

Revit to Jobsite AR Field Guide

A Practical Guide for BIM Managers, VDC Teams & Jobsite Superintendents

OnsiteBIM overlays 3D Building Information Models (BIM) onto physical jobsites at **true 1:1 life-size scale** using your mobile phone or tablet camera. It processes 100% on-device with zero cloud uploads and works completely offline in concrete basements and subterranean tunnels.

Roles & Responsibilities At a Glance

WORKFLOW OVERVIEW

BIM Manager / VDC Engineer OFFICE / REVIT Tools: Autodesk Revit (2024+) & OnsiteBIM Revit Toolkit. Place Target in Model: Snap <code>OnsiteBIM_Alignment_Target.rfa</code> to a known benchmark (e.g. Column Grid A-1). Measure Offsets: Record exact vertical height above slab and distance from column corner. 1-Click Export: Export IFC using IFC Configuration – <code>OnsiteBIM.json</code>. Handoff: Send the <code>.ifc</code> model and offset dimensions to the field team.	Field Engineer / Superintendent JOBSITE / FIELD Tools: Phone/Tablet (iOS/Android), printed paper target, tape measure, level. Print Target: Download matching target PDF from <code>onsitebim.app/generator.html</code> (100% scale). Measure & Mount: Tape paper target at matching height above slab and distance from corner. Mount Plumb & Level: Use a level so virtual model does not tilt. Inspect in AR: Open model in OnsiteBIM, point camera at target, inspect 1:1 overlay.
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Part 1: The Office Workflow

FOR THE BIM COORDINATOR

- 1

Load the Alignment Target Family into Revit
Drag and drop `OnsiteBIM_Alignment_Target.rfa` into your active Revit project (or click *Insert* → *Load Family*). This is a face-based component designed to snap flush to walls, columns, and concrete slabs.
- 2

Place Target on an Accessible Physical Benchmark
Click *Architecture* → *Component* and snap the target to a physical spot that will be accessible on site (e.g. face of a concrete column or wall at **Column Grid Line A-1**). Place it at eye level (approx. **5'-0" / 1.50 m** above Top of Concrete Slab).
- 3

Verify Target Parameters & Note Physical Dimensions
In Revit's Properties panel, verify: **Target ID** (default 12) and **Target Size** (default 150 mm). Note the exact vertical distance from the slab surface to the target bottom edge, and lateral distance from the column corner or wall edge.
- 4

Crop with 3D Section Box (Recommended for Large Models)
In your default {3D} view, enable the **Section Box** and crop the view to the specific floor or zone to be inspected. OnsiteBIM exports whatever elements are visible in this active 3D view.
- 5

1-Click Export to IFC Using the Pre-Tuned Setup
Go to *File* → *Export* → *IFC* → *Modify Setup...* Click **Import from File** (bottom-left folder icon), select *IFC Configuration – OnsiteBIM.json*, select the imported profile, and click **Export**. (*Guarantees true real-world meter scaling, origin benchmark binding, and clean property sets on the first try*).

Part 2: The Jobsite Workflow

FOR THE FIELD ENGINEER

- 1

Print the Matching Paper Alignment Target

Open <https://onsitebim.app/generator.html> on any phone, tablet, or PC (or open the Targets menu inside the OnsiteBIM mobile app). Select matching **Target ID** (12) and **Size** (150mm). Download and print on standard office paper.
*Important: Set printer scaling to **Actual Size (100%)**. Never select "Fit to Page".*
- 2

Verify Scale with Built-In Calibration Ruler Bar

Before walking to the site, lay a tape measure across the printed metric (cm) or imperial (in) ruler bar on the target sheet to confirm your printer printed at 100% scale without shrinking.
- 3

Measure Offsets & Mount Plumb & Level on the Column

Walk to the physical column. Use a tape measure to match the height above slab (e.g. 5'-0" / 1.50m) and distance from the corner. **Use a torpedo level or laser line to ensure the paper target is mounted completely plumb and level.**
- 4

Load Model in OnsiteBIM & Point Camera at Target

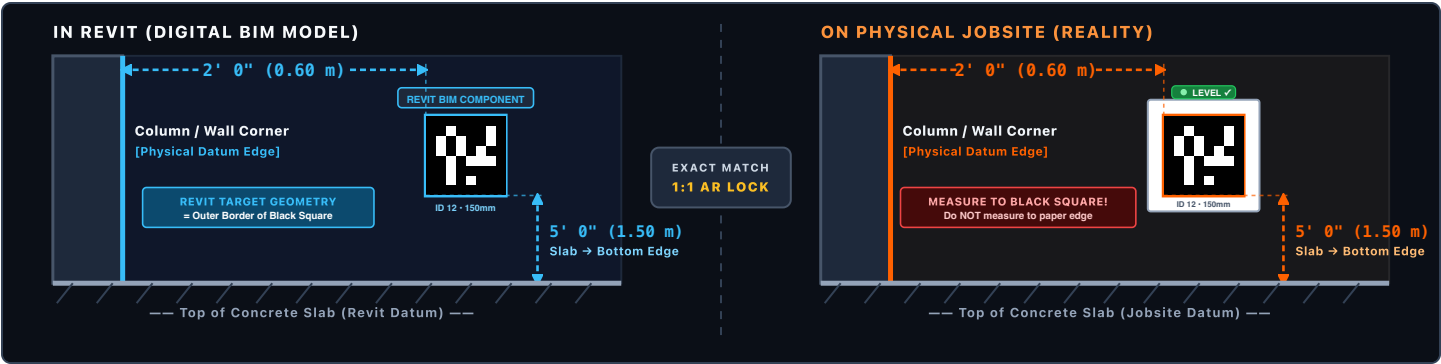
Open OnsiteBIM on iPhone, iPad, or Android. Tap **ADD** → open the .ifc file (from Apple Files, Google Drive, OneDrive, or local storage). Point your camera at the target.
The 3D model immediately locks onto the building in 1:1 real-world scale.

The Golden Rules of Precision Alignment

CRITICAL REQUIREMENTS

The Fundamental Principle: The Revit Square = The Printed Black Border

The 3D square outline in Revit represents the **exact outer border of the printed black square** on the paper target (NOT the paper edge). Measuring matching offsets from the same physical corner and slab surface ensures exact millimeter alignment on the jobsite.



RULE	WHY IT MATTERS	FIELD ACTION
1. Matching Elevation	Vertical position in BIM sets model elevation in AR.	Measure slab top to black square bottom edge (NOT paper edge).
2. Matching Horizontal	Sets horizontal alignment along building grid lines.	Measure column/wall corner to black square edge (NOT paper edge).
3. Plumb & Level	A 2° paper tilt tilts the entire virtual building by 2°.	Always use a bubble level or laser line.
4. ID & Size Parity	App uses physical size to compute exact optical scale.	Revit size must match printed size (150mm).
5. 100% Print Scale	Printer "Fit to Page" shrinks targets by 4-6%.	Check with tape on printed calibration bar.

Core Field Inspection Tools

IN-APP CAPABILITIES

- Live X-Ray Opacity Slider

Fade model transparency to see through drywall and slabs to verify concealed MEP pipes, cable trays, and ducts.
- One-Tap MEP Layer Isolation

Tap *MEP ONLY* to instantly suppress structural shells and isolate mechanical, electrical, and plumbing assemblies.
- 3D Spatial Tape Measure

Tap any physical surface and virtual BIM element for live clearance measurements with dual metric (m) and imperial (ft/in) readouts.
- 100% Offline / Basement Ready

Runs on-device via WebAssembly. Fully operational in subgrade basements, tunnels, and remote sites with zero cell/Wi-Fi signal.