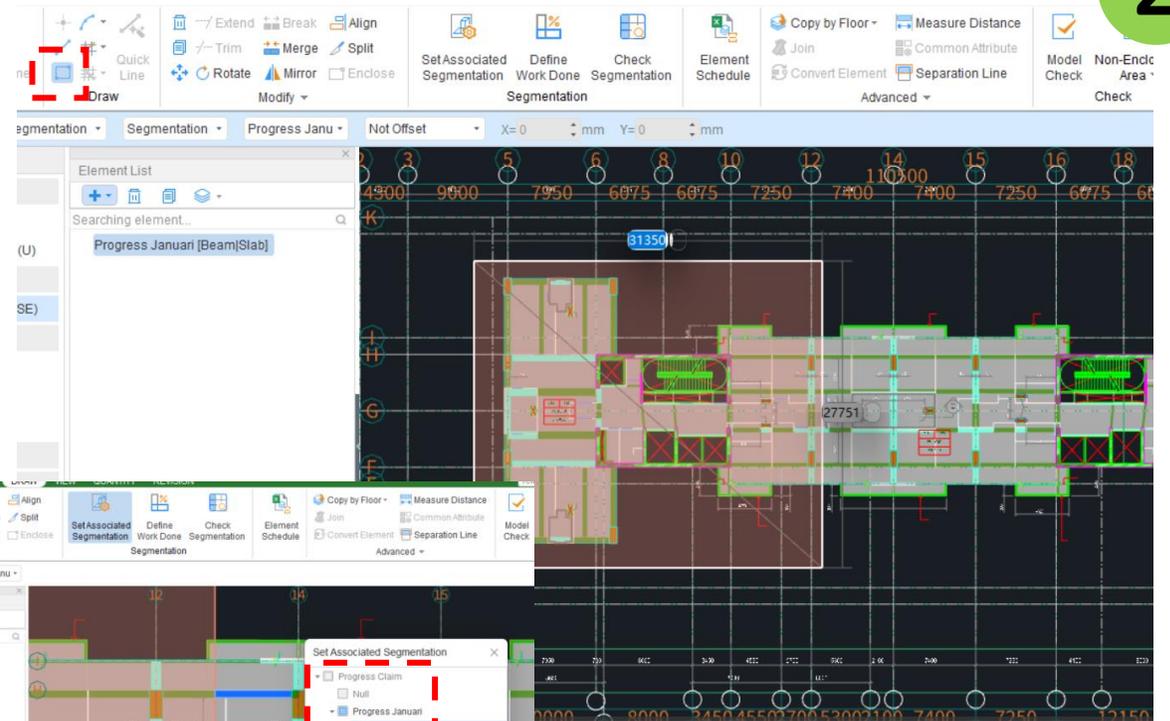
# Progress Claim of Beam & Slab Basement and 1<sup>st</sup> Floor

- **Step 1:** Use Progress Claim → Set Associated Segmentation for Ground Beams
- **Step 2:** Use Progress Claim → Draw by Area for Beam and Slabs
- **Step 3:** Use Progress Claim → Combine “Break” and Set Associated Segmentation for Beam Formwork

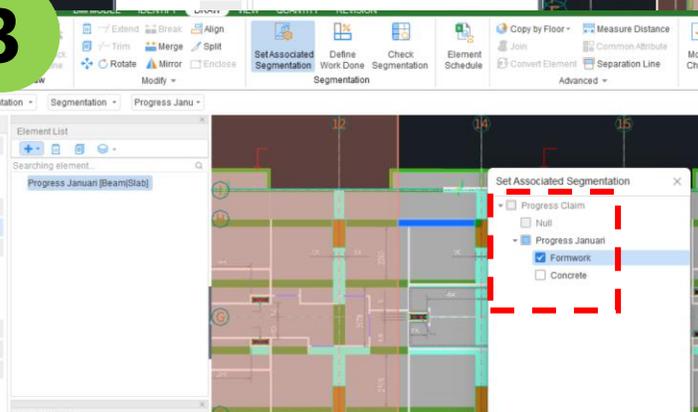
1



2



3



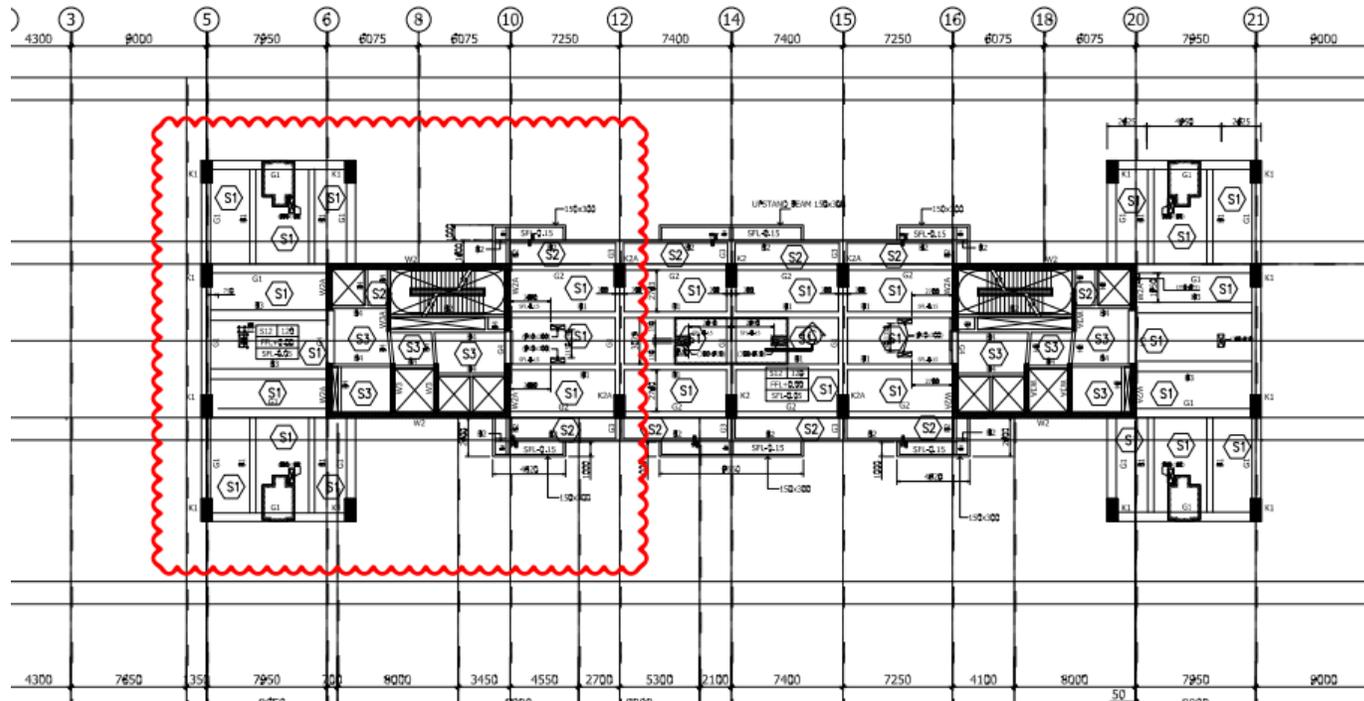
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# CASE 2: MATERIAL ORDER

# Zoning of Beam & Slab Casting at 1<sup>st</sup> Floor

A total of 100 m<sup>3</sup> of concrete is scheduled to be cast for the beam and slab together. The mapping below is still an estimate and requires verification using Cubicost. The updated and accurate zoning will serve as the work order for the next casting.

Zona Pengecoran Balok & Pelat 100 m<sup>3</sup>



# Zoning of Beam & Slab Casting at 1<sup>st</sup> Floor

- Step 1: Use Construction Zone → Draw by Area for Beam and Slabs
- Step 2: Check the quantity using View Quantity by Category

1

The screenshot shows the software interface for Step 1. The top toolbar includes 'Draw' and 'Modify' sections. The central drawing area displays a grid with dimensions and a highlighted construction zone. The right-side menu has 'Beam' and 'In-situ Slab' selected. The 'Element List' on the left shows 'Construction Zone-1 [Beam|Slab]'. The 'Attribute Editor' at the bottom left shows 'Name: Construction Zone-1', 'Segment...: Construction Zone', 'Calculati...: Beam|Slab', and 'Sequence: 1'.

2

Classification Condition							
Construction Zone	Floor	Material	Concrete Grade	Entity Type	Volume(m3)	Area of formwork(m2)	Area of formwork to side of beam(m2)
1	[Null]	Lantai 1	In-situ Concrete	Horizontal	47.993	368.759	248.011
2				Subtotal	47.993	368.759	248.011
3				Subtotal	47.993	368.759	248.011
4	Subtotal				47.993	368.759	248.011
5	Subtotal				47.993	368.759	248.011
6	Construction Zone-1	Lantai 1	In-situ Concrete	Horizontal	41.759	319.789	214.278
7				Subtotal	41.759	319.789	214.278
8				Subtotal	41.759	319.789	214.278
9	Subtotal				41.759	319.789	214.278
10	Subtotal				41.759	319.789	214.278
11	Total				89.752	688.548	462.289

Classification Condition							
Construction Zone	Floor	Concrete Grade	Entity Type	Thickness	Volume(m3)	Area(m2)	Area of formwork to soffit
1	[Null]	Lantai 1	30.00	Horizontal	120	62.268	533.759
2					Subtotal	62.268	533.759
3					Subtotal	62.268	533.759
4	Subtotal				62.268	533.759	
5	Subtotal				62.268	533.759	
6	Construction Zone-1	Lantai 1	30.00	Horizontal	120	54.754	469.785
7					Subtotal	54.754	469.785
8					Subtotal	54.754	469.785
9	Subtotal				54.754	469.785	
10	Subtotal				54.754	469.785	
11	Total				117.022	1003.545	