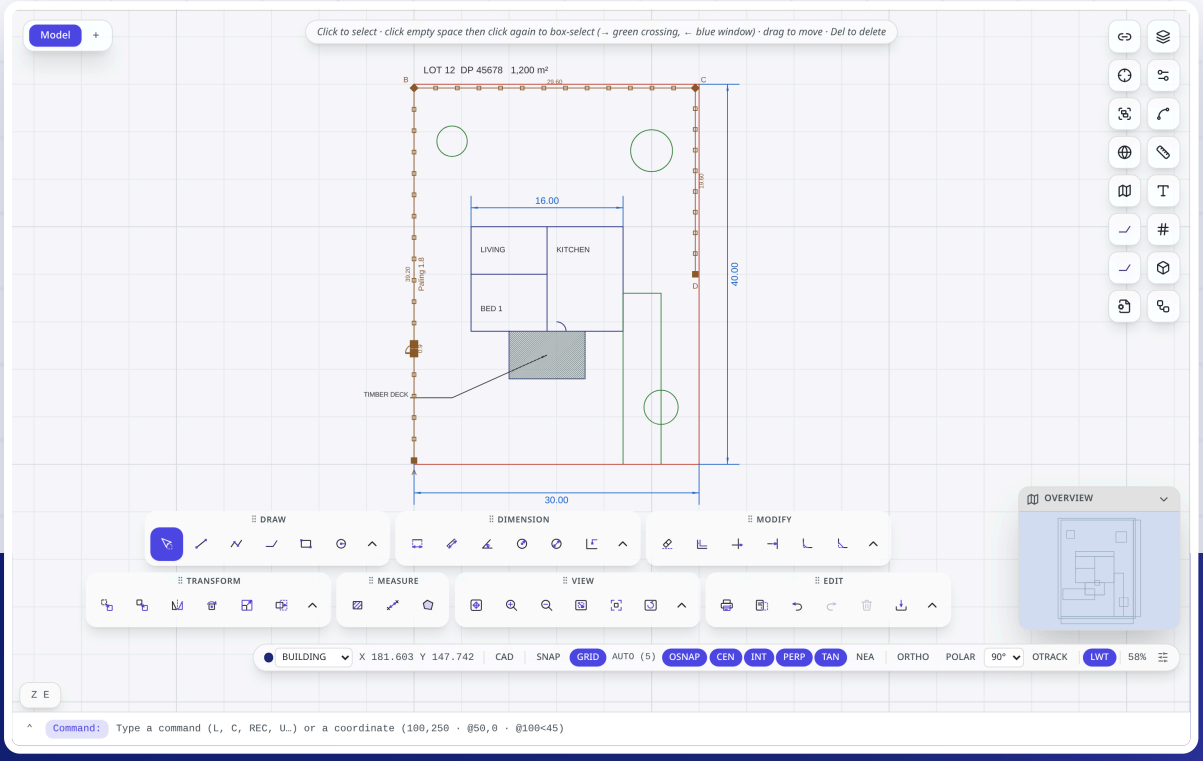
BranchCAD

User Guide

Drafting, site planning, GIS and fence design in your browser



Complete reference & tutorials

For drafters, designers, surveyors and fence builders

Edition 1.0
November 2026

Contents

1 Welcome to BranchCAD
What it is, who it is for, what you can do

2 Getting started
Account, your models, opening the editor

3 A tour of the workspace
Toolbars, panels, status bar, command line

4 Commands & coordinates
The command line, aliases, typed points

5 Navigating the drawing
Zoom, pan, overview, saved views

6 Drawing objects
Lines, polylines, circles, arcs and more

7 Drafting precision
Snaps, grid, ortho, polar, tracking

8 Selecting & the Properties panel
Picking, windows, grips, quick select, groups

9 Modifying geometry
Move, copy, offset, trim, fillet, array...

10 Layers, linetypes & lineweights
Organising a drawing

11 Text, tables & leaders
Annotation and text styles

12 Dimensions
Seven dimension types and dimension styles

13 Hatching & regions
Fills, patterns, boolean shapes

14 Blocks, images & external references
Reusable symbols and underlays

15 Measuring
Distance and area

16 Layouts, sheets & plotting
Paper space, viewports, PDF output

17 GIS & georeferencing
Real-world coordinates, maps, parcels

18 Fence design
Fence runs, gates, elevations, materials

19 Importing & exporting files
DXF, DWG, CSV, GeoJSON, images

20 Sharing, collaboration & history
Links, live editing, comments, versions

21 Settings & plans
Appearance, defaults, account, billing

22 Keyboard shortcuts
Every key in one table

23 Troubleshooting & FAQ
Common questions and fixes

HOW TO READ THIS GUIDE

Commands are shown like `LINE`; their short aliases follow in brackets, e.g. `LINE` (`L`). Keys are shown as `Enter`. A step-by-step procedure is a numbered list. Every command is also listed on the separate **BranchCAD Command Cheat Sheet**.

INTRODUCTION

01 Welcome to BranchCAD

BranchCAD is a professional 2D CAD application that runs entirely in your web browser. There is nothing to install: sign in, open a model and start drawing — with the AutoCAD-style commands you already know.



Built for real work on real sites. Draw site plans, buildings and details to exact dimensions; place the drawing on its true map location; fetch parcels and building outlines; design fences with posts, rails, gates and a bill of materials; and plot finished sheets to PDF. Your work is saved automatically and can be shared, edited together in real time and versioned like code.

Precise drafting

Lines, polylines, arcs, splines, ellipses, polygons, points and construction lines — with typed coordinates and object snaps.

Full editing set

Move, copy, rotate, scale, mirror, offset, trim, extend, fillet, chamfer, stretch, array, join, break and more.

Annotation

Text, multiline text, tables, leaders, seven dimension types and named text and dimension styles.

Organisation

Layers with on/off, freeze, lock and plot control; linetypes, lineweights, groups, blocks and external references.

Sheets & plotting

Paper-space layouts with scaled viewports, title blocks, scale bars and north arrows; plot to PDF.

GIS

Georeference to NZ and Australian coordinate systems, aerial basemaps, parcels, building footprints and an interactive map mode.

Fence design

Parametric fence runs on any boundary — posts, gates, elevations, compliance checks and material takeoff.

Interoperability

Open DXF and DWG files; export valid DXF (also in grid coordinates); import CSV points, GeoJSON and images.

Teamwork

Share links, live co-editing with presence, comments, named versions, branches, compare and restore.

Who this guide is for

Anyone who draws with BranchCAD — from first-time users to experienced AutoCAD drafters. Chapters 2–5 get you productive in a few minutes; the later chapters are a reference for each area of the program. If you already know AutoCAD, read Chapter 4 and keep the cheat sheet beside you: almost every familiar alias works the same way.

The sample drawing

The screenshots in this guide use a single example: **Lot 12**, a 30 × 40 m residential section with a 16 × 11 m house, a timber deck, a driveway, trees, dimensions, notes and a 1.8 m timber paling boundary fence with a pedestrian gate. You can reproduce every step on your own drawing.

FIRST STEPS

02 Getting started

Create your account

1. Open BranchCAD in a current version of Chrome, Edge, Firefox or Safari.
2. Choose **Register** and enter your name, e-mail and a password — or sign in with Google.
3. Confirm your e-mail address from the verification message we send you.
4. Pick a plan. **Free** is enough to learn everything in this guide; you can upgrade at any time.

After you sign in, BranchCAD opens straight into the editor: your last-opened model, otherwise the most recently changed one, otherwise a fresh model called *Untitled*.

Your models

In BranchCAD a drawing is called a **model**. Open **Browse all models** to see the *Your models* page, which lists your active and archived models and shows your plan usage.

To…	Do this
Create a model	Type a name into **New model name** and click **Create**. It opens in the editor.
Open a model	Click its name.
Rename	Click **Rename**, type the new name, press `Enter` (or **Save**). In the editor you can also click the name in the top bar.
Archive / Unarchive	**Archive** moves a model to the *Archived* list — it stays readable but read-only. **Unarchive** brings it back.
Delete	Click **Delete** and confirm with **Yes, delete**. This cannot be undone.
Plan limit reached	On Free, choose **Archive & create** to make room without deleting anything.

Saving is automatic

There is no Save button. Every change is saved as you work, and the status indicator in the top bar tells you where things stand: *Saving…*, *Saved*, *Reconnecting…* or *Offline · saved on this device*. If you lose your connection, keep drawing — the changes are kept locally and sent when you are back online. To mark a milestone, name a version (see Chapter 20).

Your first drawing in two minutes

1. Click in the command line at the bottom of the screen, type `REC` and press `Enter`.
2. Type `0,0` `Enter` for the first corner, then `@30,40` `Enter` for the opposite corner. You have drawn a 30 × 40 boundary.
3. Type `Z E` `Enter` to zoom to everything you have drawn.
4. Type `O` `Enter`, then `3` `Enter`, click the rectangle and click inside it: a 3 m set-back line appears.
5. Type `DLI` `Enter`, click two corners of the boundary and click where the dimension line should sit.

Press `Esc` at any time to cancel the current command, and `Ctrl`+`Z` to undo the last change.

ORIENTATION

03 A tour of the workspace

The editor is a full-screen drawing canvas with floating tools around its edges. Everything floats, so the drawing always gets the most space.

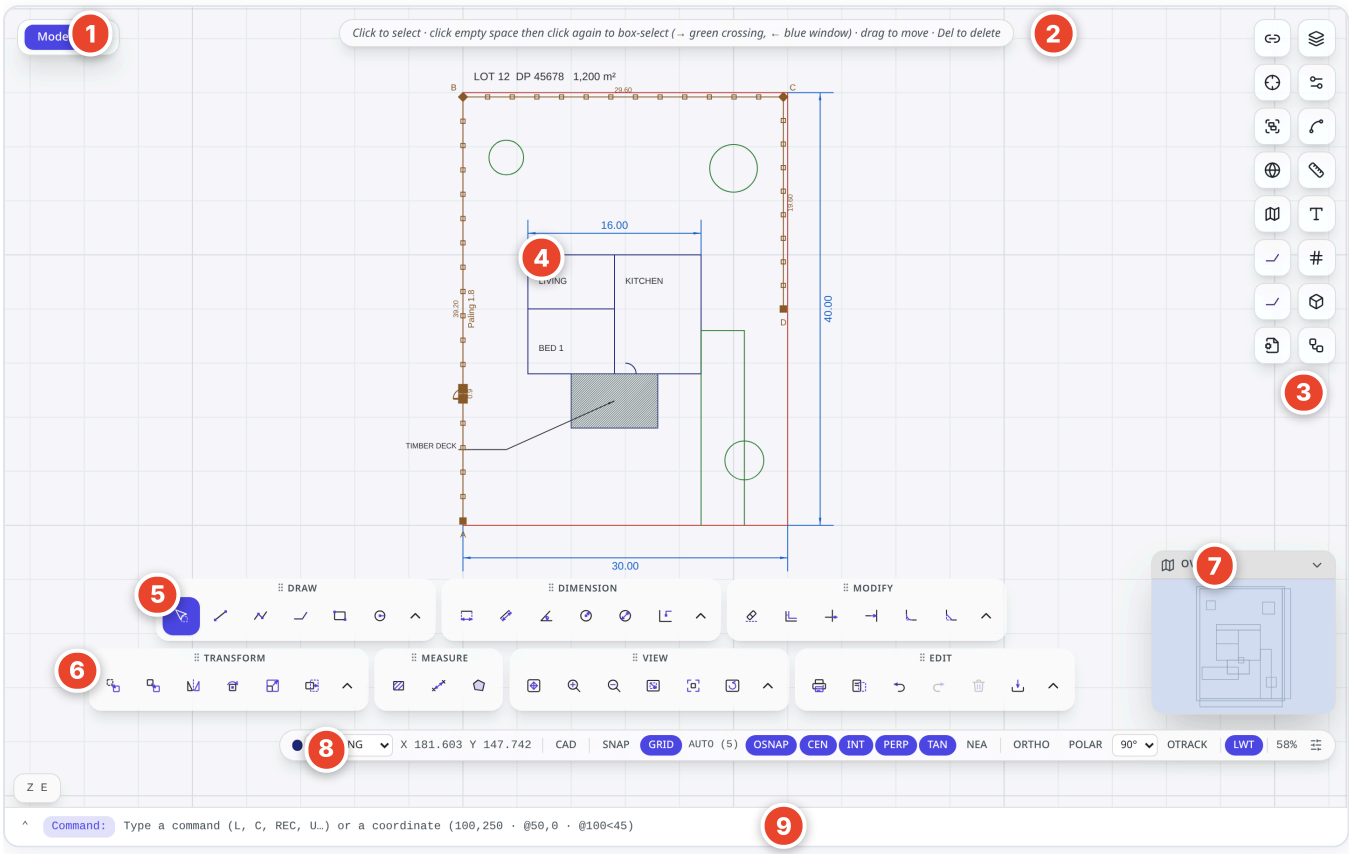


Figure 3.1 — The editor with the Lot 12 sample drawing.

1. **Layout tabs** — *Model* is the drawing; **+** adds a paper sheet.
2. **Hint bar** — tells you what the current tool expects next.
3. **Panel rail** — opens Layers, Properties, Blocks, Fences, GIS and other panels.
4. **Canvas** — the drawing. Red and green lines are the X and Y axes.
5. **Draw · Dimension · Modify** tool groups.
6. **Transform · Measure · View · Edit** tool groups.
7. **Overview** — a minimap; drag the frame to move around.
8. **Status bar** — layer, coordinates and drafting toggles.
9. **Command line** — type any command or coordinate here.

Tool groups

The floating tool groups at the bottom hold the most-used tools. Hover any button to see its name and command. The ^ arrow at the end of a group expands it to show the less common tools. Drag a group by its ⠿ handle to move it anywhere on screen; it snaps neatly to the edges and to other groups. You can restore the default arrangement from *Settings → Editor defaults → Toolbar layout → Reset to default*.

Group	Contains
Draw	Select, line, polyline, fence, rectangle, circle — expanded: arc, ellipse, spline, polygon, point, ray, construction line, revision cloud, text, multiline text, table.

Dimension	Linear, aligned, angular, radius, diameter, ordinate — expanded: arc length, continue, baseline, leader.
Modify	Erase, offset, trim, extend, fillet, chamfer — expanded: break, join, lengthen.
Transform	Move, copy, mirror, rotate, scale, stretch — expanded: align, array, edit polyline, divide, measure.
Measure	Hatch, distance, area.
View	Zoom and pan controls, including zoom window and zoom extents.
Edit	Plot, page setup, undo, redo, delete selection, export.

The panel rail

The column of round buttons on the right opens the side panels. Panels are floating cards: drag them by their header, close them with ×. The same panels open from the command line (for example `LA` for Layers).

- **Share** link and **Layers**
- **Object snap** settings and **Properties**
- **Groups** and **Linetypes**
- **Georeference** and **Dimension styles**
- **GIS / map** and **Text styles**
- **Fences** and **Fence elevation**
- **Grid**, **Blocks**, **Import**, **External references**

The Properties panel also opens by itself whenever you select something (you can switch that off with its **Auto-open** box).

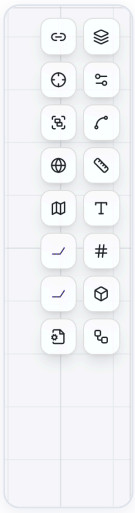


Figure 3.2 — The panel rail.

The status bar

Highlighted (filled) buttons are **on**; click any of them to toggle.

Item	Meaning
Layer list	The current layer — new objects are drawn on it.
X / Y	Live cursor coordinates. When the drawing is georeferenced they show grid **E**/**N**.
CAD / MAP	The current environment (see Chapter 17).
SNAP · GRID	Grid snap and grid display. **AUTO (5)** shows the grid spacing.
OSNAP · CEN INT PERP TAN NEA	Object snap on/off and the individual snap modes.
ORTHO · POLAR 90° · OTRACK	Ortho lock, polar tracking (with its angle) and object-snap tracking.
LWT	Display lineweights on screen.
58% · ☰	Zoom level and display settings.

THE HEART OF BRANCHCAD

04 Commands & coordinates

Everything in BranchCAD can be done from the command line. Clicking a toolbar button and typing its command do exactly the same thing — use whichever is faster for you.

Running a command

1. Type the command or its alias — `LINE` or just `L` — and press `Enter`. Commands are not case-sensitive.
2. Read the prompt on the left of the command line, e.g. *LINE: Specify next point or [Close/Undo]*. Words in brackets are **options**; type the capital letter (`C`, `U`) to use one.
3. Answer by clicking in the drawing or typing a value or coordinate, and press `Enter`.
4. Press `Enter` on an empty line (or right-click) to finish. Press `Enter` again to **repeat** the last command. `Esc` cancels.

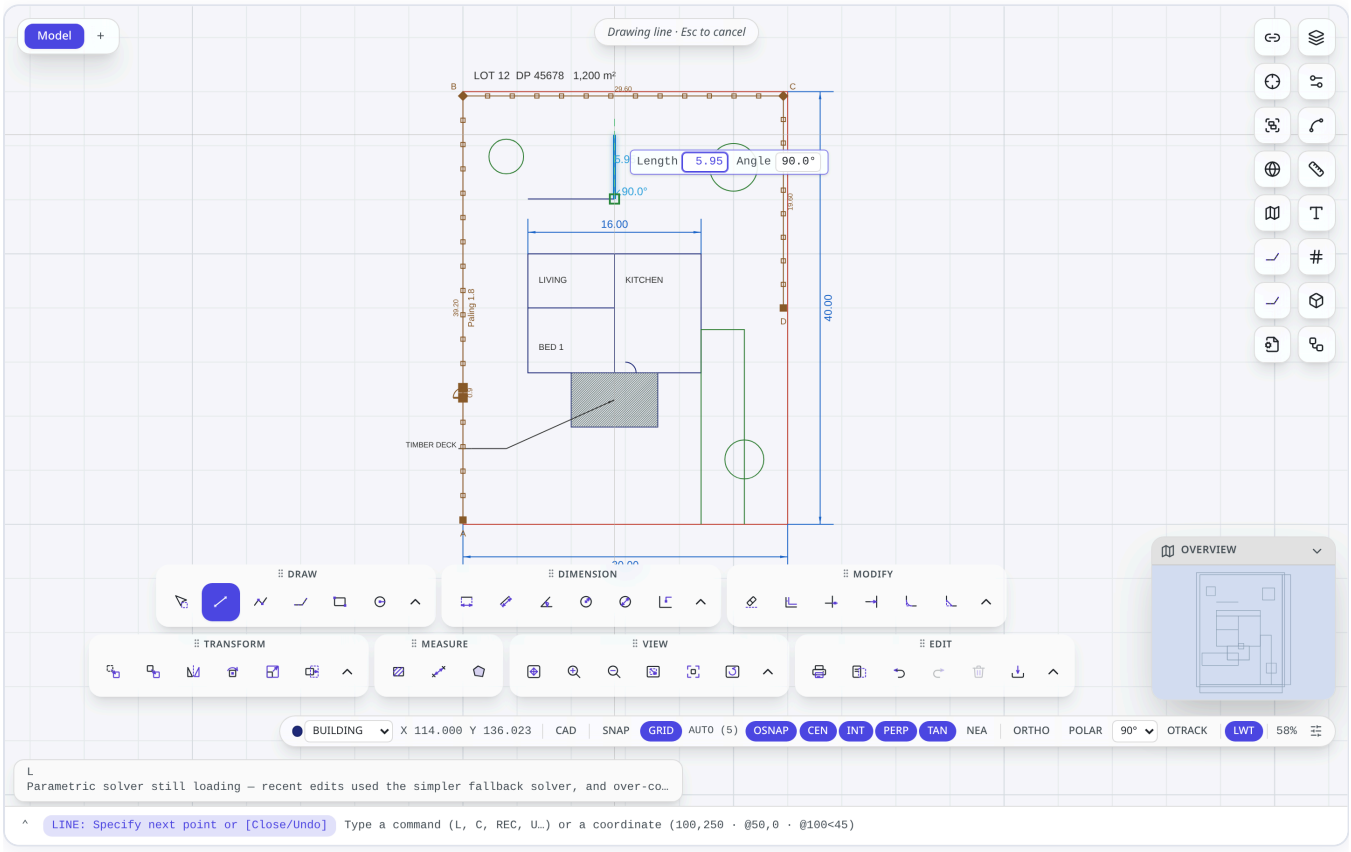


Figure 4.1 — Drawing a line. The prompt reads *LINE: Specify next point or [Close/Undo]*; the dynamic input box beside the cursor shows the length and angle of the segment being drawn.

Typing coordinates

Wherever a command asks for a point you can type it instead of clicking. Angles are in degrees, measured counter-clockwise from the positive X axis (east = 0°, north = 90°).

Form	Example	Meaning
`x,y`	`100,250`	Absolute point, measured from the origin.
`@dx,dy`	`@50,0`	Relative — 50 to the right of the last point.
`d<a`	`25<30`	Absolute polar — 25 from the origin at 30°.

`@d<a`	`@100<45`	Relative polar — 100 from the last point at 45°.
`Ge,n`	`G1752340.885,5428110.223`	A real-world **grid** coordinate (easting, northing). Needs a georeference (Ch. 17).
a number	`12.5`	Direct distance — point the cursor in a direction and type a length.

DYNAMIC INPUT

While drawing, the **Length** and **Angle** boxes next to the cursor accept typing too. Combine them with **ORTHO** or **POLAR** to draw exact lengths in exact directions without typing any commas.

Options that work inside commands

Type	In	Effect
`U`	any point-by-point command	Undo the last point (LINE removes the last segment).
`C`	LINE, PLINE, SPLINE, FENCE, AREA, REVCLOUD	Close the shape back to its start.
`D`	CIRCLE	Enter a diameter instead of a radius.
`I` / `C`	POLYGON	Inscribed in / circumscribed about a circle.
`S` / `R`	INSERT	Scale / rotate the block you are placing.
`DE P T DY`	LENGTHEN	Delta, Percent, Total, Dynamic.
`C O J W F S D R`	PEDIT	Close, Open, Join, Width, Fit, Spline, Decurve, Reverse.

While a command is waiting for one of its options, those letters belong to the command — typing `C` at a POLYGON prompt chooses *Circumscribed* and does not start the CIRCLE command.

Commands that act on a selection

Many commands work **noun-first**: select the objects, then type the command. `GROUP`, `UNGROUP`, `EXPLODE`, `ERASE`, `REGION`, `UNION`, `SUBTRACT`, `INTERSECT`, `LAYISO` and `FENCEAPPLY` all act on whatever is selected. Modify commands such as `MOVE` and `ROTATE` use the current selection if there is one, and ask you to select otherwise.

MOVING AROUND

05 Navigating the drawing

Action	How
Zoom in / out	Roll the **mouse wheel** — zooming centres on the cursor. Or press `+` / `-`, or type `Z I` / `Z OUT`.
Pan	Hold `Space` and drag, use the **Pan** tool (`P`), or nudge with the arrow keys.
See everything	`Z E` (or `ZE`, `Z A`, bare `Z`) — zoom extents.
Zoom to an area	`Z W` then drag a box.
Zoom to the selection	Select, then `Z O`.
Go back	`Z P` — the previous view.
Realtime zoom	`Z R` then drag up / down.
Jump with the overview	Drag the frame in the **Overview** minimap; collapse it with its arrow.

Saved views

Type `V` (or `VIEW`) to open **Saved views**. Frame the part of the drawing you want, type a name such as *Front yard* and click **Save**. Click a saved view later to jump straight back to it. Saved views are stored with the drawing, so collaborators see them too.

`NAV` opens the navigation settings, where you can adjust mouse-wheel behaviour and turn smooth zoom animation on or off.

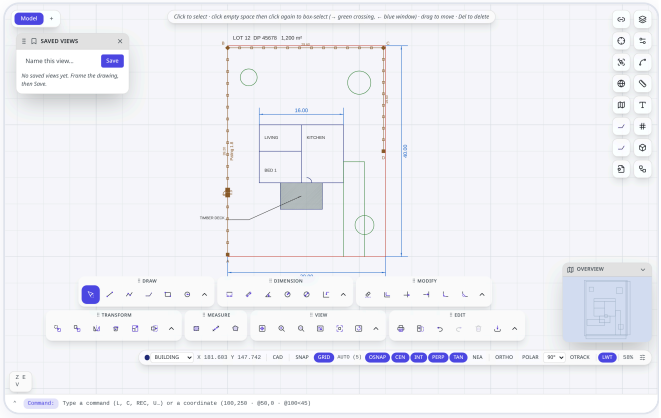


Figure 5.1 — The Saved views panel.

CREATING GEOMETRY

06 Drawing objects

Every drawing tool follows the same rhythm: start the command, give it points (by clicking or typing), and finish with `Enter`. New objects go on the current layer shown on the status bar.

Command	Aliases	How to use it
LINE	`L`	Click a start point, then each next point. Each segment is a separate line. `C` closes, `U` undoes a segment.
PLINE	`PL`	Like LINE, but all segments form one polyline object. `C` makes it closed.
RECTANG	`REC`	Two opposite corners. Use `@w,h` for the second corner to give exact width and height.
CIRCLE	`C`	Centre, then radius (or `D` then diameter).
ARC	`A`	Start point, a point on the arc, end point.
ELLIPSE / **ELLIPSEARC**	`EL` / `EA`	Centre and the two axis ends; the arc form also asks for start and end angles.
SPLINE / **SPLINEFIT**	`SPL` / `SPF`	A smooth curve by control vertices, or one that passes through every point you click.
POLYGON	`POL`	Number of sides, centre, `I` or `C`, then radius.
POINT	`PO`	Place point markers. `DDPTYPE` chooses the marker style and size.
RAY / **XLINE**	`RAY` / `XL`	Construction lines infinite in one or both directions.
REVCLOUD	`RC`	Click around an area to mark a revision; `C` closes the cloud.
TEXT, **MTEXT**, **TABLE**	`T`, `MT`, `TB`	See Chapter 11.
FENCE	`FN`	See Chapter 18.

Example — a house outline with internal walls

1. Choose the **BUILDING** layer from the status bar.
2. `REC` `Enter` `6,14` `Enter` `@16,11` `Enter` — the outside of the house.
3. `L` `Enter` `14,14` `Enter` `@0,11` `Enter` `Enter` — a wall between bedroom and kitchen.
4. `L` `Enter` `6,20` `Enter` `@8,0` `Enter` `Enter` — the living-room wall.
5. `A` `Enter` and click three points to draw a door swing.

> **TIP**
> To change a finished object, select it and edit any value in the Properties panel — coordinates, radius, width, height, vertices. You never need to redraw to fix a dimension.

ACCURACY

07 Drafting precision

Object snaps

With **OSNAP** on, the cursor locks onto exact points of existing objects. A marker and a tooltip show what it found — for example *Endpoint · 8.38 < −162.6°* — before you click.

Snap	Finds
Endpoint	The ends of lines, arcs and polyline segments.
Midpoint	The middle of a segment.
Center (CEN)	The centre of a circle, arc or ellipse.
Quadrant	The 0°, 90°, 180° and 270° points of a circle.
Intersection (INT)	Where two objects cross.
Perpendicular (PERP)	The point at right angles from your last point.
Tangent (TAN)	A tangent point on a curve.
Nearest (NEA)	The closest point on any object.
Extension · Parallel	Points along a line's extension, or parallel to a segment you hover.

Turn individual snap modes on or off on the status bar. The crosshair button on the panel rail opens the full object-snap settings.

Grid and snap

Command	Effect
`GRID` or `F7`	Show / hide the grid.
`GRID 5`	Draw grid lines every 5 units.
`GRID A`	Automatic spacing that adapts to the zoom level (**AUTO** on the status bar).
`SNAP` or `F9`	Toggle snapping the cursor to the grid.
`SNAP 0.5`	Cursor moves in steps of 0.5.
`GRID LOCK ON/OFF`	Whether setting a grid spacing also sets the snap step.

Ortho, polar and tracking

- **ORTHO** (`F8`) — the cursor moves only horizontally or vertically from the last point.
- **POLAR** (`F10`) — the cursor locks to multiples of the polar angle shown on the status bar (e.g. 90°, 45°, 30°). Choose the angle from the list beside it.
- **OTRACK** (`F11`) — object-snap tracking: hover a snap point, move away, and the cursor tracks along alignment lines from it.

EXAMPLE — EXACT LENGTHS WITHOUT TYPING COORDINATES

Turn on ORTHO, start `L`, click a start point, move the cursor to the right and type `12` `Enter`; move it up and type `4.5` `Enter`. You have drawn a 12 × 4.5 corner.

CHOOSING WHAT TO CHANGE

08 Selecting & the Properties panel

Ways to select

Action	Result
Click an object	Selects it; the Properties panel opens.
Click more objects	Adds them to the selection.
Click empty space, then click again to the **right**	**Green crossing box** — selects everything the box touches.
Click empty space, then click again to the **left**	**Blue window box** — selects only what is fully inside.
`Ctrl` + `A`	Select all.
`Esc`, `Ctrl` + `D`	Clear the selection.
Drag a selected object	Moves it.
`Del`	Erases the selection.

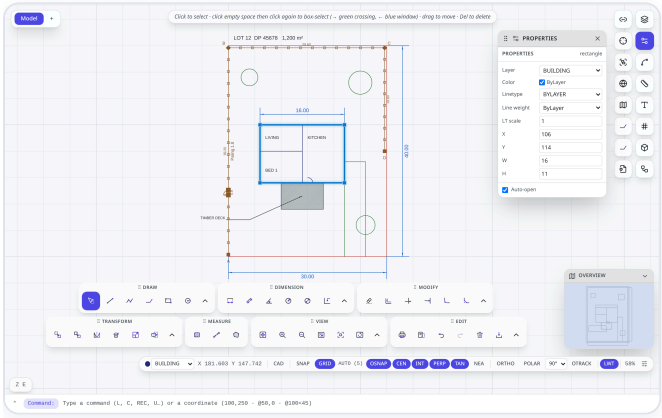


Figure 8.1 — The house rectangle selected. Its layer, colour, linetype, lineweight, position and size are all editable.

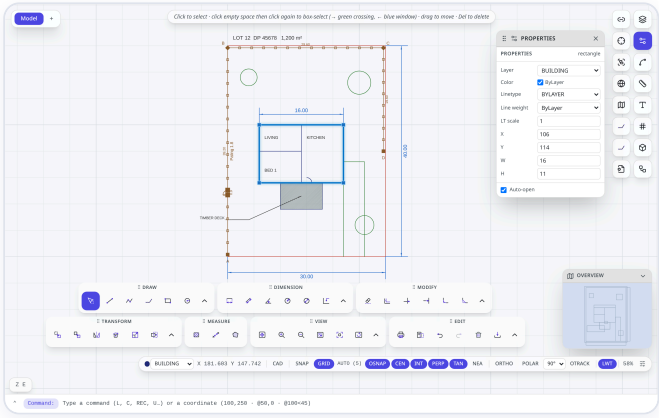


Figure 8.2 — Grips: the blue squares on a selected object. Drag one to reshape the object.

The Properties panel

Every object type has its own properties. Change a value and press `Enter` (or click away) and the drawing updates at once. Common to all objects: **Layer**, **Color** (tick *ByLayer* to follow the layer), **Linetype**, **Line weight** and **LT scale**. Below that are the geometry fields — for example *X, Y, W, H* for a rectangle, centre and radius for a circle, and a vertex table (with insert and delete) for polylines, splines and revision clouds. Text, tables, dimensions, hatches and fences have the richest sections. When several objects are selected, the panel edits the values they share.

Quick select

Type `QSELECT` (`QSE`) to select by property. Choose a **Type**, **Layer**, **Linetype**, **Color** and an optional **Length** range; the dialog shows how many objects match before you click **Select**.

Example: select every circle on the LANDSCAPE layer — Type = Circle, Layer = LANDSCAPE, **Select** — then change their colour in the Properties panel in one go.

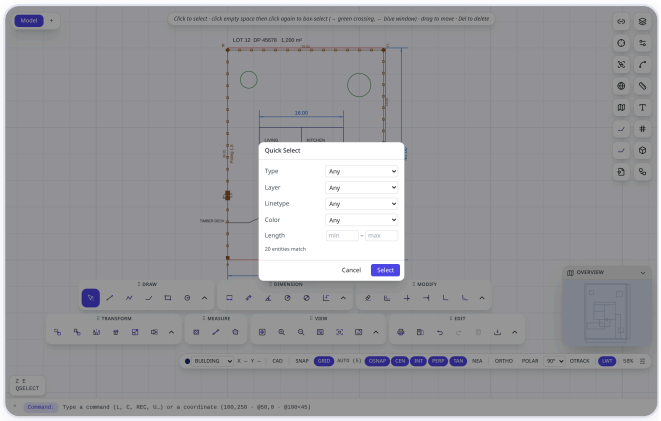


Figure 8.3 — Quick Select.

Groups

Select objects and type `GROUP` (`G`) to bind them into a named group that selects as one. `UNGROUP` dissolves it. `GROUPS` opens the group manager, where you can rename, select or remove groups.

EDITING

09 Modifying geometry

Command	Alias	What it does · how
MOVE	`M`	Select, base point, destination. *M ⏎ (select) ⏎ 0,0 ⏎ @5,0*
COPY	`CO` , `CP`	As MOVE, but leaves the original. Keeps placing copies until `Esc`.
ROTATE	`RO`	Base point, then an angle (typed or picked).
SCALE	`SC`	Base point, then a factor — `2` doubles, `0.5` halves.
MIRROR	`MI`	Two points defining the mirror line.
OFFSET	`O`	Distance, pick an object, click the side. Repeats until `Esc`.
TRIM	`TR`	Click each piece to cut away at its nearest crossing.
EXTEND	`EX`	Click near an end to extend it to the next object.
FILLET	`F`	Pick two objects to join with a rounded (or sharp, radius 0) corner.
CHAMFER	`CHA`	Pick two objects to join with a bevelled corner.
BREAK	`BR`	Split an object at one point or remove the part between two.
JOIN	`J`	Join touching lines and arcs into one polyline.
STRETCH	—	Window the vertices to move; they move, the rest stays.
LENGTHEN	`LEN`	Change a length by Delta, Percent, Total or Dynamically.
ALIGN	`AL`	Two source and two target points; optionally scale to fit (`Y` / `N`).
ARRAY	`AR`	Rows and columns, or copies around a centre.
PEDIT	`PE`	Close/Open, Join, Width, Fit, Spline, Decurve, Reverse a polyline.
EXPLODE	`X`	Break blocks, polylines and dimensions into their parts.
DIVIDE / MEASURE	`DIV` / `ME`	Place points dividing an object into N parts, or every N units along it.
MATCHPROP	`MA`	Copy layer, colour, linetype etc. from one object to others.
ERASE	`E` , `DEL`	Delete the selection (or press `Del`).

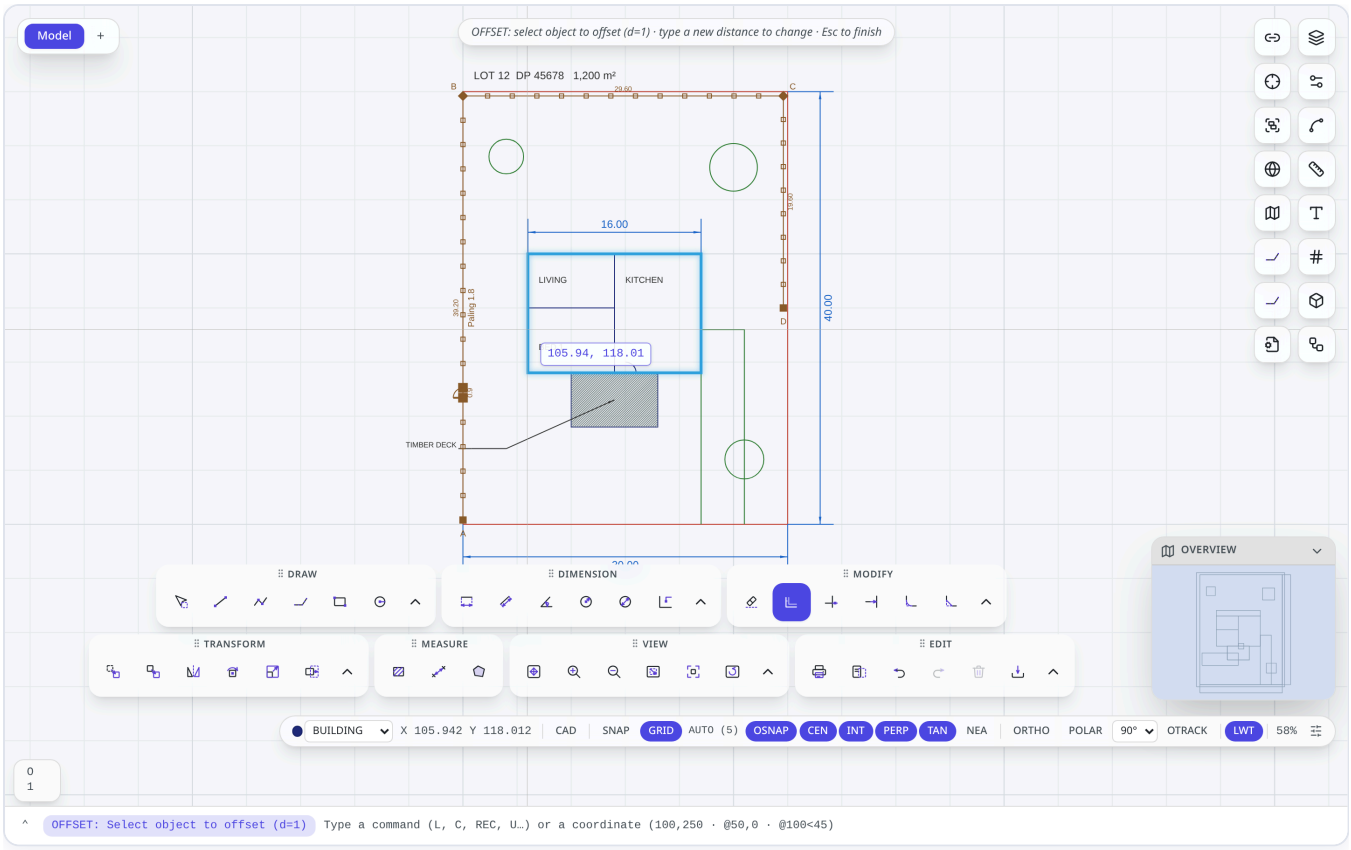


Figure 9.1 — OFFSET with a distance of 1: hovering the house highlights it and shows where the offset copy will go. The prompt reads *OFFSET: Select object to offset (d=1)*.

EXAMPLE — A 1 M EAVES LINE ROUND THE HOUSE

`0` `Enter` `1` `Enter`, click the house, click outside it, `Esc`. Then select the new rectangle and set its Linetype to *DASHED* in Properties.

ORGANISATION

10 Layers, linetypes & lineweights

Layers are how you organise a drawing: put boundaries, buildings, dimensions and notes on separate layers so you can colour, hide, lock and plot them independently.

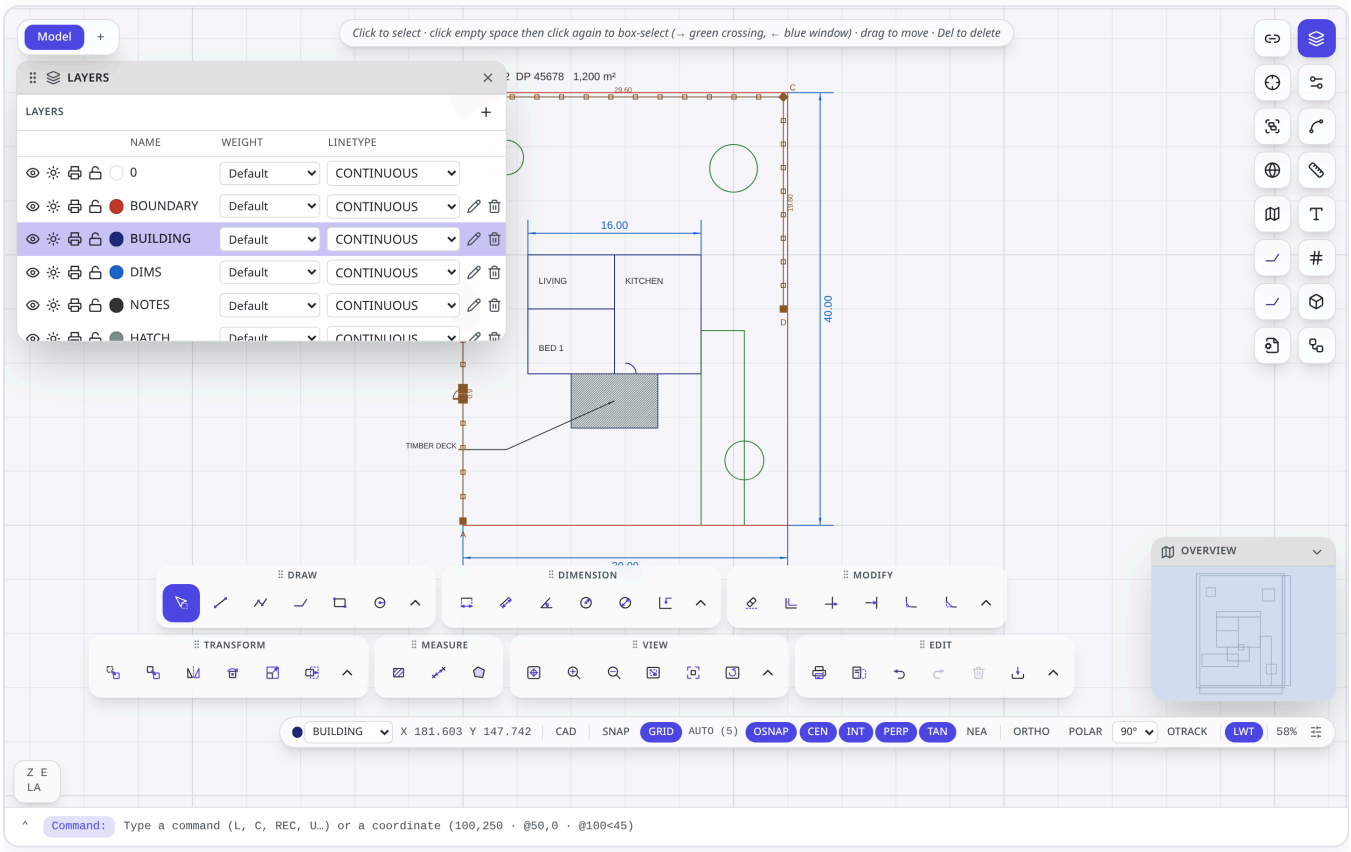


Figure 10.1 — The Layers panel (`LA`). The highlighted row is the current layer.

The Layers panel

Each row has, from the left: **on/off** (eye), **freeze** (sun), **plot** (printer), **lock** (padlock), the layer **colour**, its **name**, **lineweight** and **linetype**, then **rename** and **delete**. Click **+** to add a layer. Click a row to make it current.

- **Off** hides a layer. **Frozen** also hides it and excludes it from selection everywhere.
- **Locked** layers stay visible but cannot be selected or edited — ideal for a survey you trace over.
- Turning **plot** off keeps a layer on screen but leaves it out of PDFs.

Layer commands

Command	Effect
`LAYISO`	Isolate: show only the layers of the selected objects.
`LAYUNISO`	Restore the visibility from before LAYISO.
`LAYMRG`	Merge the selected objects' layers into the current layer.
`LAYDEL`	Delete the selected objects' layers **together with everything on them**.

Linetypes

`LT` opens the Linetype panel: *CONTINUOUS, DASHED, DOTTED, CENTER, HIDDEN, DASHDOT* and more. Assign a linetype to a layer or to individual objects. `LTSCALE` (`LTS`) sets how long the dashes are across the whole drawing; each object's own **LT scale** fine-tunes it.

Lineweights

Set lineweights per layer in the Layers panel or per object in Properties. Turn on **LWT** on the status bar to see them on screen; they always apply when you plot.

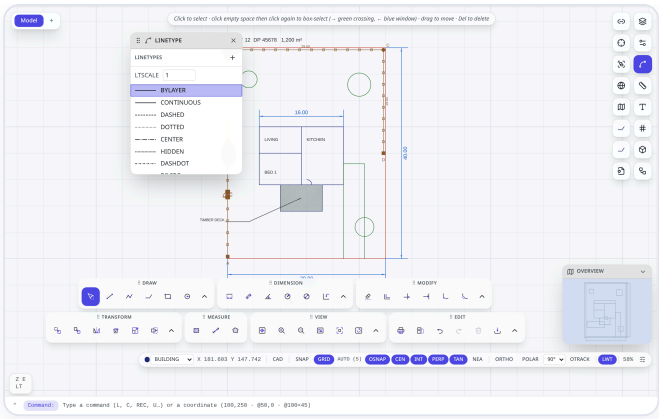


Figure 10.2 — The Linetype panel and LTSCALE.

ANNOTATION

11 Text, tables & leaders

Command	How to use it
TEXT (`T`)	Click where the text starts and type directly in the drawing. `Enter` finishes. Double-click any text later to edit it in place.
MTEXT (`MT`)	Drag a box; type a paragraph that wraps to the box width. Bold, italic and other formatting are available while editing.
TABLE (`TB`)	Click to place a table. Double-click a cell to type in it; set rows, columns, sizes and cell alignment in Properties.
LEADER (`LE` , `MLD`)	Click the arrow tip, a bend point and the end; then type the note. In the sample drawing, *TIMBER DECK* is a leader.
STYLE (`ST`)	Text styles: font, fixed height, width factor, oblique angle, bold and italic. New text uses the current style.
UPDATEFIELD	Recalculate field values inside block attributes (e.g. an area or date in a title block).

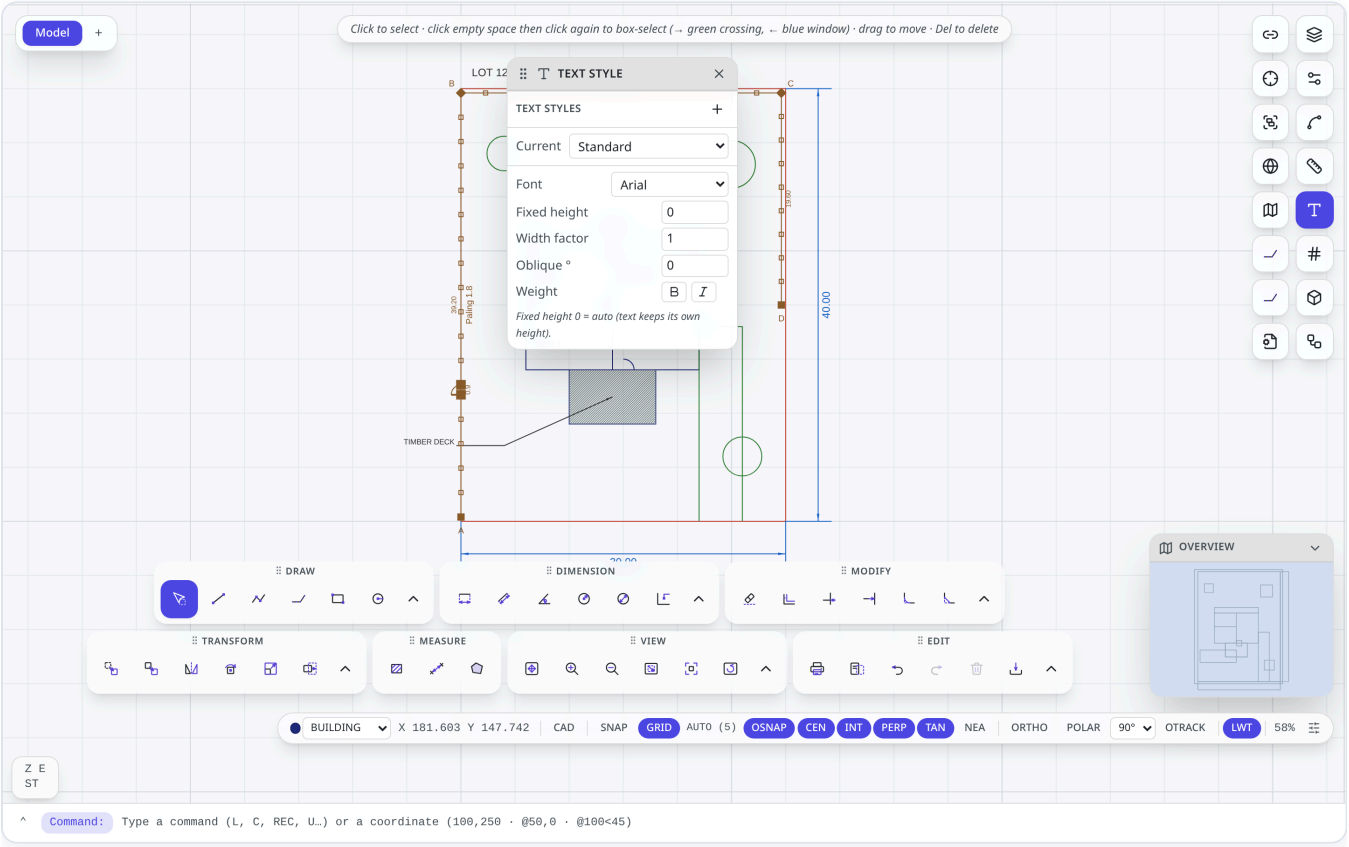


Figure 11.1 — The Text Style panel. A fixed height of 0 lets every text object keep its own height.

> **TIP**
> Change the content, height, rotation and justification of any text from the Properties panel — select several labels at once to make them all the same height.

ANNOTATION

12 Dimensions

Dimensions are associative: when the geometry they measure changes, the dimension follows and its value updates.

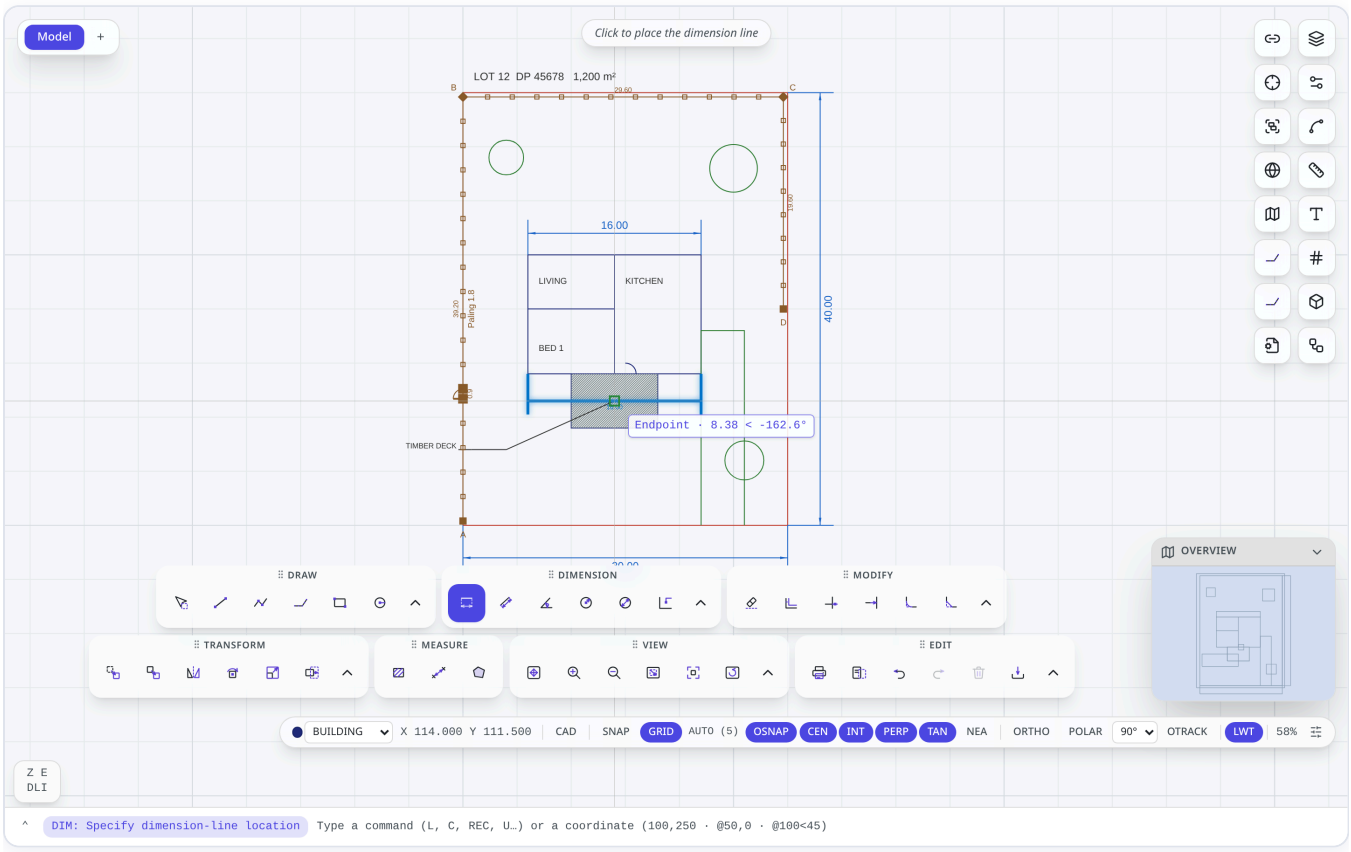


Figure 12.1 — DIMLINEAR: the two points have been picked on the house corners (snapped to *Endpoint*) and the dimension line follows the cursor until you click to place it.

Command	Alias	Measures
DIMLINEAR	`DLI`	Horizontal or vertical distance — direction follows your drag.
DIMALIGNED	`DAL`	True distance, parallel to the two points.
DIMANGULAR	`DAN`	The angle between two lines.
DIMRADIUS / **DIMDIAMETER**	`DRA` / `DDI`	Radius or diameter of a circle or arc.
DIMORDINATE	`DOR`	X or Y coordinate of a feature from the datum.
DIMARC	`DAR`	The length along an arc.
DIMBASELINE	`DBA`	More dimensions from the same baseline as the last one.
DIMCONTINUE	`DCO`	A chain of dimensions end-to-end.

Dimension styles

`DIMSTYLE` (`D`) opens the Dim Style panel. A style controls text height and scale, arrow size and type, extension-line offset and extension, text gap, baseline spacing, precision and angle precision, units, text colour, and whether extension lines are suppressed. Create a style with **+**, choose it as **Current**, and new dimensions use it.

To override one dimension, select it and change its text, size or arrows in Properties.

> **TIP**
> Use **Text scale** to make one style read well at different plot scales — e.g. 1 for 1:100 sheets, 2.5 for 1:250.

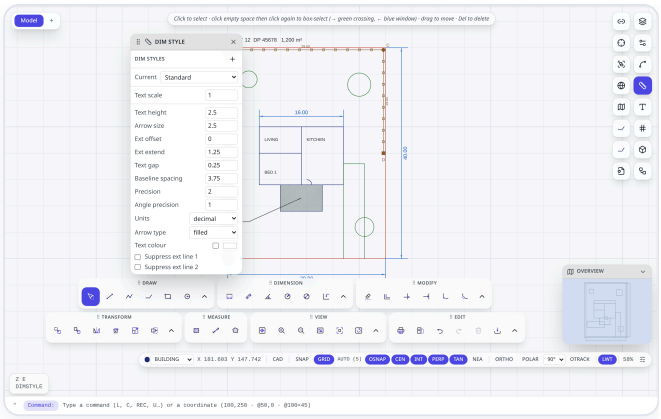


Figure 12.2 — The Dim Style panel.

FILLS & AREAS

13 Hatching & regions

Hatching an area

1. Type `H` (or click **Hatch** in the Measure group). The prompt reads *HATCH: Click on or inside a closed boundary to fill it.*
2. Click inside any closed area. BranchCAD finds the boundary itself — including islands inside it, which are left unfilled.
3. Select the hatch to change its **Pattern** (ANSI31, EARTH, SOLID and others), **Angle**, **Scale** and **Line weight**, or type `HE` to edit it.

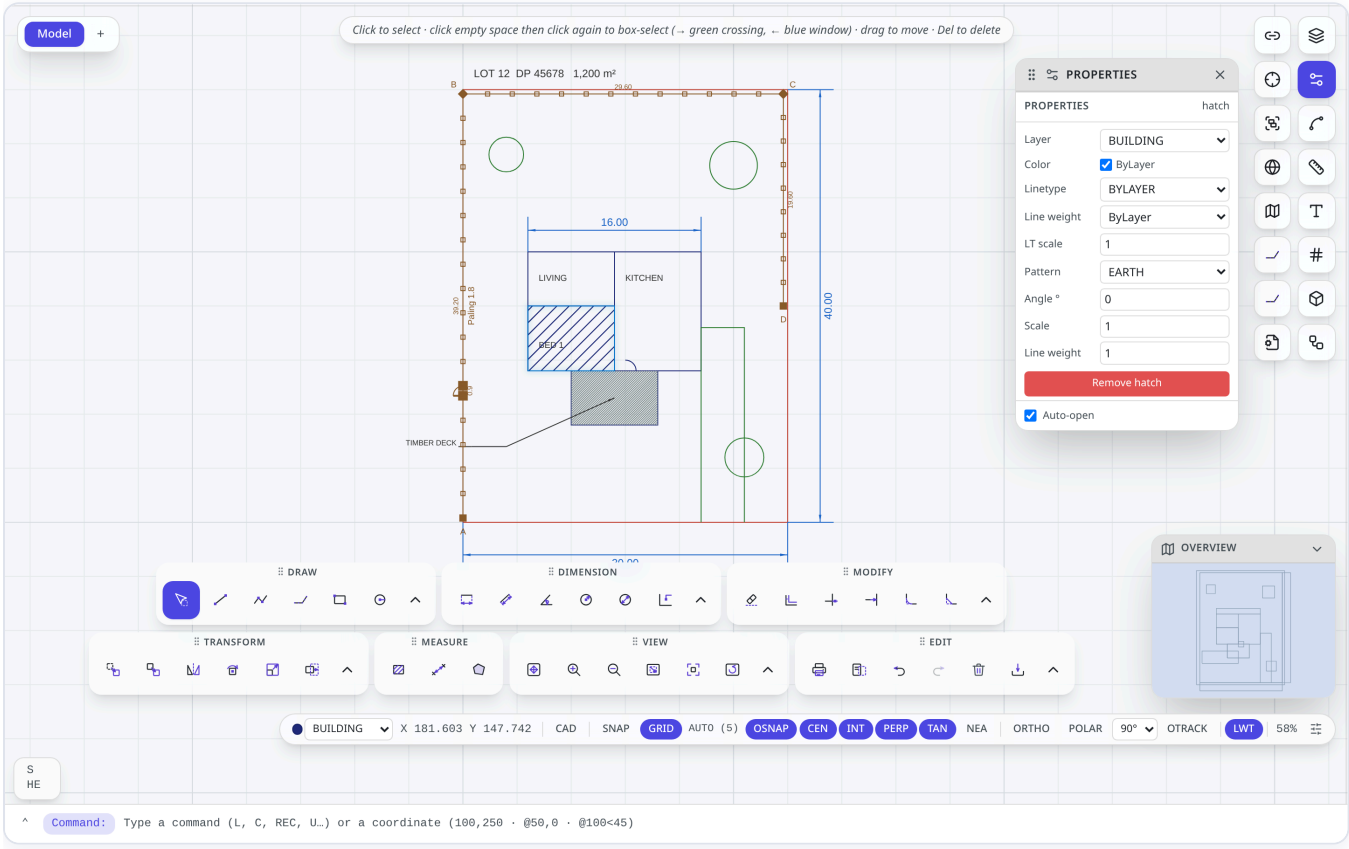


Figure 13.1 — Bedroom 1 hatched with a single click and the hatch's properties open. **Remove hatch** deletes it.

Hatches are associative: move or stretch the boundary and the hatch refills to match.

Regions and boolean shapes

A **region** is a filled area that can have holes. Select closed shapes and type `REGION` (`REG`, `BO`) to convert them. Then combine regions:

- `UNION` (`UNI`) — merge into one shape.
- `SUBTRACT` (`SU`) — cut the others out of the first one you selected.
- `INTERSECT` (`INT`) — keep only the overlap.

> **EXAMPLE**
>
> Draw the section boundary and the house footprint, convert both to regions, and SUBTRACT the house from the section: the result is the open-space region, whose area is shown in Properties.

REUSE

14 Blocks, images & external references

Blocks

A block is a named, reusable symbol. Every drawing starts with a library of built-in blocks such as *BH, SPT, CPT, PILE, ANCHOR* and *FOOTING*.

1. Type `I` (`INSERT`) to open the Blocks panel.
2. Click **Insert** beside a block. It follows the cursor.
3. Type `S` to set a scale or `R` to set a rotation, then click to place it.

To make your own block, select the objects and type `B` (`BLOCK`), or click **Define** in the panel. **Explode** (or `X`) turns an inserted block back into separate objects. Blocks may carry **attributes** — text values such as a tag or a level — that you fill in for each insert.

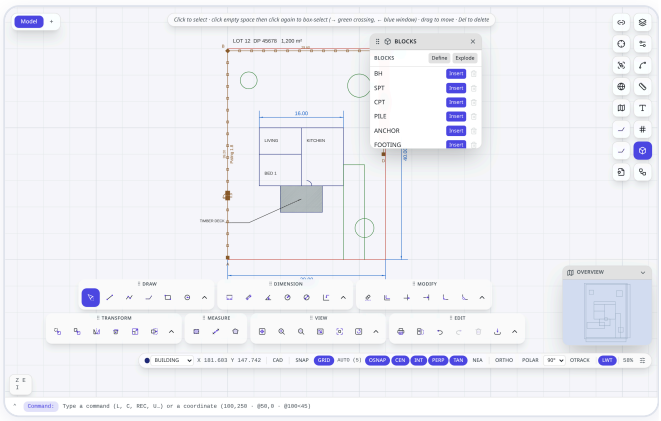


Figure 14.1 — The Blocks panel.

External references (XREFs)

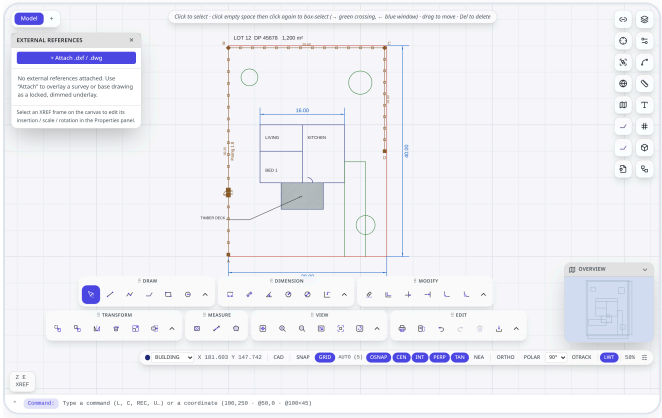


Figure 14.2 — The External references panel.

An XREF overlays another DXF or DWG file — a survey, a base plan from an architect — as a locked, dimmed underlay that you can snap to but not accidentally edit.

- `XREF` (`XR`) opens the manager; `XATTACH` (`XA`) or **+ Attach .dxf / .dwg** picks a file.
- Select an XREF frame to set its insertion point, scale and rotation in Properties.
- `XBIND` copies the XREF's contents into your drawing permanently; `XDETACH` removes it.

Raster images

Type `IMAGE` (`IAT`) to attach a PNG or JPEG — a scanned plan or a photo — and place, scale and rotate it like any object. Images can be traced over with snaps and are included in plots.

INQUIRY

15 Measuring

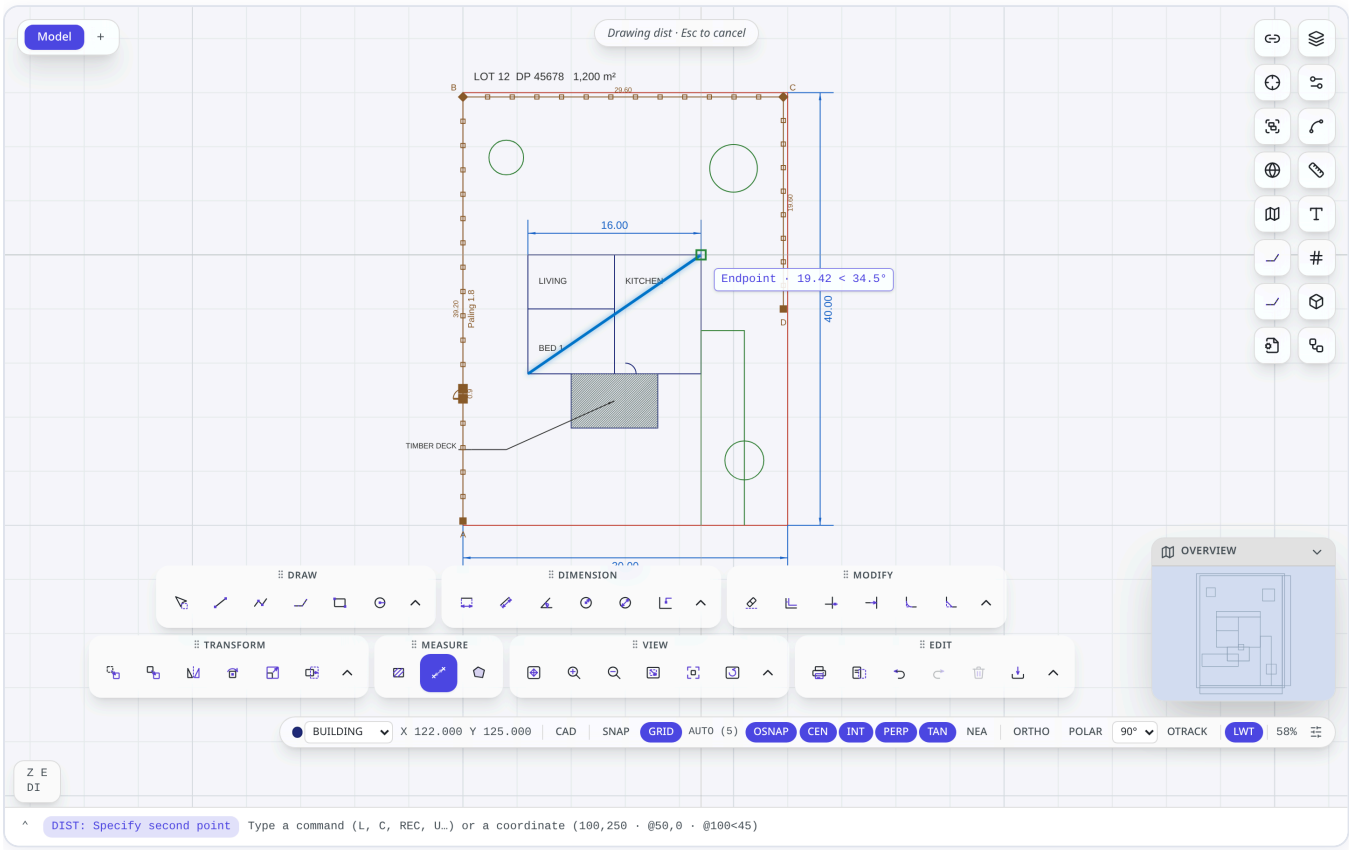


Figure 15.1 — DIST: after picking the first point, the tooltip shows the live distance and angle (*19.42 < 34.5°*) to the snapped second point.

Command	Use
DIST (`DI`)	Click two points. The command line reports the distance, the angle and the ΔX / ΔY between them.
AREA (`AA`)	Click the corners of an area and type `C` to close. Reports area and perimeter.
Properties panel	Select a closed polyline, circle, region or hatch to read its area and length directly; select a fence to read its total length and number of gates.

OUTPUT

16 Layouts, sheets & plotting

Draw at full size in **Model** space; arrange it on paper in a **layout**. A layout is a sheet of paper with one or more **viewports** — scaled windows onto the model.

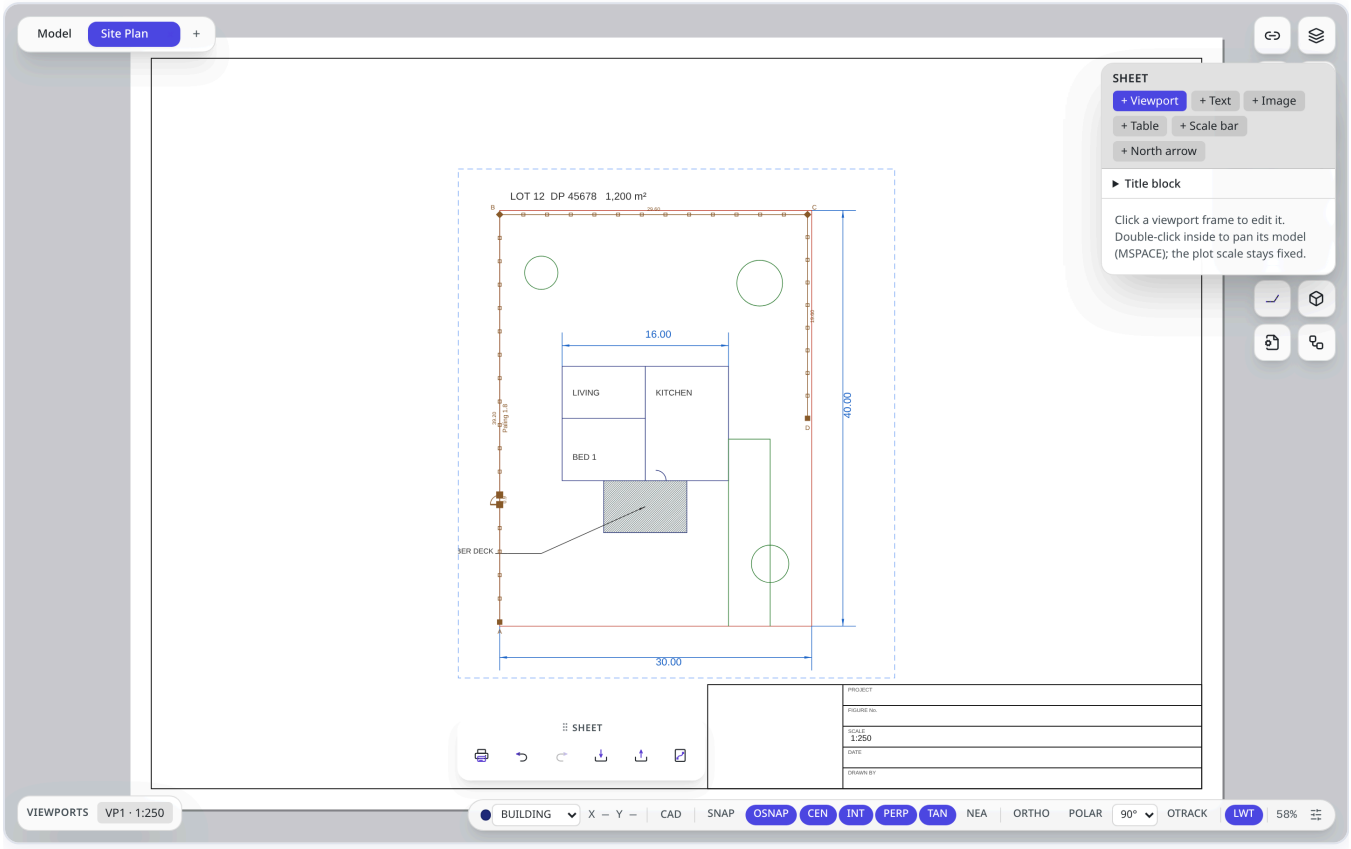


Figure 16.1 — The *Site Plan* layout: an A3 landscape sheet with a 1:250 viewport (bottom left), a title block, and the **Sheet** panel for adding viewports, text, images, tables, a scale bar and a north arrow.

Making a sheet

1. Click **+** next to the *Model* tab, or type `LAYOUT` (`LO`). Name the sheet and choose a paper size and orientation.
2. Click **+ Viewport** in the Sheet panel (or type `MVIEW`) and drag the viewport frame on the paper.
3. Select the viewport and set its **scale** (e.g. 1:250) in Properties. Double-click inside it to pan the model while the scale stays fixed; click outside to return to the paper.
4. Fill in the **Title block** section — project, drawing title, scale, date, drawn by.
5. Add a **Scale bar** and **North arrow**; they read their scale and orientation from the viewport.

`PAGESETUP` edits the active sheet's paper size, margins and plot scale.

Plotting to PDF

1. Type `PLOT` (or click the printer in the Edit group).
2. Choose the **Layout** to plot — the Model or any sheet.
3. Choose a **Colour mode**: Colour, or monochrome for clean black-on-white drawings.
4. Optionally open **Plot styles** (map colours to lineweights) or **Pen widths per layer**.
5. Click **Export PDF**.

The PDF is a true vector plot: line thicknesses are the assigned millimetre weights and text stays sharp at any zoom.

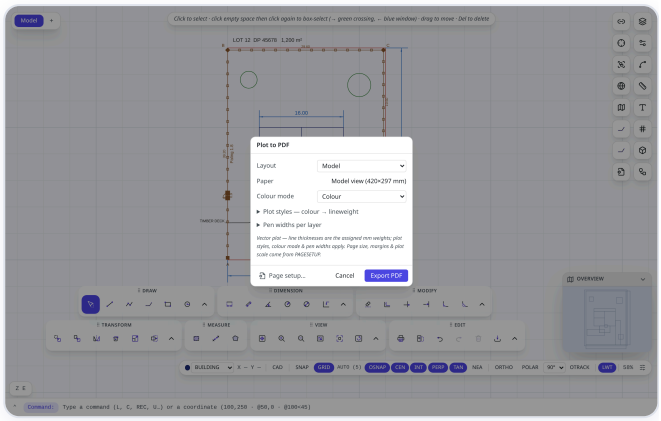


Figure 16.2 — The Plot to PDF dialog.

REAL-WORLD LOCATION

17 GIS & georeferencing

Georeferencing tells BranchCAD where your drawing sits on the earth. Your geometry stays in convenient local metres; BranchCAD translates to and from the map grid whenever you need it.

Georeference a drawing

1. Type `GEOREF` (or click the globe on the panel rail).
2. Choose the **Coordinate system** — NZTM2000, the NZ meridional circuits, or MGA2020 / MGA94 zones for Australia.
3. Enter the **grid coordinate of local (0,0)**: the easting (E) and northing (N) where your drawing's origin belongs. **Round to 100 m** tidies the values.
4. Click **Apply**. The status changes to the CRS name, and the coordinate read-out shows E / N.

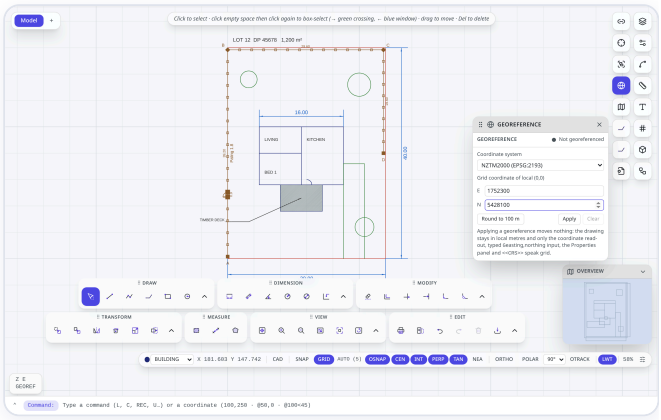


Figure 17.1 — The Georeference panel with NZTM2000 selected.

> **NOTHING MOVES**
> Applying a georeference does not move your drawing. It changes only the read-out, typed `G` easting,northing input, the Properties panel and exports in grid coordinates.

Working in grid coordinates

Once georeferenced, type a grid coordinate with a `G` prefix wherever a point is asked for: `L` `Enter` `G1752300,5428100` `Enter` `@20<90` `Enter` draws a line from that survey mark straight north for 20 m.

The GIS panel

Type `GIS` to open the GIS panel (currently available for New Zealand, New South Wales and Queensland):

- **Basemap imagery** — show satellite imagery (with or without labels) or a street map under your drawing. Imagery is drawn in the drawing's own projection.
- **Address** search (`ADDRESS`) — type at least three characters to find a property and frame it.
- **Parcels** — type `PARCEL` and click inside a property: its legal boundary is inserted on locked GIS layers, with its appellation.
- **Building outlines** — type `BUILDING` (`BLDG`) and click a house to insert its footprint as a closed polyline. The tool stays active, so click the next house to grab it too. Footprints are indicative, not survey-accurate.

Map mode

Type `MAP` to switch the editor to an **interactive map environment** — satellite, streets or terrain that you can pan, zoom and rotate, with your drawing overlaid in place. Type `CAD` to return to the CAD canvas. `AOI` (`MAPAREA`) lets you drag a rectangle to restrict the map to an **area of interest**.

GIS data in and out: `CSVIN` imports a CSV point schedule, `GEOJSONIN` imports GeoJSON features, and `DXFOUT GRID` exports a DXF in real grid coordinates (Chapter 19).

SPECIALIST TOOLS

18 Fence design

A fence in BranchCAD is a single intelligent object. You draw the path and choose a fence type; BranchCAD generates the posts, rails, infill, gates, elevation and material list — and regenerates them every time you edit the path.

The fence library

Type `FT` (`FENCETYPE`) to open the **Fences** panel. Fence types are grouped — *Boundary*, *Front fences*, *Pool*, *Rural* — each with a thumbnail and height, for example *Timber paling boundary 1.8 m*, *Picket front fence 1.1 m*, *Pool barrier 1.2 m*, *Steel sheet panel 1.8 m*, *Aluminium horizontal slat* and *Rural post and wire*. Search the library from the box at the top; **Details** shows the specification.

When a newer version of a type is available, an **Update** button appears on its card.

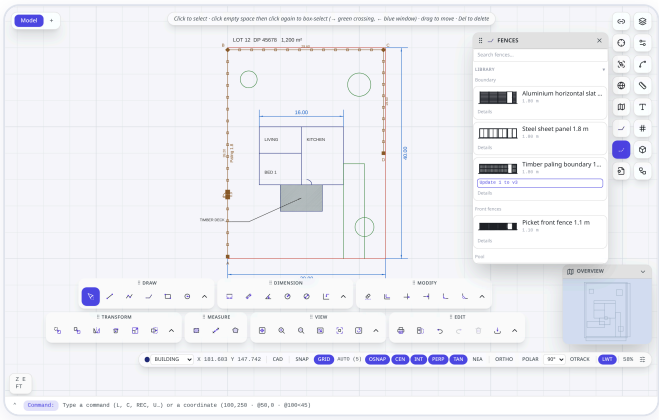


Figure 18.1 — The Fences panel.

Drawing a fence

1. Click a fence type in the library to arm it (or drag its card onto a boundary or parcel to fence it in one go).
2. Type `FN` (`FENCE`) and click the corners of the fence, just like a polyline. `C` closes it into a loop; `Enter` finishes an open run.
3. Add gates: type `GATE` and click on the fence where the gate goes. Set the gate kind (pedestrian or driveway), width, number of leaves, hinge side and swing in Properties.
4. To change the type of existing fences, select them and type `FENCEAPPLY`, or pick another **Type** in Properties.

In plan, a fence shows its posts (end, corner, line and gate posts), corner letters (A, B, C…), the length of each side and a type tag such as *Paling 1.8*.

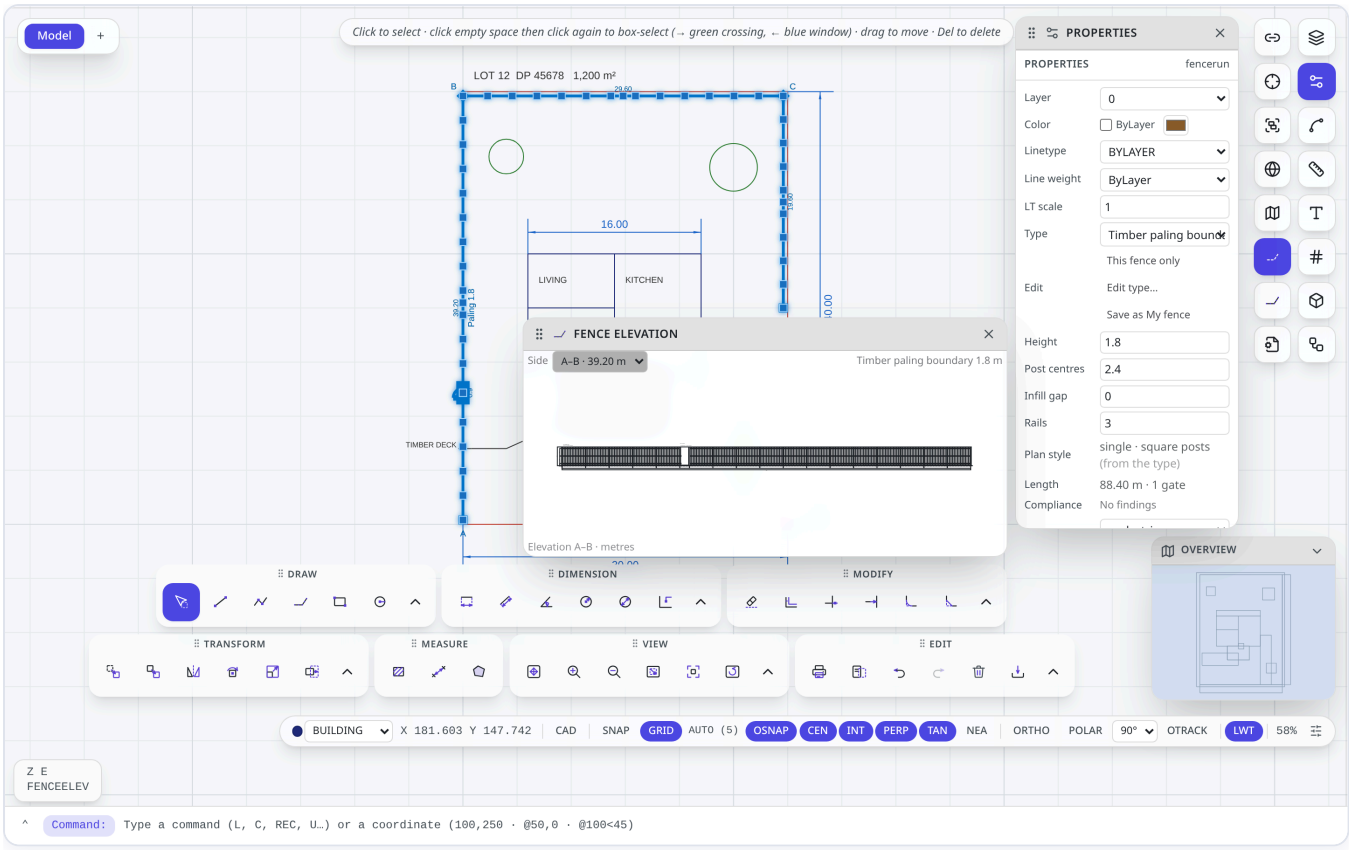


Figure 18.2 — The boundary fence selected. Properties shows its type, height, post centres, rails, length (88.40 m · 1 gate) and compliance findings; the **Fence elevation** panel shows side A–B.

Elevations, designer and takeoff

- **Elevation** — select a fence and type `FEL` (`FENCEELEV`). Choose a side from the **Side** list to see posts, rails, palings, gates and dimension chains drawn to scale.
- **Per-fence adjustments** — change height, post centres, infill gap and number of rails for *this fence only* in Properties, or choose **Edit type...** / **Save as My fence** to create your own reusable type.
- **Fence designer** — `FENCEDESIGN` opens the designer for building a fence type from scratch.
- **Compliance** — rules such as pool-barrier requirements are checked as you draw; findings appear in Properties.
- **Bill of materials** — the Fences panel's BOM produces the quantities of posts, rails, palings, gates and hardware for the selected fences, ready to price.

INTEROPERABILITY

19 Importing & exporting files

Task	Command	Notes
Open a DXF or DWG	`IMPORT`, `OPEN`	Brings the file's layers, blocks, text and dimensions into the current model.
Overlay a DXF/DWG	`XATTACH`	As a locked underlay (Chapter 14).
Export DXF	`EXPORT`, `DXFOUT`, `SAVEAS`	A standards-conformant DXF that opens in AutoCAD and other CAD programs.
Export DXF in grid coordinates	`DXFOUT GRID`	Coordinates translated to the drawing's CRS, for GIS use.
Import survey points	`CSVIN`	CSV point schedules.
Import GIS features	`GEOJSONIN`	GeoJSON points, lines and polygons.
Attach an image	`IMAGE`	PNG / JPEG raster.
PDF	`PLOT`	Vector PDF of the model or a sheet (Chapter 16).

TIP

After importing, type `Z E` to frame everything, then `LA` to review the layers that came in. Large DWG files can take a few seconds to read.

TEAMWORK

20 Sharing, collaboration & history

Sharing a drawing

1. Click **Share** in the top bar. The *Share this drawing* dialog opens.
2. Choose the link permission: **Can view**, **Can comment** or **Can edit** (edit links need a paid plan).
3. Click **Create link** and **Copy** it — or type a **Recipient email** and click **Send**.

People with a view or comment link need no account. People with an edit link sign in (or create a free account) and then edit alongside you. The dialog lists every link with its status (*Active, Revoked, Expired*) and open count; **Revoke** stops a link at once. Every shared link supports up to 20 people at the same time.

Editing together

- Everyone on the drawing appears as an avatar in the top bar, with a colour dot for *Editor* or *Viewer*, and a count such as *3 here*.
- Click someone's avatar to **Follow** them — your view tracks theirs. Click again to stop following.
- Changes appear for everyone instantly. If someone edits an object you have selected, it flashes so you notice.
- Each person's undo affects only their own changes.

Comments

Click **Comments** in the toolbar. Click **+ Add**, click the spot on the drawing, type your comment and click **Comment**. Comments can be replied to, edited, **Resolved** and **Reopened**; filter the list by *Open, Resolved* or *All*, and click a comment to jump to its place in the drawing.

Version history and branches

Click **History** in the top bar.

To…	Do this
Mark a milestone	Type a name in **Version name** (e.g. *Rev C*) and click **Save**. Named versions are tagged *named* in the timeline.
See what changed	Click **Compare with previous** on a row, or tick two rows and click **Compare**.
Go back	Click **Restore** on a version and confirm. Restoring creates a new version — nothing is lost.
Try an alternative	Click **+ New branch from current**, name it (e.g. *Option B*) and click **Fork**. Use **Switch** to move between branches.
Bring a branch back	Click **Merge** on the branch, review any **Conflicts** and click **Apply merge**.
Recover recent work	Open **Auto-saves (recovery)** and click **Restore** on an entry.

The **Branch tree** shows the history visually — click two nodes to compare them. Owners also see an **Activity** tab with an audit trail of who did what.

PERSONALISING

21 Settings & plans

Settings

Section	Options
Appearance	Theme (Light, Dark, System, Custom), background, text colour, accent colour, font and interface size.
Editor defaults	Units (mm, cm, m, in, ft), show grid, object snap, autosave cadence (1–30 s), toolbar layout reset.
Team	For team accounts: add members and set roles — Owner, Admin, Editor, Viewer.
Billing	Your plan, invoices and payment details through the secure billing portal.
Account	Name, e-mail and verification, linked Google account, change password.

Plans

Plan	Best for
Free	Learning and personal projects: view and comment links, a basic "what changed" comparison and 30 days of history.
Pro	Professionals: edit links, full version history, branching and the advanced visual comparison.
Team	Firms: shared workspace, member roles and everything in Pro.
Enterprise	Custom requirements — contact sales.

See the **Plans** page for current prices; annual billing is discounted.

REFERENCE

22 Keyboard shortcuts

Keys	Action
`Enter`	Run / finish; repeat last command
`Esc`	Cancel command, clear selection
`Ctrl` + `Z`	Undo
`Ctrl` + `Y` · `Ctrl` + `Shift` + `Z`	Redo
`Ctrl` + `A`	Select all
`Ctrl` + `D` · `Ctrl` + `Shift` + `A`	Deselect all
`Ctrl` + `C` / `Ctrl` + `V`	Copy / paste
`Del` · `Backspace`	Erase selection
`+` / `-`	Zoom in / out
Arrow keys	Pan
`Space` + drag	Pan

Keys	Action
`F7`	Grid display
`F8`	Ortho
`F9`	Grid snap
`F10`	Polar tracking
`F11`	Object-snap tracking
Single-key tools (when the canvas has focus)	
`S` · `L` · `R`	Select · Line · Rectangle
`C` · `A` · `E`	Circle · Arc · Ellipse
`T` · `D` · `G`	Text · Linear dim · Aligned dim
`P`	Pan

EVERY COMMAND

The full list of commands and aliases, with examples, is in the separate **BranchCAD Command Cheat Sheet**.

HELP

23 Troubleshooting & FAQ

I typed a command and something else happened.

While a command is running, its option letters belong to it — e.g. `C` means *Close* inside LINE, not CIRCLE. Press `Esc` first to end the current command, then type the new one.

My clicks don't land where I expect.

Check the status bar: **SNAP** (grid snap) or **ORTHO** may be on, or an object snap may be catching a nearby point — watch the snap marker and tooltip before you click.

I can't select an object.

Its layer may be **locked** or **frozen**. Open `LA` and check the padlock and sun icons. Imported XREFs are locked by design.

I can't see my drawing.

Type `Z E`. If nothing appears, the layers may be off — open `LA`. If you used `LAYISO`, type `LAYUNISO`.

The dashes of a dashed line don't show.

Adjust `LTSCALE` — at large drawing sizes the dashes can be too small (or too large) to see.

My dimension text is tiny on the plot.

Increase the **Text scale** of the dimension style to suit your plot scale (Chapter 12).

Grid coordinates (`G…`) are rejected.

The drawing needs a georeference first — type `GEOREF`.

Map imagery or parcels don't load.

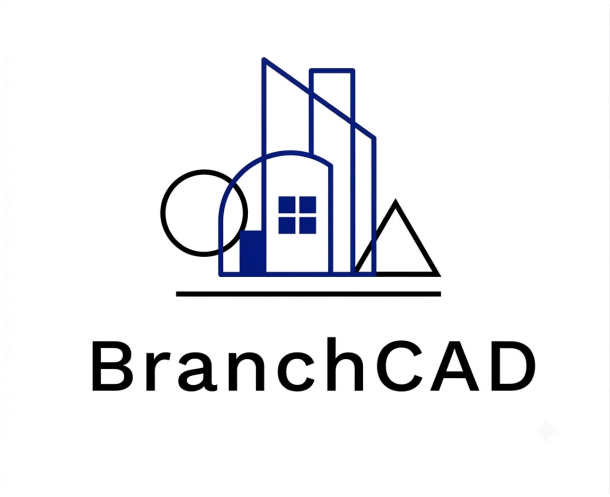
These need an internet connection and are available in New Zealand, New South Wales and Queensland. The drawing keeps working without them.

I went offline.

Keep working. The status shows *Offline · saved on this device* and everything is sent once you reconnect.

I made a mistake an hour ago.

Open **History** and **Restore** an earlier version, or use **Auto-saves (recovery)**. Restoring never deletes the newer work — it becomes part of the history.



BranchCAD User Guide · Edition 1.0 · November 2026

Keep the BranchCAD Command Cheat Sheet beside you for every command and alias.