

PreBIM-SteelStructure — User Manual (MVP)

Web app for fast steel structure concept modeling: grids/levels, members, bracing, quantities, and exports.

URL: <https://www.bimarchi-pg.com/prebim/>

Note on updates: If you don't see a recent change, open with a cache-buster:
<https://www.bimarchi-pg.com/prebim/?v=<timestamp>#/editor/<projectId>>

1) Getting Started

Open the app

1. Go to /prebim/.
2. You'll see the **Projects** page (local storage).

Create a new project

1. Enter a name.
2. Click **New project**.

Open / delete / export a project

- **Open:** opens the editor.
- **Export:** downloads a JSON snapshot of that project.
- **Delete:** removes the project from this browser's localStorage.

Import projects

1. Click **Import project (.json)**.
2. Select a previously exported JSON file.

2) Editor Layout

The editor is a fullscreen layout with:

- **Tools** (left): inputs for grid/levels/options/profiles.
- **3D View** (center): interactive 3D frame.
- **(Plan/Section):** currently **hidden** (feature kept for later).
- **Quantities:** bottom panel, **collapsed by default**.

Resizable splitters:

- Vertical splitters adjust pane widths.
 - Horizontal splitter (when Quantities is open) adjusts Quantities height.
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3) Tools

3.1 Grid

- **X spans (mm, comma)**: e.g. 6000,6000,8000
- **Y spans (mm, comma)**: e.g. 6000,6000

How grid count is determined

- $\text{grid count} = \text{spans} + 1$

Realtime

- Changes apply automatically.

3.2 Level

- Levels are **absolute elevations** in mm.
- Use **Add level** to append a new level.
- You can edit level values directly.

Realtime

- Changes apply automatically.

3.3 Sub-beam

- **Enable**: turns sub-beams on/off.
- **Count / bay**: number of sub-beams in each bay.
- **Shape/Profile**: picks standard/shape/size for sub-beams.

3.4 Profile (common)

- **Standard (all)**: selects steel standard dataset.
- Common shapes/sizes for:
 - **Column**
 - **Beam**
 - **Sub-beam**

Note

- Some members can be overridden individually (see Override).
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4) 3D View

Navigation

- Drag to rotate (Orbit)
- Wheel to zoom
- Right-drag / trackpad pan to move

3D Guide lines (Grid + Levels)

- The 3D view shows:
 - Base grid lines and labels (X1 . . , Y1 . .) offset outside the structure
 - Level outlines and labels (Lk elevation) offset outside the structure

Selection (for Overrides)

- Click a member to select it (only supported for: column/beam/sub-beam).
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5) Bracing

Open Bracing

- Click **Bracing** in the 3D header.

Enable

- Toggle **Enable**.

Brace type

- **X**: cross bracing
- **/**: single diagonal
- **Λ**: chevron bracing

Panel picking

- When Bracing popup is open, you can click panels in 3D.
- Closing the popup disables panel picking.

Brace profile

- Choose brace **Shape/Profile**.
 - New braces store the selected profile at creation time.
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6) Override (per-member profile)

Open Override

- Click **Override** in the 3D header.

Apply override

1. Click a member in 3D to select.
2. Choose override **Shape** and **Profile**.
3. Changes apply immediately.

Clear / Reset

- **Clear**: clears selection.

- **Reset:** removes all overrides (confirmation required).
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7) Quantities

Open/close

- Click **Quantities** (top bar) to toggle the panel.
- The panel is **collapsed by default**.

What is shown

- Quantities table by category:
 - Length (m)
 - Count
 - Unit weight (kg/m)
 - Load (kg and t)
- Total weight is included in the summary.

Copy to Excel

- In Quantities header: **Copy Excel**
 - Copies **TSV** (tab-separated) to clipboard.
 - Paste directly into Excel.
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8) Exports

All export buttons are in the **top bar**.

8.1 DATA Export

- Downloads a JSON bundle:
 - engineModel
 - project metadata
 - timestamp

8.2 STAAD Export (MVP)

- Downloads .std with:
 - JOINT COORDINATES
 - MEMBER INCIDENCES

Note: This is an MVP geometry export; properties/loads are not fully authored yet.

8.3 DXF Export (MVP, auto-dimension)

- Downloads a DXF containing:
 - Plan outer rectangle
 - Auto dimensions (mm numbers only)
 - X chain + overall (outside)
 - Y chain + overall (outside)
 - Level height dimensions (outside)

8.4 IFC Export

- Currently outputs a **placeholder** IFC file header.
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9) Known Limitations (current MVP)

- Plan/Section feature is currently **hidden** (kept for later).
 - IFC export is a placeholder.
 - Local projects are stored in browser localStorage (not cloud synced).
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10) Troubleshooting

Updates not showing

Use a cache-buster query before the hash:

- `.../prebim/?v=20260209-xxxx#/editor/<id>`

Or try:

- Incognito window
- DevTools → Network → “Disable cache” → reload

Performance

- Reduce grid size or bracing panels if interaction becomes heavy.
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Appendix: Glossary

- **Story**: the vertical region between two consecutive levels.
- **Bay**: a rectangle between adjacent grid lines.
- **kg/m**: unit weight per meter, sourced from the steel profile dataset.