



## USER MANUAL

# Simbi Rebar User Manual

The complete guide to detailing reinforcement and producing Bar Bending Schedules in Autodesk Revit with Simbi Rebar.

### STANDARDS BASIS

SANS 10100-1

SANS 51992-1

SANS 10144:2010

EN 1992-1-1

### PLANNED FOR A FUTURE RELEASE

BS 8666:2020

ACI 318

## Contents

|           |                                            |           |
|-----------|--------------------------------------------|-----------|
| <b>1</b>  | <b>Introduction</b>                        | <b>2</b>  |
| <b>2</b>  | <b>How Simbi Rebar works</b>               | <b>2</b>  |
| <b>3</b>  | <b>The ribbon at a glance</b>              | <b>3</b>  |
| <b>4</b>  | <b>Foundation reinforcement</b>            | <b>4</b>  |
| <b>5</b>  | <b>Column reinforcement</b>                | <b>5</b>  |
| <b>6</b>  | <b>Wall reinforcement</b>                  | <b>6</b>  |
| <b>7</b>  | <b>Beam reinforcement</b>                  | <b>7</b>  |
| <b>8</b>  | <b>Batch propagation</b>                   | <b>8</b>  |
| <b>9</b>  | <b>Reinforcement density</b>               | <b>9</b>  |
| <b>10</b> | <b>Generating the Bar Bending Schedule</b> | <b>10</b> |
| <b>11</b> | <b>Licensing &amp; subscription</b>        | <b>11</b> |
| <b>12</b> | <b>Tips &amp; best practices</b>           | <b>12</b> |
| <b>13</b> | <b>Support &amp; resources</b>             | <b>12</b> |

# 1. Introduction

Simbi Rebar is a reinforcement-detailing add-in for Autodesk Revit. It places code-compliant reinforcement into your Revit model and produces a Bar Bending Schedule (BBS) in Microsoft Excel — turning hours of manual bar modelling and scheduling into a guided, repeatable workflow.

The name comes from *insimbi*, the Nguni word for iron and steel. Simbi Rebar is built for structural engineers and rebar detailers working to South African and Eurocode standards.

## Standards basis

Simbi Rebar's reinforcement rules and schedule shape codes are based on the standards below. Every dialog and schedule shows the governing clause it has applied.

| Standard        | Role in Simbi Rebar                                                                                                    |
|-----------------|------------------------------------------------------------------------------------------------------------------------|
| SANS 10100-1    | The structural use of concrete — detailing rules (bar limits, spacing, anchorage, laps).                               |
| SANS 51992-1    | Design of concrete structures; the South African adoption of Eurocode 2.                                               |
| SANS 10144:2010 | Detailing of steel reinforcement — shape codes, bending dimensions and the Bar Bending Schedule.                       |
| EN 1992-1-1     | Eurocode 2. Supported and selectable directly as the detailing basis for projects worked to Eurocode rather than SANS. |

### CODES PLANNED FOR A FUTURE RELEASE

Support for **BS 8666:2020** and **ACI 318** is on the roadmap and is **not yet available**. Until then, Simbi Rebar details and schedules to the standards above. Do not rely on Simbi Rebar for BS- or ACI-based output at this stage.

### ENGINEER'S RESPONSIBILITY

Simbi Rebar is a detailing and scheduling aid. The responsible engineer remains accountable for verifying that all output meets the project specification and applicable codes before it is issued or built. The **Standards & Methodology** reference sets out the design assumptions behind each tool.

## 2. How Simbi Rebar works

Simbi Rebar works with the structural elements already in your Revit model. Every tool follows the same pattern:

- 1 **Select** the concrete element you want to reinforce (a footing, column, wall, or beam).
- 2 **Configure** the reinforcement in the tool's dialog, using its tabs — **Reinforcement**, **Geometry**, **Curtailment** (where applicable) and a **Diagram** preview.
- 3 **Propagate** — click **Propagate Rebar** to generate real Revit reinforcement in the element.
- 4 **Review** the result in the model, and in the on-screen bar summary with its live code checks.

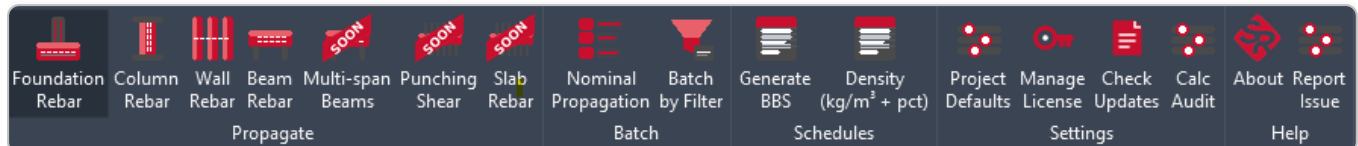
- 5 **Schedule** — when your elements are detailed, export the Bar Bending Schedule to Excel.

#### DETAIL ONCE, REPEAT WITH BATCH

Detail one representative element, then use **Batch propagation** (Section 8) to apply the same configuration to similar elements across the model.

### 3. The ribbon at a glance

All Simbi Rebar tools live on the **Simbi Rebar** ribbon tab in Revit, grouped into panels by purpose.



*The Simbi Rebar ribbon tab and its panels.*

Multi-span Beams, Punching Shear and Slab Rebar are in active development and will be enabled in a future release.

| Panel            | Tools                                                                                                                                     |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Propagate</b> | Foundation Rebar, Column Rebar, Wall Rebar, Beam Rebar. (Multi-span Beams, Punching Shear and Slab Rebar are coming in a future release.) |
| <b>Batch</b>     | Nominal Propagation, Batch by Filter.                                                                                                     |
| <b>Schedules</b> | Generate BBS, Density (kg/m <sup>3</sup> + percentage).                                                                                   |
| <b>Settings</b>  | Project Defaults, Manage License, Check Updates, Calc Audit.                                                                              |
| <b>Help</b>      | About, Report Issue.                                                                                                                      |

### 4. Foundation reinforcement

Places reinforcement into isolated and continuous foundations: pad footings, strip footings, stepped footings, and pile caps (including multi-pile arrangements).

#### When to use it

Use this tool for any foundation element needing bottom and top mats, starter bars, or pile-cap reinforcement and perimeter ties.

#### How to use it

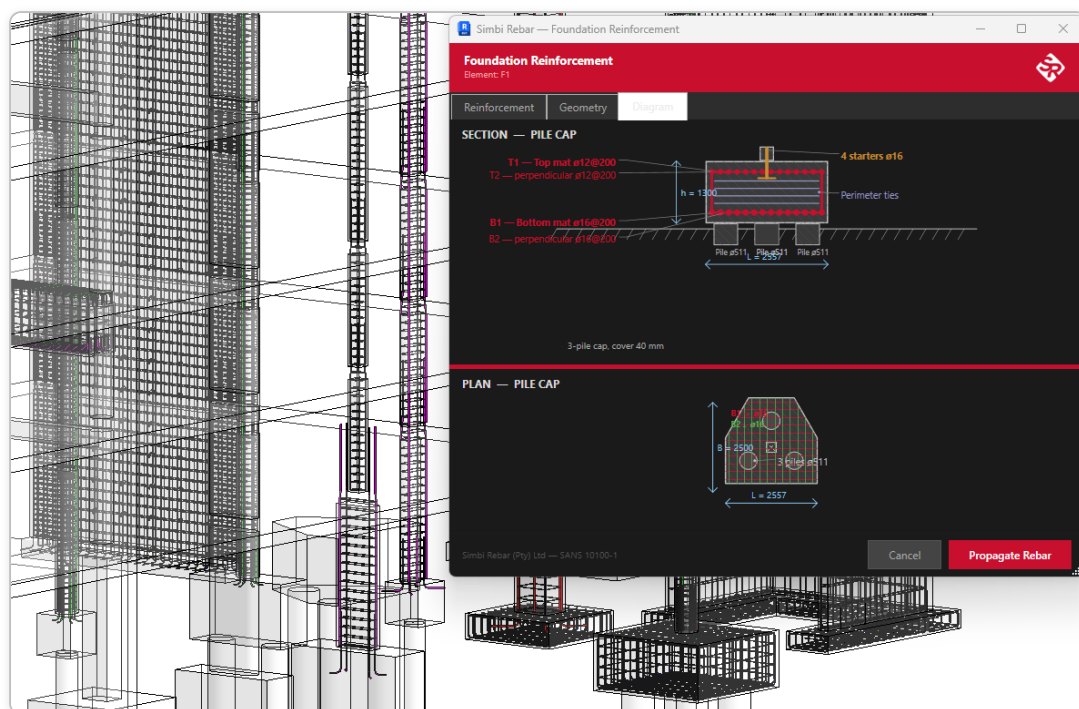
- 1 Select the foundation element in the model.
- 2 Click **Foundation Rebar** on the ribbon.
- 3 On the **Reinforcement** and **Geometry** tabs, set the foundation type, mat bar sizes and spacing, starters and cover.
- 4 Use the **Diagram** tab to check the section and plan before committing.
- 5 Click **Propagate Rebar** to place the reinforcement.

## Key options

| Option                 | Purpose                                                        |
|------------------------|----------------------------------------------------------------|
| Foundation type        | Pad, strip, stepped, or pile cap arrangement.                  |
| Bottom mat (B1/B2)     | Bar size and spacing for the two bottom directions.            |
| Top mat (T1/T2)        | Bar size and spacing for the two top directions.               |
| Starters               | Dowel bars linking the foundation to the column or wall above. |
| Perimeter ties & cover | Edge ties and concrete cover, per your specification.          |

### DIAGRAM PREVIEW

The Diagram tab shows a dimensioned section and plan (for example, a 3-pile cap with top and bottom mats, starters and perimeter ties) so you can confirm the arrangement before propagating.



The Foundation Reinforcement dialog — Diagram tab, showing a pile-cap section and plan.

## 5. Column reinforcement

Places longitudinal bars and links into rectangular and circular columns, including single-lift and multi-lift columns and lapped or spliced arrangements between lifts.

### When to use it

Use this tool for any concrete column — from a single column to a multi-storey stack with splices between lifts.

### How to use it

- 1 Select the column (or column stack) in the model.

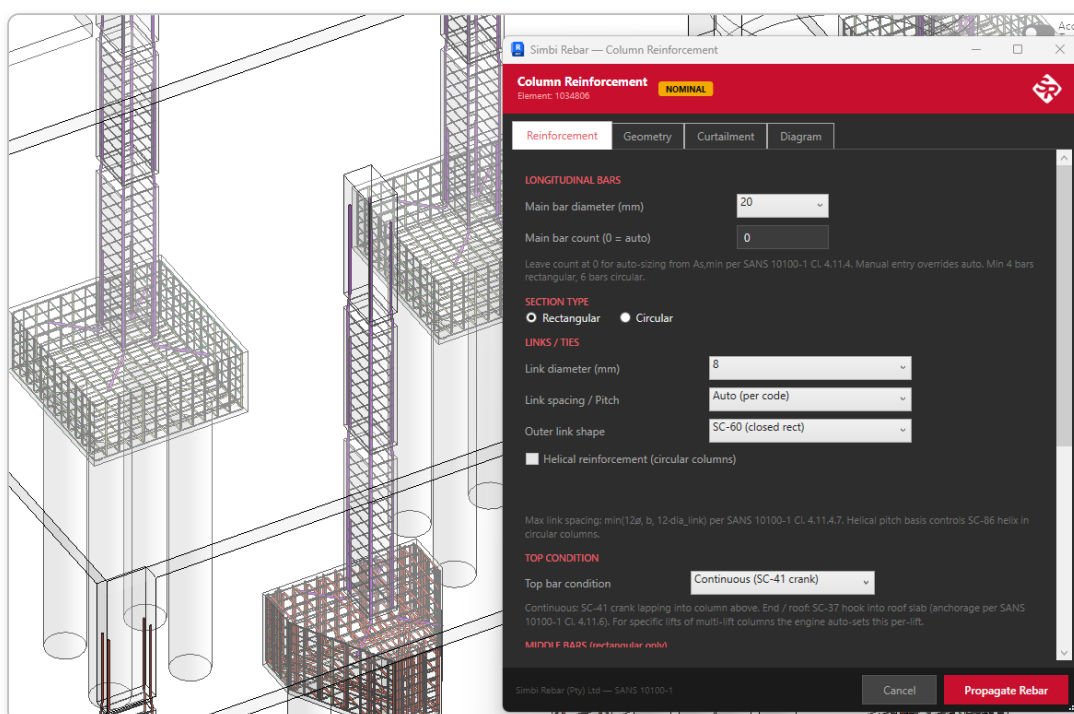
- 2 Click **Column Rebar** on the ribbon.
- 3 Set the main bar diameter and count. Leave **count at 0** to auto-size to  $A_{s,min}$ ; manual entry overrides auto.
- 4 Choose **Rectangular** or **Circular**, then set link diameter, spacing (or **Auto per code**) and outer link shape. For circular columns you can enable **helical** reinforcement.
- 5 Set the **top bar condition** (continuous crank into the column above, or a hook into the roof slab).
- 6 Click **Propagate Rebar** to place the reinforcement.

## Key options

| Option             | Purpose                                                                                |
|--------------------|----------------------------------------------------------------------------------------|
| Main bars          | Diameter and count. 0 = auto-size to $A_{s,min}$ (min 4 bars rectangular, 6 circular). |
| Section type       | Rectangular or circular column.                                                        |
| Links / ties       | Link diameter, spacing (or Auto per code) and outer link shape.                        |
| Helical (circular) | Continuous helix in place of separate links.                                           |
| Top condition      | Continuous crank lapping into the column above, or hook into the roof slab.            |

### AUTO-SIZING AND SPACING

With the bar count left at 0, Simbi Rebar sizes the longitudinal steel to the minimum area required by the governing code. Link spacing defaults to the code maximum. For multi-lift columns, the top condition is set automatically per lift.



The Column Reinforcement dialog — Reinforcement tab, with auto-sizing and link options.

## 6. Wall reinforcement

Places reinforcement into shear, retaining and single-layer walls, and automatically detects multi-lift walls that pass through structural slabs.

### When to use it

Use this tool for structural walls needing vertical and horizontal reinforcement — including tall walls built in several lifts, and walls with openings, sloped tops or stepped bases.

### How to use it

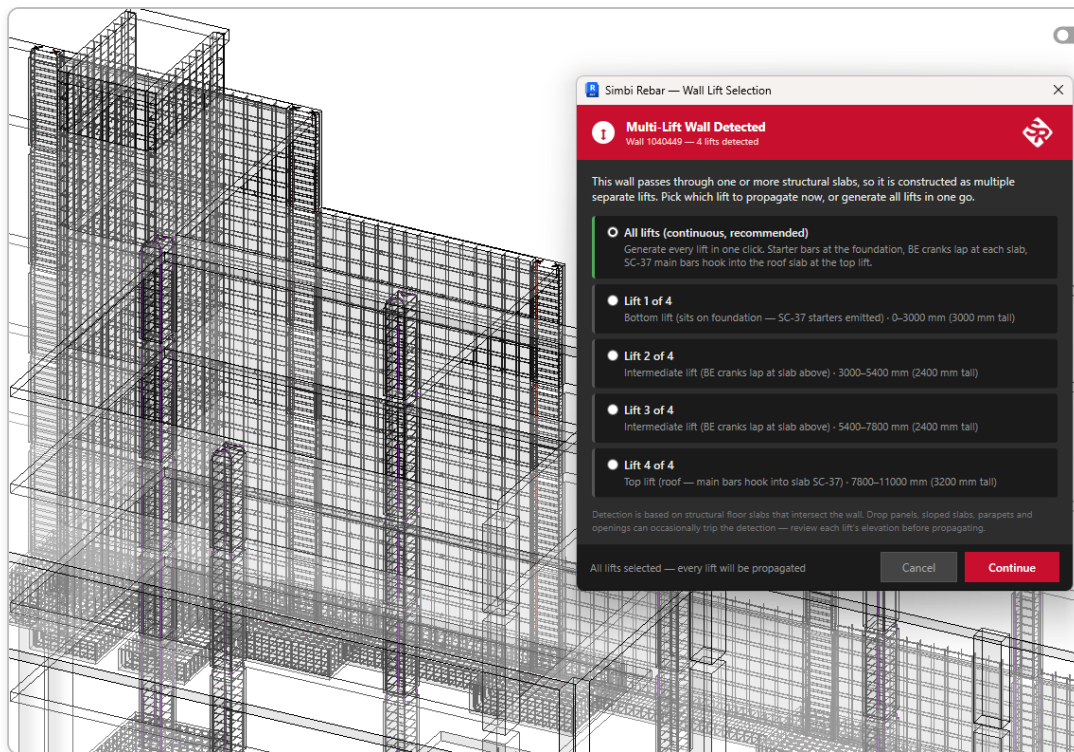
- 1 Select the wall in the model.
- 2 Click **Wall Rebar** on the ribbon.
- 3 Set the wall type and the vertical and horizontal bar sizes, spacing and cover.
- 4 If the wall passes through slabs, the **Multi-Lift Wall** dialog appears — choose **All lifts** (recommended) or a single lift.
- 5 Click to propagate the reinforcement.

### Key options

| Option                     | Purpose                                                                  |
|----------------------------|--------------------------------------------------------------------------|
| Wall type                  | Shear, retaining, or single-layer wall.                                  |
| Vertical / horizontal bars | Bar size and spacing for each direction.                                 |
| Lift selection             | Generate all lifts continuously, or one lift at a time.                  |
| Openings & profile         | Reinforcement and trimming around openings and non-rectangular profiles. |

#### MULTI-LIFT DETECTION

Simbi Rebar detects lifts from the structural slabs that intersect the wall. Choosing **All lifts** places starter bars at the foundation, laps bars at each slab, and hooks the top-lift bars into the roof slab in one operation. Review each lift's elevation, as drop panels, sloped slabs or parapets can occasionally affect detection.



The Multi-Lift Wall selection dialog, detecting four lifts on a tall wall.

## 7. Beam reinforcement

Places top and bottom bars, side/face bars and stirrups into beams, including continuous (multi-span) beams with spliced bottom steel and curtailed top steel over supports.

### When to use it

Use this tool for reinforced-concrete beams, from a single beam to a continuous run over several supports.

### How to use it

- 1 Select the beam (or continuous beam run) in the model.
- 2 Click **Beam Rebar** on the ribbon.
- 3 Set the top and bottom bar sizes, side/face bars and the stirrup size and spacing.
- 4 Adjust splicing and curtailment over supports as required.
- 5 Click **Propagate Rebar**. A bar-schedule summary confirms what was placed, with live code checks.

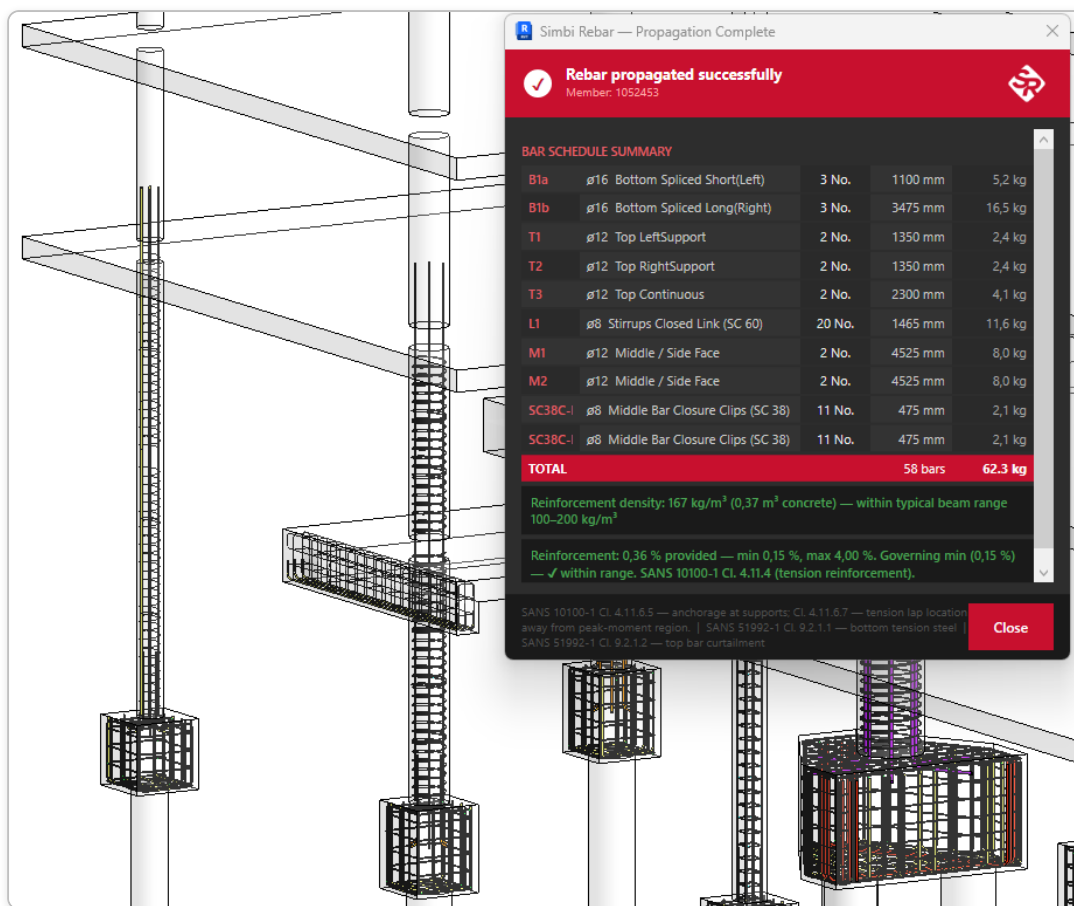
### Key options

| Bar group            | Role                                                                      |
|----------------------|---------------------------------------------------------------------------|
| Bottom bars (B)      | Bottom tension steel, spliced away from peak-moment regions.              |
| Top bars (T)         | Top steel over supports and continuous top bars, curtailed appropriately. |
| Side / face bars (M) | Middle and side-face bars in deeper beams.                                |

| Bar group                | Role                                               |
|--------------------------|----------------------------------------------------|
| Stirrups & clips (L, SC) | Closed links and closure clips confining the cage. |

### ON-SCREEN VERIFICATION

After propagating, Simbi Rebar shows a per-member bar schedule with mass, reinforcement density and a code check — for example, tension reinforcement against the code minimum — with the governing clauses cited.



The propagation summary for a beam, listing every bar group with mass and a live code check.

## 8. Batch propagation

Detail one element, then apply the same reinforcement configuration to many similar elements at once — the biggest time-saver in Simbi Rebar.

### Two ways to propagate

| Tool                | What it does                                                                        |
|---------------------|-------------------------------------------------------------------------------------|
| Nominal Propagation | Applies a detailed element's configuration to other nominally-identical members.    |
| Batch by Filter     | Targets members to reinforce using filter criteria, then propagates to all matches. |

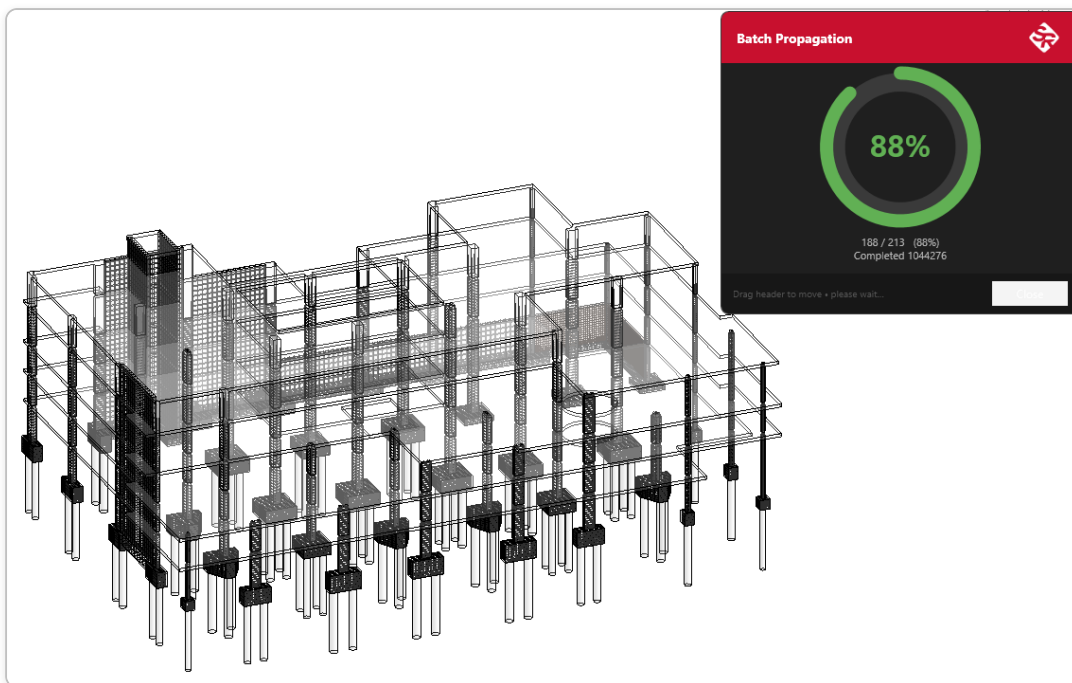
### How to use it

- 1 Detail one representative element (for example, a typical column) with the tools above.

- 2 On the **Batch** panel, click **Nominal Propagation** or **Batch by Filter**.
- 3 Confirm the source element and, for Batch by Filter, set the filter for which members to include.
- 4 Start the batch. A progress dialog shows how many members have been completed.

#### FILTER CAREFULLY

Make sure only genuinely similar members are included — for example, columns of the same size and reinforcement class — so the propagated detailing is appropriate for every target.



*Batch propagation running across a model, with live progress.*

## 9. Reinforcement density

The **Density** tool reports the reinforcement quantity, density and code ratio for a detailed element — useful for checking steel content and for quantity estimates.

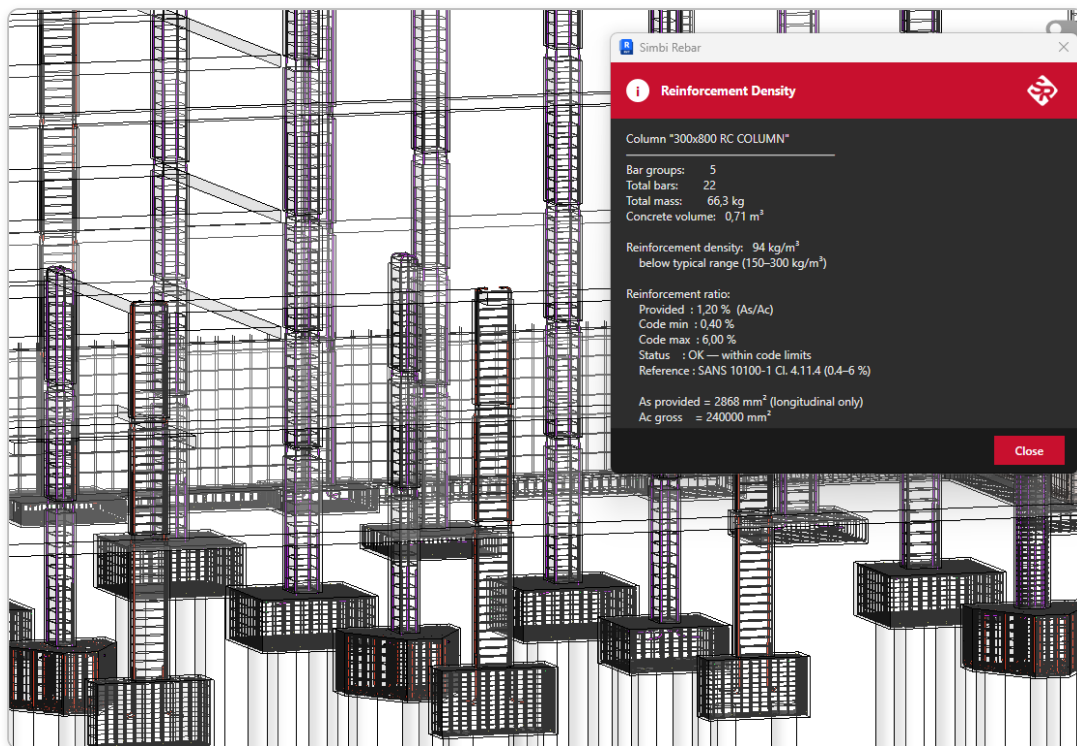
### How to use it

- 1 Select the detailed element you want to check.
- 2 Click **Density** on the ribbon.
- 3 Review the report and close it when done.

### What it reports

| Reported value                 | Meaning                                                                     |
|--------------------------------|-----------------------------------------------------------------------------|
| Bar groups / total bars / mass | Count of bar groups and bars, and total steel mass.                         |
| Concrete volume                | Volume of the element, used for the density figure.                         |
| Reinforcement density          | Steel mass per m <sup>3</sup> of concrete, flagged against a typical range. |

| Reported value      | Meaning                                                                                                    |
|---------------------|------------------------------------------------------------------------------------------------------------|
| Reinforcement ratio | Provided $A_s/A_c$ against the code minimum and maximum, with a pass/fail status and the governing clause. |



The Reinforcement Density report for a column, with the code-ratio check.

## 10. Generating the Bar Bending Schedule

When your elements are detailed, Simbi Rebar exports a complete Bar Bending Schedule (BBS) to Microsoft Excel, to **SANS 10144:2010**.

### How to export

- 1 Detail the elements you want to schedule.
- 2 Click **Generate BBS** on the ribbon.
- 3 Choose the scope and confirm.
- 4 Open the Excel ( `.xlsx` ) schedule, check it, and issue it with your documentation.

### What the schedule contains

Bars are grouped by member, with a subtotal per member and the information a fabricator needs:

| Column                 | Meaning                                                  |
|------------------------|----------------------------------------------------------|
| Bar Mark / Description | Reference and description for each bar group.            |
| Bar Type & Dia         | Reinforcement type (e.g. Y16) and diameter.              |
| Shape Code & Diagram   | Bending shape and dimension diagram per SANS 10144:2010. |

| Column                              | Meaning                                        |
|-------------------------------------|------------------------------------------------|
| A-E (mm)                            | Bending dimensions for the shape.              |
| r (mm)                              | Scheduling bend radius.                        |
| No. of Bars / Cutting Length / Mass | Quantity, cut length and total mass per group. |

### EXCEL IS THE DELIVERABLE

The BBS is produced as an Excel file so you can review, format and issue it. Regenerate it after model changes, as the schedule reflects the model at the time of export.

| SimbiRebar ENGINEERING (PTY) LTD                                                    |               |               |                    |          |            |                                                                                     |             |        |        |        |        |        |        |                    |                 |
|-------------------------------------------------------------------------------------|---------------|---------------|--------------------|----------|------------|-------------------------------------------------------------------------------------|-------------|--------|--------|--------|--------|--------|--------|--------------------|-----------------|
| Bar Bending Schedule — SANS 10144:2010                                              |               |               |                    |          |            |                                                                                     |             |        |        |        |        |        |        |                    |                 |
|  |               |               |                    |          |            |                                                                                     |             |        |        |        |        |        |        |                    |                 |
| Proj#SIMBI-REBAR-TEST-PROJECT                                                       |               |               | Date: 10 June 2026 |          |            | Members 183                                                                         |             |        |        |        |        |        |        |                    |                 |
| #                                                                                   | Bar Mark      | Description   | Bar Type           | Dia (mm) | Shape Code | Bar Diagram                                                                         | No. of Bars | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | r (mm) | Cutting Length (m) | Total Mass (kg) |
| —— 2300x2300x500 RC PAD (id 1004772) ——                                             |               |               |                    |          |            |                                                                                     |             |        |        |        |        |        |        |                    |                 |
| 1                                                                                   | B1 [#1004772] | B1 [#1004772] | Y16                | 16       | 38         |    | 12          | 440    | 2228   |        |        |        |        | 3028               | 57,35           |
| 2                                                                                   | B2 [#1004772] | B2 [#1004772] | Y16                | 16       | 38         |    | 12          | 432    | 2228   |        |        |        |        | 3012               | 57,05           |
| 3                                                                                   | T1 [#1004772] | T1 [#1004772] | Y12                | 12       | 55         |    | 12          | 255    | 430    | 2240   | 430    |        |        | 3490               | 37,18           |
| 4                                                                                   | T2 [#1004772] | T2 [#1004772] | Y12                | 12       | 55         |    | 12          | 255    | 430    | 2240   | 430    |        |        | 3490               | 37,18           |
| Subtotal                                                                            |               |               |                    |          |            |                                                                                     | 48          |        |        |        |        |        |        |                    | 188,76          |
| —— 2000x2000x500 RC PAD (id 1004946) ——                                             |               |               |                    |          |            |                                                                                     |             |        |        |        |        |        |        |                    |                 |
| 1                                                                                   | B1 [#1004946] | B1 [#1004946] | Y16                | 16       | 38         |  | 10          | 440    | 1928   |        |        |        |        | 2728               | 43,06           |
| 2                                                                                   | B2 [#1004946] | B2 [#1004946] | Y16                | 16       | 38         |  | 10          | 432    | 1928   |        |        |        |        | 2712               | 42,80           |
| 3                                                                                   | T1 [#1004946] | T1 [#1004946] | Y12                | 12       | 55         |  | 10          | 255    | 430    | 1940   | 430    |        |        | 3190               | 28,32           |
| 4                                                                                   | T2 [#1004946] | T2 [#1004946] | Y12                | 12       | 55         |  | 10          | 255    | 430    | 1940   | 430    |        |        | 3190               | 28,32           |
| Subtotal                                                                            |               |               |                    |          |            |                                                                                     | 40          |        |        |        |        |        |        |                    | 142,50          |
| —— 2000x2000x500 RC PAD (id 1005023) ——                                             |               |               |                    |          |            |                                                                                     |             |        |        |        |        |        |        |                    |                 |
| 1                                                                                   | B1 [#1005023] | B1 [#1005023] | Y16                | 16       | 38         |  | 10          | 440    | 1928   |        |        |        |        | 2728               | 43,06           |

An exported Bar Bending Schedule (SANS 10144:2010) grouped by member, with shape codes, dimensions and masses.

## 11. Licensing & subscription

Simbi Rebar is licensed per seat on an annual subscription, with a free trial so you can evaluate it first. Your licence is managed from **Manage License** on the ribbon.

### Free trial

Start a **7-day free trial** with no payment card required. All available tools are unlocked during the trial.

### Subscribing

- 1 Click **Subscribe** in Simbi Rebar, or visit [simbi-rebar.com/shop/](https://simbi-rebar.com/shop/).
- 2 Complete your purchase — billing is handled securely by Paddle.
- 3 Your licence key is emailed to you automatically. Keep this email.
- 4 Activate Simbi Rebar with the key (see the Installation Guide, Section 5).

| Detail       | Value                                                                   |
|--------------|-------------------------------------------------------------------------|
| Price        | USD 530 per year                                                        |
| Seats        | One seat per licence (self-serve deactivation to move between machines) |
| Scope        | All available tools included — there are no partial tiers               |
| Larger teams | For 5 or more seats, contact us to arrange licensing                    |

### Moving between machines

Each licence is a single seat. In **Manage License**, deactivate on one computer to release the seat, then activate on another. You can do this yourself — no need to contact support.

### When the trial or subscription ends

When a trial expires or a subscription lapses, the tools lock until you subscribe or renew. Reinforcement already placed in your model stays in the model; you simply won't be able to place new reinforcement or export schedules until the licence is active again.

#### QUESTIONS ABOUT BILLING

For invoices, renewals or seats, email [info@simbi-rebar.com](mailto:info@simbi-rebar.com).

## 12. Tips & best practices

- **Detail a typical element first, then Batch.** The fastest way to reinforce repetitive elements consistently.
- **Use the Diagram tab before propagating.** Confirm the arrangement visually, then commit.
- **Read the on-screen code checks.** The bar summary flags reinforcement ratios and cites the governing clause — use it as a first-pass QA.
- **Keep covers and bar sizes aligned to your project spec.** Set them deliberately rather than accepting defaults.
- **Re-export the BBS after changes.** The schedule reflects the model at export time.
- **Verify against your design.** Simbi Rebar details what you specify; the responsible engineer confirms compliance.

## 13. Support & resources

Support: [info@simbi-rebar.com](mailto:info@simbi-rebar.com)

Website: [simbi-rebar.com](https://simbi-rebar.com)

Downloads & updates: [simbi-rebar.com/download/](https://simbi-rebar.com/download/)

Purchase: [simbi-rebar.com/shop/](https://simbi-rebar.com/shop/)

You can also raise an issue directly from Revit using **Report Issue** on the ribbon. Please include your Revit version, Windows version, and the Simbi Rebar version shown in **About**.

### COMPANION DOCUMENTS

See the **Installation Guide** to get set up, the **Quick Start Guide** for a fast walkthrough, and the **Standards & Methodology** reference for the design basis behind each tool.