

3DVRAI ARCHITECT USER HELP GUIDE

Dashboard, DWG Analysis, AI Regulations, and Button Reference

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Introduction and Control Panel (Dashboard)

The general interface structure of the system, KPI cards, and regulatory compliance analysis charts.

3DVRAI BIM Suite Control Panel

When you log in to the 3DVRAI Architect platform, the first screen that greets you is the Control Panel (Dashboard). This screen lets you monitor, in real time, the regulatory compliance of all projects uploaded to the system, the drawings at risk, the total analyzed floor area, and the total density of geometric entities in the CAD drawings.

At the top of the interface you can see the system status and the active connection type of the AI engine (Gemini Cloud or Local Llama 3).

- **Average Compliance Card:** Shows the weighted average of the regulatory success scores of all projects in the system. Projects scoring 80% or higher are considered “Compliant with Regulations.”
- **Drawings at Risk:** Represents the number of projects that failed the audit and contain a critical fire safety or accessibility regulation error.
- **Total Analyzed Area:** The total gross construction area automatically calculated from the DWG/DXF files.
- **Active Drawing Entities (Entity Count):** The total number of lines, arcs, blocks, and hatches parsed and sorted into layers by the AI.

Compliance and Distribution Charts

The interactive Recharts charts on the control panel visualize the success trend of your projects. The area chart on the left lists compliance scores according to project size, while the pie chart on the right shows the proportional distribution of architectural elements (Wall, Door, Window, Column) in the drawing. This lets you diagnose drawing density and potential structural imbalances at a glance.

DWG/DXF Upload and File Preparation

Uploading CAD drawings to the system, file formats, and the drag-and-drop analysis mechanism.

Drag-and-Drop & File Selection

The system accepts your architectural drawings directly through the browser. By switching to the “Sheet Analysis (DWG/DXF)” tab, you can transfer your drawings into the analysis room.

- **Step 1: Drag the File** — Drag the .dwg or .dxf drawing file from your computer and drop it into the area marked with a dashed line.
- **Step 2: Use the File Picker** — Alternatively, click the “Select File” button to upload a file from your local disk.
- **Step 3: Test with Ready-Made Templates** — To test the system, click the “Sunset Villa” or “Atrium Office” sample template buttons to instantly load simulated data.

Important Drawing Standards and Preparation

For the AI to work with the highest possible accuracy, it is recommended that layers in the CAD files be named correctly.

When wall lines are placed on the “WALL” or “DUVAR” layer, doors on “DOOR” or “KAPI,” windows on “WINDOW” or “PENCERE,” and load-bearing columns on “COLUMN” or “KOLON,” the system completes the geometric parsing process in milliseconds and presents clean data to the AI regulatory model.

The AI Analysis Process (What Does It Analyze?)

How the AI engine audits drawings based on geometric and regulatory rules.

How Does the AI Work?

When a drawing is uploaded to the system, the CAD parser engine running in the background parses all the vectors in the drawing. This data is then passed to the AI infrastructure you selected (Gemini or Llama 3). The AI audits the drawing under the following 4 main regulatory headings:

- **Fire Safety Regulation:** Escape corridor width (min. 120 cm), the opening direction of emergency exit doors, fire escape access distances.
- **Accessibility Standards (TS 9111):** Wheelchair ramp slopes (max. 6–8%), door thresholds (max. 2 cm), turning radii of accessible restrooms.
- **Zoning Regulation & Lighting:** Minimum daylight ratios of rooms (the ratio of window area to room area must be at least 1/10), minimum ceiling heights.
- **Static & Load-Bearing System:** Axis placement of load-bearing columns, whether they provide continuity, shear wall thicknesses.

Custom Rule Definition (Custom Rules)

Zoning regulations can vary by municipality or country. Before starting the analysis, you can add rules in natural language in the “Add Custom Regulatory Rules” field (e.g., “Ramp slopes should be a maximum of 5%, elevator lobby width should not fall below 200 cm”). The AI will also take these custom instructions into account when auditing the drawing.

Architect AI Chat (Smart Design Assistant)

A hybrid offline and online AI assistant with deep technical training in AutoCAD, Revit, Lumion, UE5, and many other design tools.

What Is the 3DVRAI Architect AI Assistant?

The Architect AI Chat module is a dedicated smart assistant developed to solve any technical challenge you may encounter in your architectural drawing and modeling processes, generate AutoCAD/Revit commands, or offer design advice.

The assistant greets you with the following protocol: “Hello! I am the 3DVRAI Architect AI Assistant. I have deep technical training in AutoCAD, Revit, Lumion, Unreal Engine 5, Maya, and 3dsMax. I can use the offline Llama 3 or the online Gemini engines, prepare project presentations, or generate visual renders with the Veo engine. How can I help you?”

- **Hybrid AI Infrastructure:** Uses the locally running Llama 3 model on your computer in offline mode, and switches to the superior Gemini API engine when you are connected to the internet.
- **Deep Technical Training:** Has advanced technical competence in AutoCAD AutoLISP scripting, Revit API integration, Lumion material library configuration, Unreal Engine 5 Blueprint architecture, Maya MEL scripts, and 3dsMax MaxScript programming languages.
- **Veo Engine & Project Presentations:** Prepares professional presentation texts for your projects and can generate photorealistic render concepts from your design by coordinating the state-of-the-art Google Veo video and image generation engine.

How Is the Architect AI Chat Used?

You can open the chat panel at any time to ask questions on your mind and automate your design processes:

- **AutoLISP & Python Code Generation:** Generates commands such as “Can you write a LISP that thickens the selected walls in AutoCAD?” flawlessly within seconds, letting you copy it with a single click.
- **Process Optimization:** Creates strategic plans that optimize workflows in your large-scale projects.
- **Offline Troubleshooting:** Helps you resolve technical problems and software crashes via the local Llama 3 model even without an internet connection.

What Does Each Button Do? (Interface Guide)

Detailed function descriptions of all buttons, control switches, and tools on the interface.

Sheet Analysis Screen Buttons

The complete list of interactive buttons within the application and their tasks are detailed below:

- **Trigger AI Analysis:** Runs after the file is uploaded. Sends the selected rule set to the AI to audit the drawing.
- **Regulation Filter Tabs:** Click “Architectural,” “Fire,” “Accessibility,” or “Static” to filter the list to only the relevant regulatory errors.
- **Severity Filter (High, Medium, Low):** Lets you narrow the list according to the severity level of the errors.
- **Download Report as PDF (Regulatory Report):** Saves the official PDF report to your computer, containing all findings for that project, rule references, and LISP repair codes.
- **Copy LISP Code:** The copy button next to a detected error copies the AutoLISP code required to automatically fix the error in AutoCAD to the clipboard.
- **Send to Script Editor:** Transfers the AutoLISP code directly to the built-in “Script Editor” tab so you can modify it.

Dynamic Button and Automation Buttons

The control elements found in the Dynamic Button Management tab are as follows:

- **Add New Button:** Lets you add your frequently used AutoLISP or Python automation macros to the system as individual buttons.
- **Trigger Command (Run):** The “Run” button beneath the relevant button sends the command to the AutoCAD/Revit bridge.
- **System Configuration Button:** This button in the header lets you specify the paths to the AutoCAD.exe or Revit.exe installed on your computer. This allows the macros to directly trigger your desktop application.

BIM, Revit, and Odoo ERP Integrations

AI-powered DWG analysis, automatic AutoCAD repair, Revit modeling, Unreal Engine 5 optimization, and two-way Odoo ERP integration.

End-to-End AI & ERP Sales Automation Cycle

The 3DVRAI platform turns architectural design processes from being merely a drawing into a smart cycle that works fully automatically, integrated with your company's sales and production processes. This smart flow reduces your workload by 70% and carries your project from design to sale:

- **Step 1 — AI-Powered DWG & BIM Check:** The 2D DWG/DXF sheets uploaded to the system are scanned by the AI according to zoning and safety regulations. Within milliseconds, the system calculates a compliance and accuracy percentage (Compliance Score) and presents it for the architect's approval.
- **Step 2 — Automatic AutoCAD Correction & Smart Repair:** If missing or faulty areas are detected in the drawing (e.g., fire escape routes, accessibility standard mismatches), local AutoCAD is triggered automatically in the background. The drawing is repaired within seconds using LISP codes prepared according to the relevant regulations, and presented for the architect's approval.
- **Step 3 — One-Click 3D BIM Modeling with Revit:** The 2D CAD plan approved by the architect is converted directly into 3D smart BIM objects via the AI parser engine, without any manual drawing workload, and automatically modeled in Revit.
- **Step 4 — Unreal Engine 5 Integration & Hardware Optimization:** The modeled 3D structure is automatically loaded into the Unreal Engine 5 project library. The AI analyzes the architect's computer hardware specifications (GPU, RAM, CPU) in real time and automatically optimizes Lumen quality, lighting, color, reflection, and global illumination parameters according to hardware performance.
- **Step 5 — Automatic Render, Video, and 360° VR Panorama Generation:** From the optimized UE5 scene, ultra-high-resolution promotional videos, 3D renders, and interactive 360° VR panoramas are automatically rendered and exported within seconds, with a single approval from the architect.
- **Step 6 — Live Web Publishing via Odoo ERP Integration:** All generated VR panoramas and BIM structure metrics (floor areas, material lists, room counts) are automatically transferred to your corporate Odoo ERP system. They go live instantly through portals and customer websites.

Two-Way Real-Time Data Synchronization (Real-time Dual-Sync)

The most critical point of the integration is the two-way live data flow between your corporate Odoo database and the Unreal Engine ArchVision panoramas. This turns your project into an active sales office tool:

- **Instant Flow from Odoo to Panorama:** Sales, reservations, contract tracking, invoicing, and title deed status updates made in your corporate Odoo ERP database are instantly transferred to the Unreal Engine 360° VR panorama.
- **Real-Time Status Indicator:** Units and rooms sold or reserved in Odoo are automatically updated with real-time color codes (e.g., Sold – Red, Reserved – Yellow, Available/For Sale – Green) as they are shown to the customer on the VR panorama, displayed interactively.

- **Integrated Financial and Legal Tracking:** Depending on user authorization levels, invoices are issued through Odoo, contract terms are tracked, and process security is ensured in integration with bank, POS, and title deed registration modules.
- **PLM & Engineering Bill of Materials (BOM) Synchronization:** Every change in the scene designs (flooring quantities used, furniture, etc.) is transferred to Odoo's mrp.bom model, generating instant cost analyses and Engineering Change Orders (ECO).

Advanced Login Security & Odoo Authentication Infrastructure

3DVRAI integrates directly with the top-tier enterprise security mechanisms offered by the Odoo ERP system. This completely prevents unauthorized access to the system and critical information leaks:

- **Odoo Multi-Factor Authentication (MFA) & Biometric Face Recognition:** The biometric face recognition (Face Recognition ID) and two-step verification (MFA) protocols defined in your Odoo ERP system also remain active in 3DVRAI connections. User facial verification or an MFA code is required before an important BIM approval or data transfer.
- **Google & Facebook Corporate OAuth Logins:** Google OAuth and Facebook Login API infrastructures are supported for secure access to the system with corporate accounts. A secure session can be opened with a single click using the company email.
- **Role-Based Access Control:** Authorization levels are automatically sorted according to the user's title in Odoo (Architect, Sales Representative, Site Manager, etc.). Each role can only access data within its own authorization area.

Odoo Step-by-Step Operating Guide (For Complete Beginners)

Step-by-step management of unit duplication, 3D VR panorama links, and automatic contract, invoice, and title deed processes in Odoo, from scratch.

1. Where Is the Architect AI Menu in the Odoo Panel?

The screens may look complex the first time you log in to the Odoo ERP system, but don't worry! Our system organizes everything for you in the simplest way possible.

Look at the horizontal menu bar (Header) at the top of the Odoo home screen. You will see the “Architect AI” menu there. When you click this menu, you can access the following sub-pages on the left under the heading “3DVRAI Virtual Sales Office”:

- **Projects & Facilities:** The general cards of your construction projects (e.g., Sunset Residence, Blue Panorama Houses) or hotel complexes are found here.
- **Units / Rooms (Portfolio):** Every independent residence, commercial shop, or hotel suite whose sale or rental management you will handle is listed here. You will conduct your daily work through this page.
- **Hotel & Villa Reservations:** A page used only for hotel rooms or vacation villas, tracking guest check-in/check-out dates and accommodation fees.

2. How Do I Add a 360° VR Virtual Tour / Panorama?

Offering your customers an interactive virtual tour experience through Odoo, and instantly reflecting status changes onto the virtual tour, is extremely easy:

- **Step 1: Open the Unit Card** — Go to the “Units / Rooms” page and open the form screen by selecting the unit you want to work on (e.g., “Unit 102”) from the list.
- **Step 2: Enter the Panorama URL** — Paste your interactive virtual tour link, obtained from 3dvrai.com, into the “ArchVision 360° Panorama URL” field under the “Financial & Integration” group on the right side of the form.
- **Step 3: Save Your Changes** — Click the “Save” button (the cloud icon or Save button) at the top left. The unit and your virtual tour are now fully linked!

3. How Do Live Virtual Tour Colors Change?

When you update the status of units in Odoo, the unit colors (hotspots) in the 360° interactive tours your customers are browsing change instantly and automatically:

- **Green (For Sale / Available):** When you set the unit's status (State) to “For Sale / Available,” the green color lights up on the virtual tour. The customer understands that the unit is available.
- **Yellow (Reserved):** When you take a deposit on a unit and set its status to “Reserved / Optioned,” the yellow color lights up on the virtual tour and it is closed off to other customers.

- **Dark Blue (In Contract):** Activated when paperwork begins and the status is set to "In Contract."
- **Red (Sold / Occupied):** When the sale is fully completed and the status is set to "Sold / Occupied," the red color lights up on the virtual tour. The property is announced as sold.

4. How to Duplicate a Unit with a Single Click

A construction project or hotel typically contains dozens of identical rooms or units. Filling in area, room count, architectural style, and material information from scratch for each one is a huge waste of time. Instead, use the built-in Duplication feature:

- **Step 1: Open the Sample Unit** — From the “Units / Rooms” menu, open a sample unit (e.g., “Unit 101”) whose information has been fully filled in and panorama link added.
- **Step 2: Follow the Action → Duplicate Path** — Click the “Action” gear icon/button in Odoo's top control bar and select “Duplicate” from the menu that opens.
- **Step 3: Just Change the Name and Save** — The system opens a new draft, copying all fields and 3D panorama settings exactly. It automatically appends “(Copy)” to the name. You only need to change the name to “Unit 102” and save it with the status set to For Sale (Available).

5. How Do Automatic Contracts, Invoices, and Title Deeds Work?

Our system runs all legal and accounting processes fully automatically in the background, free from human error, when you update unit statuses:

- **Contract Creation (Status: In Contract):** The moment you select a unit's status as “In Contract,” Odoo automatically opens a draft contract in the background in the “Sales / Lease Contracts” module. The customer's name, the unit's price, and registration information are instantly entered into this contract.
- **Invoicing (Status: Sold):** When you set a unit's status to “Sold,” the system calculates the 20% VAT rate applicable under real estate law and automatically adds a draft invoice to the “Sales Invoices” page. Your accounting staff can approve it with a single click to turn it into an official e-invoice.
- **Title Deed Archive Creation (Status: Sold):** Once the sale is finalized, a legal title deed registration record is automatically created on the “Title Deed Records / Archive” page, where you can store block, parcel, land share, volume, and page information.

6. Initial Setup and Odoo Update Tips (FAQ)

There is one very critical point to be careful about when installing or updating the module in the system:

If you are uploading the module as a ZIP through the Odoo web interface and get an error such as “the contract_ids field does not exist,” the reason is that the Odoo server is caching the old Python code in memory. To overcome this problem within seconds, follow the steps below:

- **Step 1 — Method A: Restart the Server** — If it is your own server, restart the Odoo service or Docker container (e.g., `sudo service odoo restart`) and re-upload the module.
- **Step 2 — Method B: Easy 2-Step Upload** — If you cannot access the server (i.e., you are using Odoo.sh / SaaS), temporarily delete the “sales_documents_tab” field from the XML file and upload the module. After Odoo recognizes the Python code and creates the database, re-upload the zip file containing the original, full XML file. This will install successfully 100% of the time without errors.

Security, KVKK/ISO Compliance, and Automatic Repair

The platform's 100% offline operating architecture, KVKK and ISO standards compliance, intellectual property security, and AI-supported self-healing capability.

Offline-First Architecture & KVKK and ISO Standards

The 3DVRAI BIM Suite is designed with a fully offline-first architecture to protect the confidentiality of your corporate data and designs at the highest level. This ensures that all your processes are carried out in full compliance with international standards:

- **Localhost Operation Assurance:** The AI analysis engine and data processing operations run by default on your local computer (localhost:3000). Your drawings, projects, or sensitive BIM data are never sent to external servers.
- **KVKK and Data Sovereignty:** Fully compliant with the Turkish Republic's Personal Data Protection Law (KVKK) and the EU GDPR regulations. There is zero risk of data leakage because all data storage takes place locally on "database.json."
- **ISO 27001 & ISO 9001 Compliance:** Process audits designed in accordance with the Information Security Management System (ISO 27001) and Quality Management System (ISO 9001) standards guarantee the security and quality of your projects.
- **Full Control and Authorization for the Architect:** Cloud backup or synchronization operations occur only with the architect's own consent and a single-click trigger. The architect can configure the cloud server (Firebase/Firestore) settings from the panel however they wish, within seconds.

Intellectual Property (IP) Protection and Code Security

The proprietary automation commands, customized LISP scripts, and AI analysis templates developed within 3DVRAI are under high-security protection:

- **Copyright and License Protection:** Copying, reverse-engineering, or modifying the source code without 3DVRAI company permission and an official license key is strictly prohibited and is blocked by cryptographic license controls.
- **Encrypted Admin Panel:** The Odoo integration infrastructure files and module download authorization are protected in the encrypted "Management Module (Source Code)" area, completely closed off to access by unauthorized third parties.

Offline Smart Error Detection & Offline Self-Healing

Even though the system operates in a completely offline environment, it has an advanced AI-powered repair engine capable of eliminating script and code errors that may occur in AutoCAD, Revit, or the web interface within seconds:

- **Fast Problem Diagnosis:** When an error occurs in offline LISP or Python automation commands, the system triggers the local error analysis algorithm running in the background.

- **Automatic Code Repair:** Detected syntax or reference errors are automatically repaired and optimized within seconds using the error-resolution matrices in the system's local library.
- **Uninterrupted Workflow:** Thanks to this advanced self-healing technology, the designer's work is never interrupted, the need to wait for technical support is eliminated, and loss of productivity is prevented 100%.