LEICA ICON ICS50 · INDUSTRY GUIDE

Commercial Millwork Guide

Field verify for offices, lobbies, healthcare and retail. Whole floors in one drawing. Use with the iCS50 General Guide.



SPEEDtemplate

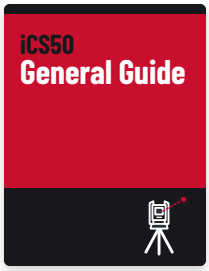
COMMERCIAL MILLWORK GUIDE

EDITION 1.0 · OCTOBER 2026

HOW THE BOOKS WORK

Three books. Each has one job.

The **General Guide** says how. The **Industry Guide** says what. The **Industry Workbook** makes it stick.



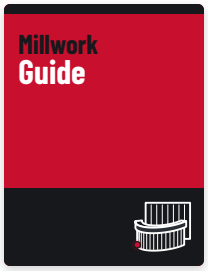
How the iCS50 works

For every crew in every trade: setup, measuring, planes, moving the iCS50, editing, layers and export.

USE IT
Read Sections 1 and 3 before onboarding. After that, look things up when you need them.

KEEP IT
In the iCS50 case. One per shop.

THIS BOOK

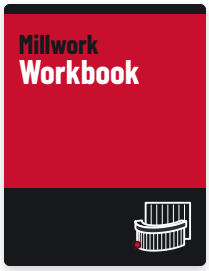


What to capture in the industry

What changes on a kitchen, a cabinet room, a millwork floor, a stair or a boat: what to capture, where to set up, the exact taps, the checks and the hand-off.

USE IT
Before the first job, then on every job, next to the General Guide.

KEEP IT
In the case, with the General Guide. One per shop, per industry.



Learn it by doing it

A self-paced course in the industry: six lessons with the real iCS50, three real jobs, a final project and SPEEDtemplate certification.

USE IT
After onboarding. Once, in order. Write in it.

KEEP IT
With the operator. One per operator.

Which book do I open?

THE QUESTION	OPEN
How do I set up, measure, move the iCS50 or export a DXF?	General Guide
What do I capture on this job, and what does the shop need back?	Industry Guide
I am new, or I want to get certified.	Industry Workbook
Something is not working.	General Guide, Troubleshooting. Then call 919-676-2244.

NOTE When the General Guide and an Industry Guide say different things, the Industry Guide wins for that industry. The website always has the latest version of every book.

What a great field verify looks like

Big spaces, many rooms, other trades everywhere, and shop drawings waiting on your numbers. This guide covers what changes on commercial casework. Everything else is in the iCS50 General Guide. Keep the two together.

What the shop needs back

- [ ] Every wall that gets millwork, as built, with its real length, bow and plumb
- [ ] Floor line and ceiling or soffit line along each run
- [ ] Openings: doors, windows, frames and their trim
- [ ] MEP in the millwork zone: outlets, data, plumbing, fire devices
- [ ] Columns, bulkheads and anything the casework must wrap
- [ ] Curved desks and walls traced, ready for CNC
- [ ] Every room in one drawing, named so drafting can find it
- [ ] Photos of every elevation on the job in SPEEDfolder

TIP Drywall not up yet? That is most jobs. Measure the studs, then offset the walls by the board thickness, or note it on each plane so drafting does (see Common mistakes).



Soffits, bulkheads and ductwork all set where the millwork can go.

COMMERCIAL MILLWORK

Field verify questions, answered

The questions millwork shops and PMs ask most.

How accurate is it?

The VPen is accurate to 1 mm (about 1/32 in) within 33 ft (10 m). Laser mode reaches about 160 ft (50 m).

A whole floor in one drawing?

Yes. Chain V-Targets through the doorways, or set up on the building grid lines or control points.

Can we compare as-built with the drawings?

Import the architectural DXF or PDF, measure as built, and see where walls and openings moved.

Soffits and high ceilings?

The VPen on the Sky Reach pole (optional accessory), a lift, or Laser mode for quick shots.

Curved desks and walls?

Trace them with the VPen, then Smooth into true arcs with the radius on the drawing.

What does the shop get?

2D DXF elevations, 3D DXF of the floor, CNC DXF, ALPHACAM (IAZ) and a Shop Sheet PDF per elevation.

Can it mark casework locations on the slab?

Yes, with the Layout licence, an add-on that is not part of the standard package.

Multi-day jobs?

Leave V-Targets on columns and fixed walls. Next day: open the job, then New Setup from the targets, same drawing.

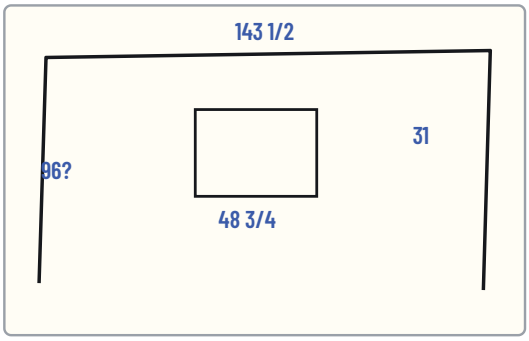
No drywall yet?

That is most commercial jobs. Measure the studs, then offset the walls by the board thickness, or note the board on each plane so drafting allows for it.

Tape and drawings vs the iCS50

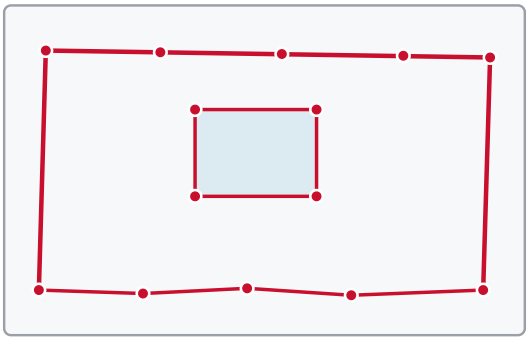
Field verify is still a tape, a laser distance meter and red lines on a print. Here is what changes.

TAPE AND A SKETCH



One height, one tape, redrawn later.

THE iCS50



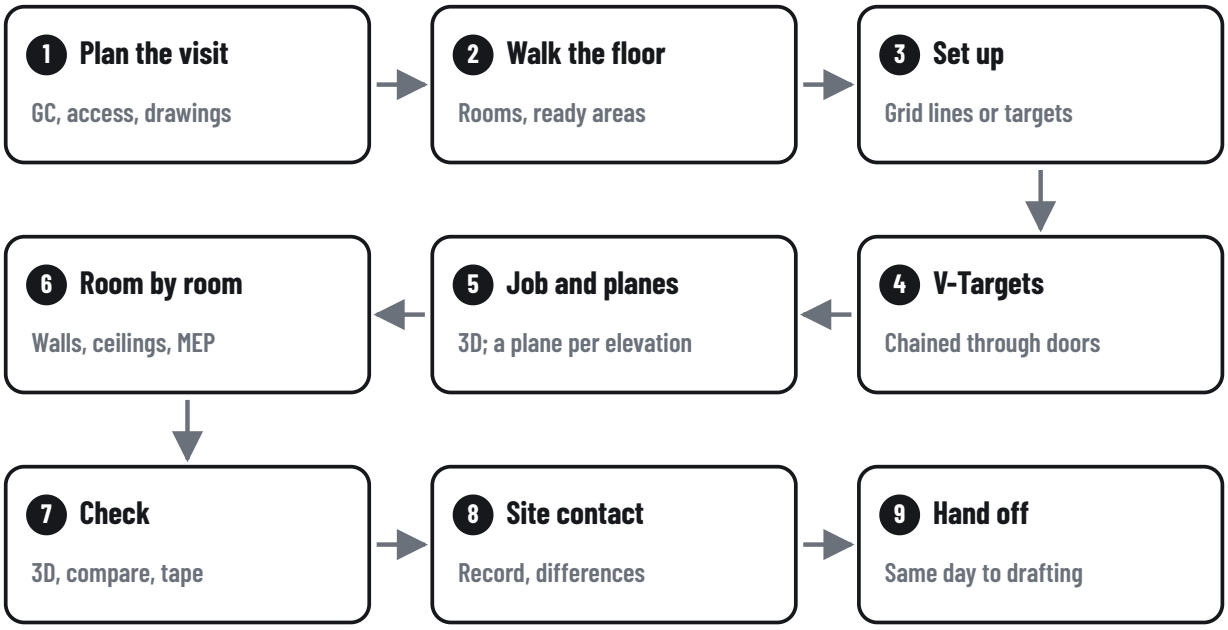
Every wall as built, in a file.

TAPE AND RED LINES	WHERE IT GOES WRONG	THE ICS50
Lengths at one height	Bowed walls and off-plan walls missed	Corners top and bottom, floor and ceiling lines
Ceiling height at one spot	Tall units hit the soffit	Ceiling and soffit lines along every run
Trusting the architectural drawing	Casework built to a wall that moved	Measure as built; compare with the imported DXF
MEP located by tape from a corner	Cutouts in the wrong place	A Point on every device, located in 3D
Red lines redrawn by drafting	A second step, another place for errors	2D and 3D DXF the same day
A return trip for what was missed	Shop drawings wait	One drawing of the whole floor, checked on site

COMMERCIAL MILLWORK

Field verify, start to finish

The same nine steps on every floor.



Before you go

- [ ] GC confirmed: access, hours, which areas are ready
- [ ] Architectural and millwork drawings, as DXF if you can
- [ ] Grid lines or control points, if the building has them
- [ ] PPE per the site rules; a lift booked if needed

Walk the floor

- Which rooms are ready: drywall done, ceilings in or framed.
- Where the iCS50 stands in each area, and where V-Targets link them.
- Targets on columns and fixed walls, never on things other trades will move.

Plan the site visit

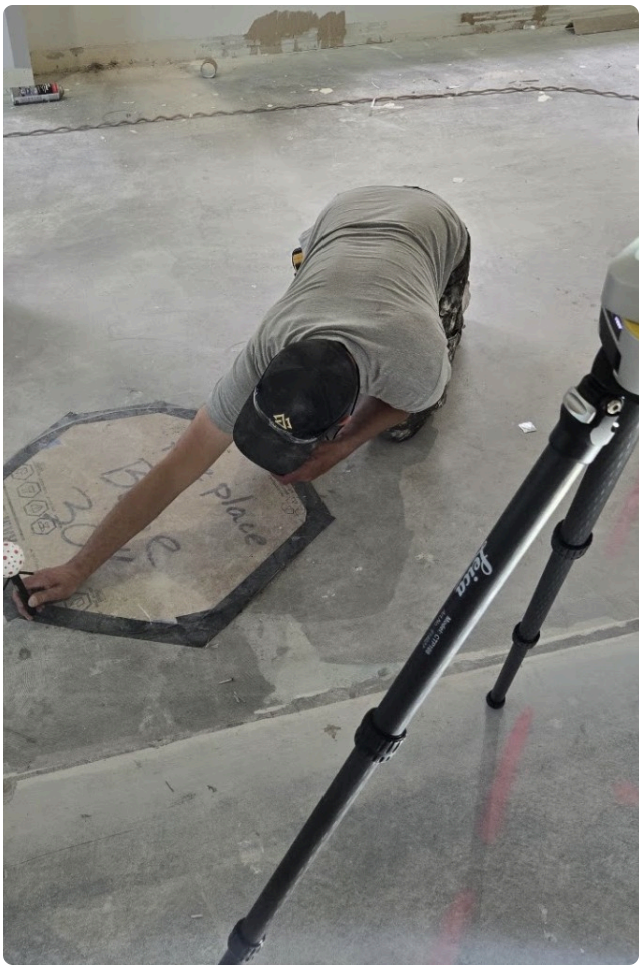
On a commercial job, the hour before you measure decides how the day goes.

Before you go

- [ ] Confirm with the GC: access, hours, and which areas are ready
- [ ] Get the architectural drawings and the millwork shop drawings, as DXF if you can
- [ ] Ask for the building grid lines and any control points
- [ ] PPE: hard hat, vest, glasses and boots, per the site rules
- [ ] Book a lift if the soffits or ceilings are out of reach
- [ ] Devices charged, spare V-Targets, adhesive stickers, painter's tape

On a big floor

- Plan where the iCS50 will stand in each area and where V-Targets go to link them.
- Place targets on columns and fixed walls that won't be moved by other trades.
- For multi-day jobs, use adhesive targets and leave them up (GENERAL GUIDE: SECTION 8).
- Starting a new day? Run **Check Setup** before measuring (GENERAL GUIDE: KEEP THE ICS50 ACCURATE).



On a busy site: legs fully extended, iCS50 out of the traffic.

BUSY SITE Other trades move ladders, lifts and carts all day. Put the tripod where nobody needs to pass, and watch the level light.

Job setup

Job type: 3D, with a plane per elevation

Commercial rooms have soffits, slopes and items at many heights. Start as **3D**, then add a **2D Vertical** plane for each wall that gets millwork, and a **Horizontal** plane for counters and the floor plan.

1. New job, **3D**. Name it with the project and floor.
2. Floor plan: **Planes › New 2D plane › Horizontal**. Capture walls, columns and openings at about 6 in off the floor.
3. Each millwork wall: **New 2D plane › Vertical**, start points on that wall.
4. Name every plane by room and wall: "Lobby N", "Exam 3 E".

Tie into the building (optional)

When the job has grid lines or control points, set up on them (**Instrument Setup › Walls/Grid lines** or **Known points**) so your drawing lines up with the architect's.

This step is optional. Walls, corners and the two start points already make a complete, field verifiable template. Tie in when the PM or GC wants the drawing on the architect's grid.

Check against the design

Import the architect's DXF or DWG (**Job › Import**) to see as-built walls against the design and flag differences before shop drawings are final.



Overhead items in the millwork zone, with the VPen on a pole.

On the iCS50: starting the job

The exact taps, in order. Menu names as they appear in iCON trades.

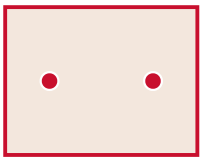
TASK	ON THE ICS50	TIP
New job	Home › **Quick Start**, or a new job from the shop's **job template**	Name it for the project and floor
Job type	**3D**	Rooms have items at many heights
Tie to the building (optional)	Setup on **Walls/Grid lines** or **Known points**	The drawing lines up with the architect's grid
Floor plan	**New plane** › **Horizontal**: two points	Walls, columns, openings about 6 in off the floor
Each elevation	**New plane** › **Vertical**: two points on the wall	Name it by room and wall: Lobby N
Drawings	Import the architectural **DXF, DWG or PDF** into the job	Scale a PDF with **Edit › Scale Drawing**
Layer	Walls, Ceiling / soffit, Openings, Electrical, Plumbing, Fire / life safety	At least one active layer
Photos as you go	Measuring settings: **Capture photo** on	Tag them by room and wall
Another area	**New Setup › V-Targets**	Green means it found its place

HORIZONTAL



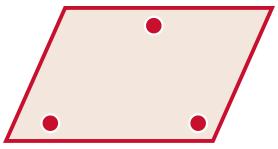
Two points.
Tops, bars, sills, hearths.

VERTICAL



Two points.
Splash walls, end panels, faces.

SLOPED



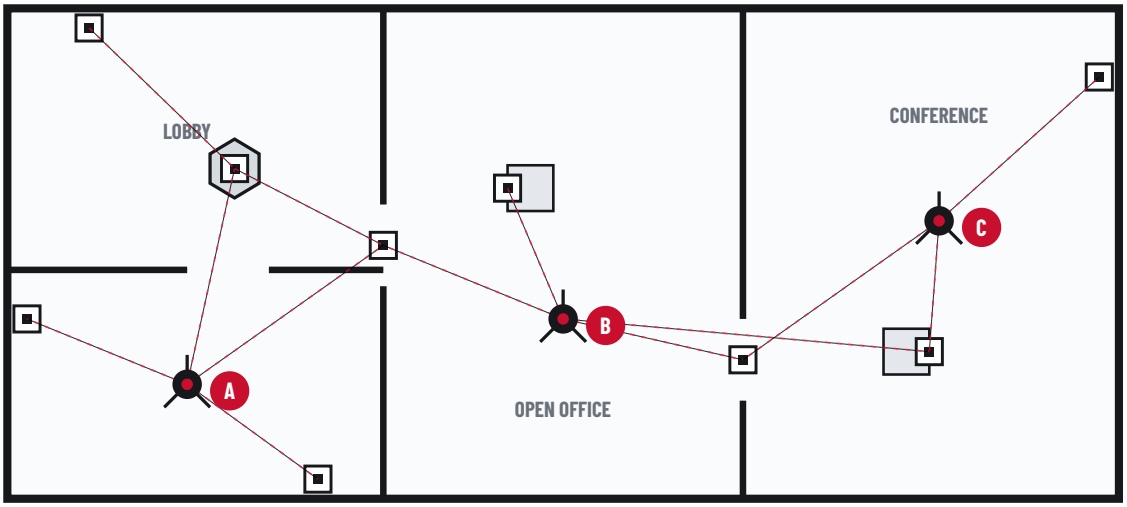
Three points.
Anything that leans.

Three kinds of plane. One per elevation; horizontal for the floor plan; sloped for anything that leans.

COMMERCIAL MILLWORK

Big floors and multi-day jobs

One drawing for the whole floor, however many setups it takes.



Three areas, one drawing. Each setup sees V-Targets the next one sees too.

1. Plan the setups and target spots on the floor plan first.
2. V-Targets on columns and fixed walls, seen from both neighbouring setups.
3. Move: **New Setup › V-Targets**. Green means it found its place.
4. Multi-day: leave the targets up, photograph where they are, and start the next day from them.

TARGETS A target on a wall another trade will move is a lost setup tomorrow. Use columns, finished or fixed walls only.



Placing a V-Target. Targets left in place let the crew pick up the same drawing tomorrow.

What to capture

Work room by room, wall by wall, in the same order every time.

Each millwork wall

- [ ] Wall length, corner to corner, both ends
- [ ] Floor line and ceiling or soffit line, a point every 2 to 3 ft
- [ ] Plumb: top and bottom points at each end
- [ ] Doors, windows and frames, with trim
- [ ] Outlets, data, switches, plumbing stubs, fire devices
- [ ] Blocking or backing, if it's marked

Ceilings and soffits

- [ ] Soffit bottom and face, with the Sky Reach pole or a lift
- [ ] Bulkheads, ductwork and sprinkler heads near tall units
- [ ] Ceiling height at each end of every run

Floor plan

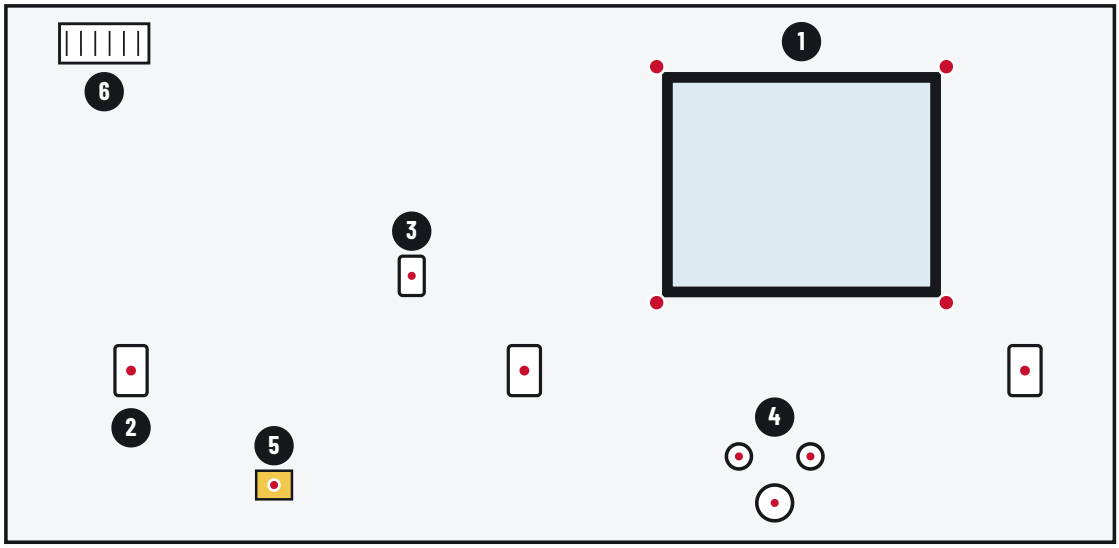
- [ ] Columns, with all faces
- [ ] Wall openings and corners
- [ ] Floor boxes and anything set in the slab
- [ ] Floor transitions and level changes



Capturing a soffit and the wall it meets.

Anatomy of a millwork elevation

What a finished elevation shows. The numbers match the list.



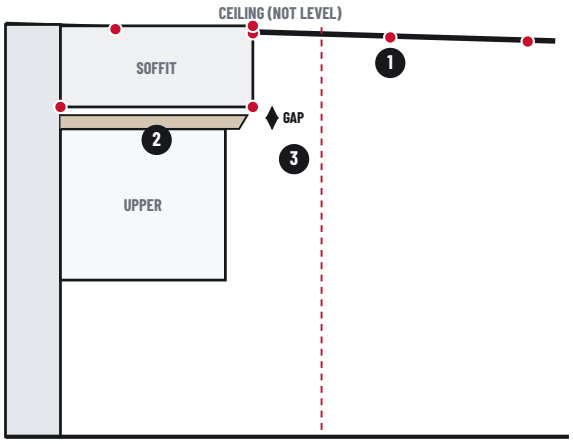
A millwork wall, from the front.

1. **Openings**
   Frames and trim: outside corners, sill and head
2. **Electrical and data**
   A Point on each device
3. **Switches and controls**
   A Point on the center
4. **Plumbing**
   Supply and drain stubs
5. **Floor boxes**
   Anything in the slab at the wall
6. **Fire and life safety**
   Strobes, pulls, sprinklers near tall units

NOTE Floor line and ceiling or soffit line along every elevation, a point every 2 to 3 ft. Plumb at both ends.

Soffits and ceilings

Tall units and crown meet ceilings that are rarely level and soffits that are rarely where drawn.



Side section. 1 ceiling line. 2 soffit bottom and face. 3 the gap the casework must fill.

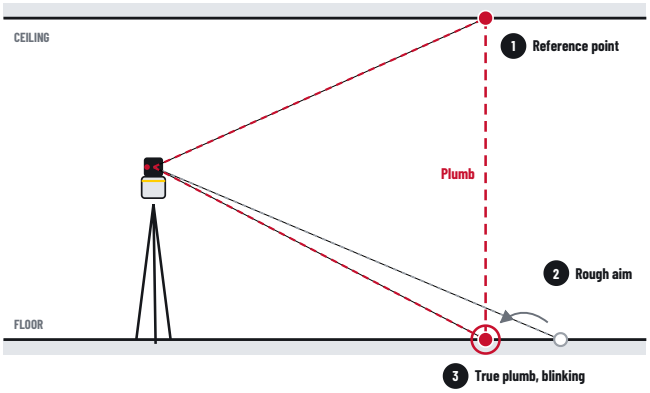
1. Ceiling or soffit line along every run, a point every 2 to 3 ft.
2. Soffit bottom and face corners, and where each soffit ends.
3. Bulkheads, ducts and sprinkler heads near tall units.
4. Overhead points with the VPen on the **Sky Reach pole** (optional accessory), or from a lift.
5. Ceiling not in yet? Note the grid height from the drawings, and verify again later.

Finding plumb with the Plumb Line

Transfer a point straight down or straight up. The iCS50 finds true plumb and marks it with the laser. Nothing is saved to the drawing.

How to do it

1. **Quick Tools**: the home screen tile, or the menu at the top left in a job.
2. **Plumb Line** from the list.
3. **Shoot the reference point** with the laser, on the ceiling or the floor.
4. **Aim roughly** where plumb should land.
5. The iCS50 corrects itself and the laser dot **blinks at true plumb**.
6. **Mark the spot.**



Side view, not to scale. 1 reference point. 2 rough aim. 3 true plumb, blinking.

On these jobs

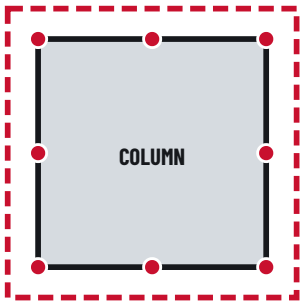
- Soffit and bulkhead edges transferred to the floor
- Casework and island lines carried up to the ceiling
- Column, post and partition locations, ceiling to floor
- A vertical reveal or panel joint that must be truly plumb

TIP A line scan up a wall shows the wall, not plumb. When a seam or edge must be truly plumb, use Plumb Line.

GENERAL GUIDE: FINDING PLUMB WITH THE PLUMB LINE

Columns and wraps

A wrap is cut to the column as built: every face, plumb, floor and ceiling.



THE WRAP

Every face, both corners.
Columns are rarely square or plumb: top and bottom too.

Floor and ceiling at the column:
the wrap is cut to both.

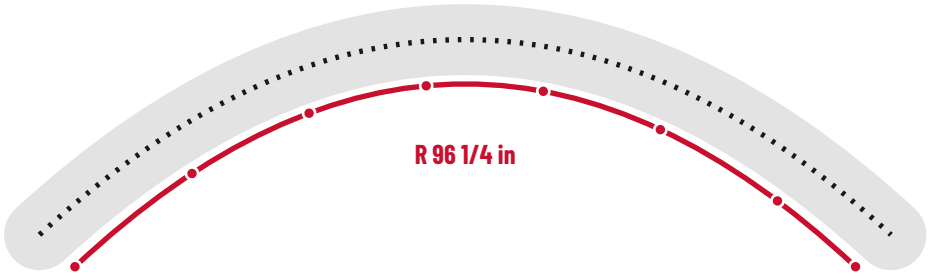
1. Points on every face, both corners, top and bottom.
2. Floor and ceiling at the column.
3. Columns with a round section: **Create › Circle**, Circle 3P, top and bottom.
4. Name each column by its grid location.

TIP With grid lines in the job, every column lines up with the architect's grid. Off-grid columns show at once.

Curved desks and walls

Traced, smoothed, and ready for CNC.

Trace the floor line of the desk,
then Smooth into true arcs

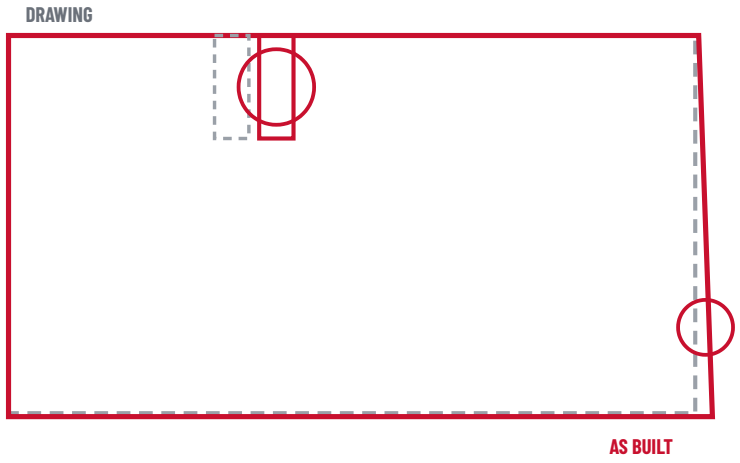


A reception desk, from above.

1. A **3D** job, unprojected for curved walls; a horizontal plane for a desk footprint.
2. Hold **Measure** and trace the floor line slowly, pen upright. Restart at each change in direction.
3. Curved walls: trace at the floor and at the ceiling.
4. **Edit › Smooth** into lines and true arcs, with the radius on the drawing.

Compare with the drawings

The architect drew one building; the GC built another. Find the difference on site.



Door frame moved
1 in to the right

Wall out of plumb,
off-plan by 3/8 in

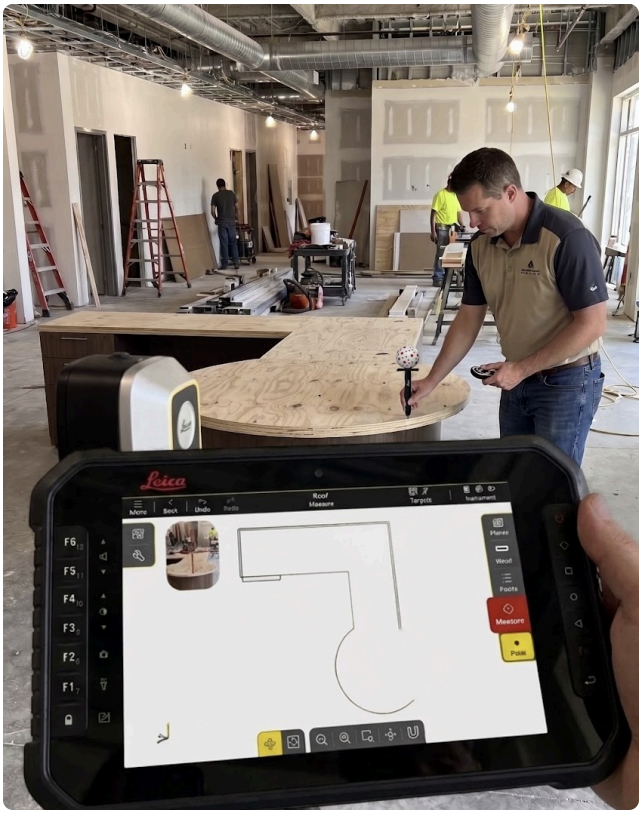
Drawing and as built, on one screen.

1. Import the architectural **DXF, DWG or PDF** (scale a PDF with Scale Drawing).
2. Set up on the grid lines so the drawing and the site line up.
3. Measure as built, as always.
4. Anything off by more than the shop allows: tag a photo **Issue** and note it on the record.

AS BUILT WINS Build to what was measured, not to the drawing. Send the differences to the PM the same day.

Best methods for big spaces

FOR	USE	WHY
Long walls	VPen Polyline, a point every 2 to 3 ft	Catches bows the casework must scribe to
Corners	VPen in the corner, or both walls plus Intersect	True corners, not assumed 90°
Soffits and ceilings	VPen on the Sky Reach pole, or a lift	Overhead points traced from the pole, not handheld
Curved desks and walls	Trace, then Edit › Smooth › Lines & Arcs	Clean arcs with radius dimensions for CNC
Far walls, high points	Any Surface: Laser	Range up to 160 ft; no need to walk there
Floor and wall flatness	High/Low Points, or a Surface Scan	Shows where shims or scribe will be needed
The next room or floor area	V-Targets, chained through doorways	Every room stays in one drawing



A curved reception desk, traced and drawn on the tablet.

Curved work

- Trace the curve slowly with the pen upright.
- Line across the straight runs between curves.
- Smooth each traced curve, then add a radius dimension.
- For curved walls with height, add points top and bottom to see if the wall leans.
- Leave final fitting to drafting: the trace shows the real, imperfect shape.

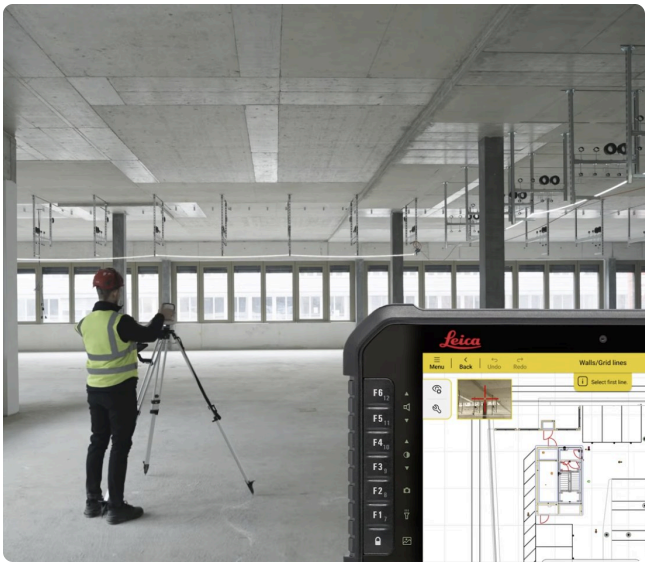
On the iCS50: capturing a floor

Which tool for which point.

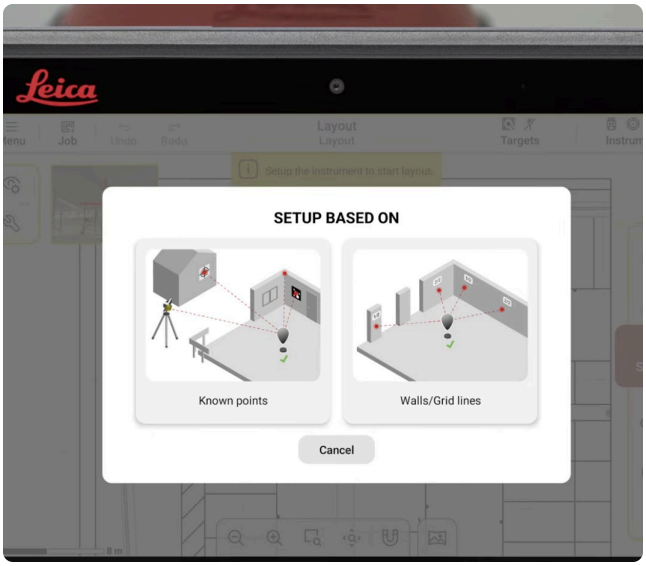
TASK	ON THE ICS50	TIP
Long walls	**Polyline**, a point every 2 to 3 ft	Catches bows
Corners	VPen in the corner, or **Edit › Intersect**	The real angle
Plumb	A **Point** top and bottom at both ends	Every millwork wall
MEP devices	**Point** on the center	On their own layers
Soffits	VPen on the Sky Reach pole, or a lift	Not handheld from the floor
Far walls, high points	**Targets › Any Surface › Laser**	About 160 ft (50 m)
Curves	Hold **Measure** to Trace; **Edit › Smooth**	Radius on the drawing
Floor and wall flatness	**Measure › High/Low Points**, or **Surface Scan**	Shims and scribe
Round columns	**Create › Circle**, Circle 3P	Top and bottom
A check dimension	**Measure › Distance**, or **Create › Linear Dimension**	Against a tape
Next area	**New Setup › V-Targets**	Same drawing

Layout from a drawing

Templating in reverse: put the approved drawing onto the site. The iCS50 turns to each point and the red laser dot shows where to mark it.



Setting up on an open floor, with the floor plan on the tablet.



Setup based on: Known points or Walls/Grid lines.

Set up on the drawing

1. New project. Import the drawing: DXF, DWG, PDF, CSV or IFC. Tap **Start › Layout**.
2. The iCS50 levels itself and captures a panorama for fast aiming.
3. **Setup › Walls/Grid lines**. Tap the first wall on the drawing; it turns yellow.
4. Measure two points far apart on that wall, anywhere along it. Tap the panorama to aim.
5. Second wall, not parallel to the first: two more points. If the software offers two positions, pick the right one.
6. For 3D, set the height: pick a 3D point on the drawing or type the reference height.

Mark the points

1. **Targets › Any Surface**.
2. Tap a point, or an object and where along it to start.
3. Tap **Layout**. The iCS50 turns and puts the red dot on the spot.
4. Mark it, then tap **Store**. Big job? Build a **To-do** list in Points first.

On a millwork job

- [ ] Casework footprints and island locations on the floor
- [ ] Blocking and backing heights on the walls
- [ ] Floor boxes and stub-ups from the drawing
- [ ] As built against the design, before shop drawings are final

ADD-ON Layout needs the **Layout licence**, an add-on that is not part of the standard iCS50 package. Ask SPEEDtemplate to add it.

Common mistakes on commercial jobs

MISTAKE	WHAT HAPPENS	FIX
Measuring before drywall with no allowance	Every dimension is off by the board	Offset the templated walls by the board thickness, or annotate the plane so drafting does
Trusting the drawings	Walls built off-plan, casework doesn't fit	Measure as built; compare with the imported DXF
Targets on things that move	Next-day setup fails	Targets on columns and fixed walls only
No plane names	Drafting can't tell rooms apart	Name every plane by room and wall
Ceiling measured at one point	Tall units hit the soffit	Ceiling line every 2 to 3 ft along the run
Tripod in a walkway	Bumped setup, flashing red	Out of traffic; New Setup with the V-Targets
Missing MEP	Cutouts in the wrong place	Capture every device in the millwork zone
Point labels left on	Drafting can't read the DXF	All three label toggles off before export

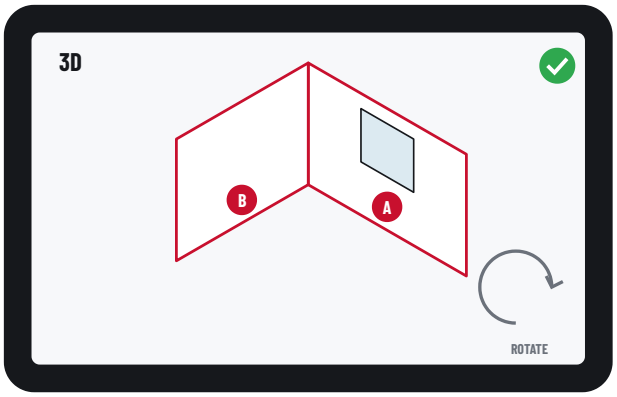
Before you leave the floor

- [ ] Every millwork wall and room captured
- [ ] Planes named by room and wall
- [ ] Targets left in place if coming back
- [ ] Field verify record filled in
- [ ] Photos taken and tagged by room

Check it before you leave

Shop drawings start from this file. A return trip costs more than ten minutes now.

1. **Look in 3D**: every room and elevation where it is on the floor.
2. **Compare** with the imported drawing: differences tagged.
3. **Tape check**: **Measure › Distance** on two or three spans.
4. Every elevation has floor, ceiling and plumb; MEP on its layers.
5. Photos tagged by room and wall.



The 3D check. Every elevation where it really is.

NOTE Fill in the field verify record with the site contact, and save a photo of it to the job.

Export for shop drawings

Which format

FORMAT	USE IT FOR
2D DXF	Every elevation flat, side by side, for shop drawings
3D DXF	The whole floor in 3D, curved work, checking how rooms relate
CNC DXF	Flat parts straight to nesting
ALPHACAM (IAZ)	Straight into ALPHACAM for CNC programming
Shop Sheet (PDF)	A dimensioned page per elevation for the PM and the shop

NOTE CNC DXF, ALPHACAM and Shop Sheet need a Templating licence.

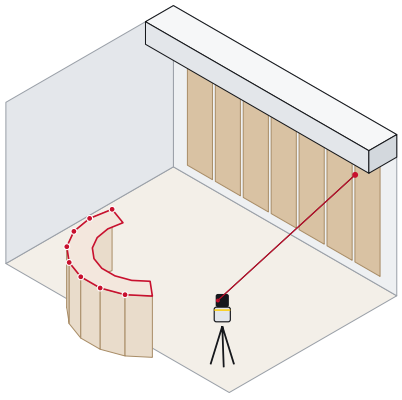
WATCH: EXPORTING

Millwork layer plan

LAYER	FOR
Walls	As-built wall lines
Floor line	Floor along each run
Ceiling / soffit	Ceiling and soffit lines
Openings	Doors, windows, frames
Columns	Columns and wraps
Electrical	Outlets, switches, data
Plumbing	Supply and drain stubs
Fire / life safety	Sprinklers, alarms, devices
Blocking	Backing locations
Notes	Room names and text

Match names and colors to the shop's CAD standard and build them into the job template (GENERAL GUIDE: SECTION 10).

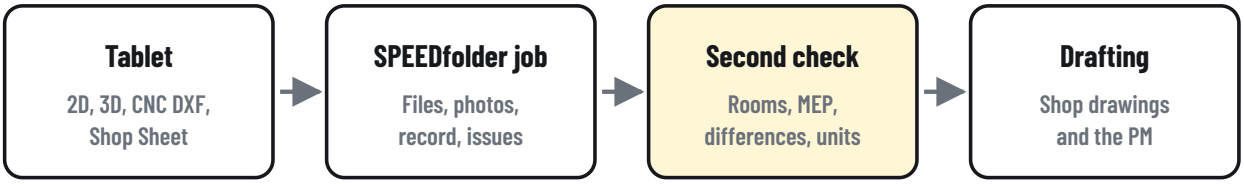
TIP Send your first few commercial exports to SPEEDtemplate support for a quick review before shop drawings go out.



On the job. A curved reception desk traced with the VPen; a far panel shot in Laser mode.

Hand-off to drafting

The field verify is done when drafting can draw without a return trip.



1. Export before you leave the site: **2D DXF** elevations and **3D DXF** of the floor.
2. Everything on the job in **SPEEDfolder**: files, photos, the record and the issues.
3. Name files the shop's way: project, floor, room.
4. Differences from the drawings to the PM the same day.

The second check

- [ ] Every millwork room has its elevations
- [ ] Floor, ceiling and plumb on every wall
- [ ] MEP on the right layers
- [ ] Units right; labels off
- [ ] Differences listed for the PM



One capture, every format drafting needs: DXF, PDF and CSV.

Field verify record

Fill this in on site. Take a photo of this page and save it to the job in SPEEDfolder.

Project _____ **GC / site contact** _____

Floor / area _____ **Date and time on site** _____

Rooms verified _____ **Drawing set / revision** _____

Grid lines used? _____ **Ceiling type and height** _____

Areas not ready _____ **Lift used?** _____

Differences from drawings _____ **Shop drawing due** _____

Notes

_____

_____

Site contact signature _____ **Verified by / date** _____

Photo shot list

- ☐ Each room, from the door
- ☐ Each millwork elevation, straight on
- ☐ Every soffit, bulkhead and ceiling change
- ☐ MEP in the millwork zone, close up
- ☐ Columns and wraps
- ☐ Floor boxes and transitions
- ☐ Anything off-plan (tag Issue)
- ☐ Delivery route: doors, elevators, halls

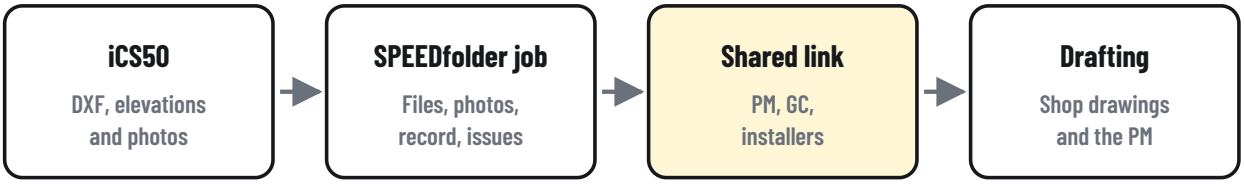
Millwork quick reference

Keep this page with the iCS50.

STEP	DO THIS
Before	GC confirmed; drawings as DXF; grid lines; PPE; lift if needed
Setup	V-Targets on columns, chained through doors; grid lines or Known points if the PM wants them
Job	3D; horizontal plane for the floor plan; a vertical plane per elevation, named by room and wall
Each elevation	Corners, floor and ceiling lines every 2 to 3 ft, plumb top and bottom
Soffits	Bottom and face corners; Sky Reach pole or a lift
MEP	A Point on every device, on its own layer
Columns	Every face, top and bottom; Circle 3P if round
Curves	Trace, then Smooth
Compare	Imported drawing vs as built; tag the differences
Export	2D and 3D DXF, CNC DXF, ALPHACAM, Shop Sheet. Labels off
Stuck?	SPEEDtemplate support: 919-676-2244, support@fifthgeartech.com

Run the job on SPEEDfolder

No job system yet? SPEEDfolder comes with the iCS50 and is already on the tablet. One place for every project, room and photo.

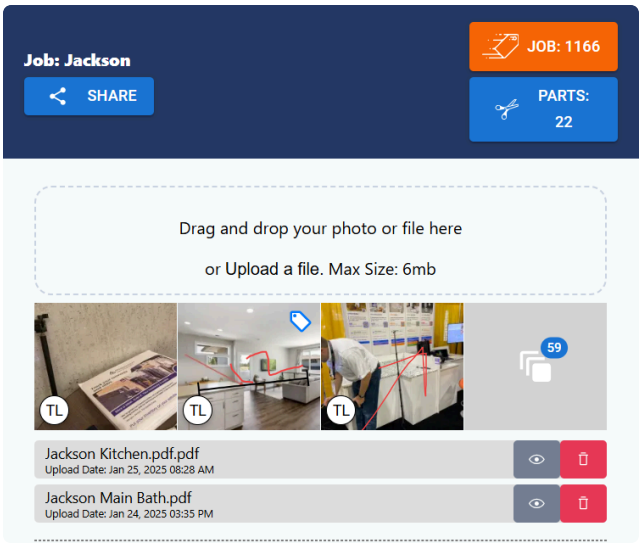


What goes on the job

- One job per project: the DXF files, the field verify record and the drawings.
- Photos tagged by room and wall, so drafting finds the elevation it needs.
- Anything off-plan tagged **Issue**, ready to send to the PM.
- The office sees each photo as it is taken.

Who sees it

- Text a job link to the PM, the GC or the install crew. It opens in any browser: no app, no account, no password.
- No charge per user. Add every field verifier and installer.



A job in SPEEDfolder: files, photos and events in one place.

NOTE SPEEDfolder runs the job, not the money. Quotes and invoices stay in the shop's own system.

TIP SPEEDfolder is included with the iCS50. Call SPEEDtemplate support to set it up: 919-676-2244.

WATCH: EXPORT TO SPEEDFOLDER

SCAN: SPEEDTEMPLATE.COM

SPEEDtemplate COMMERCIAL MILLWORK GUIDE



Need a hand on a commercial millwork job?

919-676-2244

support@fifthgeartech.com

GENERAL GUIDE
How the iCS50 works

INDUSTRY GUIDE
What to capture in the industry

INDUSTRY WORKBOOK
Learn it by doing it

Leica GEOSYSTEMS

The Leica iCON iCS50, sold, set up and supported by SPEEDtemplate.

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