propvr

PRODUCT WHITEPAPER

PROPVR SPATIAL OS

Spatial Map

3D Projection Mapping on Architectural Scale Models

Hardware + Software + Content + Installation — one partner, one solution. Brings physical models to life with light.

PROJECTION MAPPING | 3D-PRINTED MODELS | MOBILE APP CONTROL | CRM INTEGRATION

info@propvr.ai

WWW.PROPVR.AI

01 WHITEPAPER

Contents

01 EXECUTIVE SUMMARY 03
02 THE PROBLEM · BEAUTIFUL MODELS, FROZEN IN TIME 04
03 THE SOLUTION · SPATIAL MAP 05
04 HOW SPATIAL MAP WORKS 06
05 THE CINEMATIC EXPERIENCE — 4 ACTS 07
06 FEATURES & CAPABILITIES 08
07 TECHNICAL ARCHITECTURE 09
08 USE CASES & DEPLOYMENT 10
09 ROI & BUSINESS IMPACT 11
10 SPATIAL OS ECOSYSTEM 12
11 IMPLEMENTATION PROCESS 13
12 CONTACT 14

01 EXECUTIVE SUMMARY

Bringing the scale model to life with light

Projection mapping is transforming how physical spaces communicate stories. Within real estate — where the ability to sell a vision matters as much as the vision itself — projection mapping on architectural scale models is one of the most compelling and underutilised sales technologies available today.

Every major developer understands the power of a beautifully crafted scale model. But those models are static. They cannot show daylight progression across a façade, the phased delivery of a masterplan, the finish options of individual units, or the real-time availability of every apartment.

Spatial Map changes this fundamentally. It transforms a standard 3D-printed white scale model into a dynamic, interactive, data-connected storytelling surface. Using precision-calibrated projectors, purpose-built mapping software, Unreal Engine real-time content, and a mobile control application, Spatial Map projects light, colour, data, and narrative directly onto the physical model — turning static plaster into a living, breathing representation of the project.

Not a projector. Not a content reel. A complete product — hardware, software, content, installation, CRM integration, and ongoing support — delivered by one partner.

> ***"The model was always the centrepiece. Spatial Map makes it the most powerful sales tool in the gallery — a physical object that displays real-time data, tells a cinematic story, and responds to every question the buyer asks."***
>
> THE SPATIAL MAP THESIS

02 THE PROBLEM

Beautiful models, frozen in time

A high-quality 3D-printed white model costs ₹5–25 lakh and anchors every developer's gallery. Yet for all their cost and impact, these models share a fundamental limitation — they are static. The moment they are built, they are frozen.

NO STORY

No dynamic storytelling

A scale model looks the same at 9 AM as at 6 PM, the same on launch day as six months later. The agent must verbally point at clusters of identical white buildings. Every presentation depends entirely on the agent's skill, and quality varies from visit to visit.

NO DATA

No real-time data

The most critical question is "What's available?" The model cannot answer. Agents must switch to a CRM screen, cross-reference tower names, and verbally relay the information — a friction point in every sales interaction.

NO PHASING

No phasing visibility

Masterplans deliver in phases over years. The model shows the project at completion but cannot communicate which phases are under construction, sold out, or launching next — the most commercially important information.

IDENTICAL

No differentiation

Every developer's gallery has a white scale model. The format is identical across every competitor. In markets like Dubai, Riyadh, and Bangalore, the inability to differentiate the gallery experience is a missed opportunity.

STALE

No content updates

When the project evolves — a new phase, a building redesign, an added amenity — the physical model cannot be updated without an entirely new build. Most models become partially outdated within the first year.

RESULT

Underutilised investment

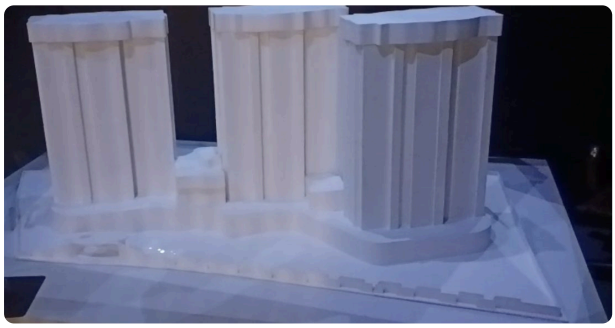
Developers spend lakhs on a beautiful centrepiece that cannot tell a story, display data, differentiate from competition, or stay current. The model is visually impressive but functionally inert — the physical craftsmanship lacks the technology layer to bring it to life.

03 THE SOLUTION

Projection mapping that brings the model to life

A complete 3D projection mapping product designed specifically for architectural scale models in real estate sales environments. Takes the developer's existing centrepiece — the white scale model — and transforms it by projecting precisely calibrated light, colour, information, and narrative directly onto the physical surface.

Unlike generic projection mapping for building façades, event spectacles, or artistic installations, Spatial Map is engineered from the ground up for the real estate sales process. Every component is purpose-built for the gallery environment and property marketing.



BEFORE · PLAIN WHITE SCALE MODEL

AFTER · SAME MODEL, BROUGHT TO LIFE BY SPATIAL MAP

WHAT PROPVR DELIVERS THAT NO ONE ELSE CAN

LAYER	TRADITIONAL APPROACH	PROPVR SPATIAL MAP
Scale model	Static white model	**Same model becomes dynamic projection surface**
Projection hardware	Sourced separately	**Specified, supplied, installed, calibrated**
Mapping software	Generic media server	**Proprietary calibration & mapping engine**
Content creation	Hire a separate agency	**Unreal Engine content by PROPVR creative team**
Interactive control	Passive playback	**Mobile tablet app for live control**
CRM integration	Not available	**Real-time availability from developer CRM**
Content updates	New model or outdated display	**Remote content update — no physical changes**
Support	Multiple vendors	**One partner, one contract, full solution**

04 HOW IT WORKS

The right light, on the right surface, at the right moment

Project the right light, at the right angle, onto the right surface, at the right moment. The result is a physical object that appears to transform before the viewer's eyes — far more emotionally engaging than anything on a flat screen.

LIVE INSTALL — OVERHEAD-MOUNTED PROJECTORS ILLUMINATING A CITY MASTERPLAN MODEL

FOUNDATION

3D-printed white scale model

White surfaces reflect projected light with maximum fidelity, absorbing no colour information and allowing the projector to paint any colour, texture, or data with perfect accuracy. The model is the canvas. PROPVR works with the developer's fabricator or provides guidance for new builds.

HARDWARE

Precision-mounted projectors

PROPVR specifies, supplies, and installs projection hardware based on model size, geometry, and gallery environment. Single short-throw projector for towers; multi-projector edge-blended arrays for large masterplans. High lumen output for ambient light, 4K resolution for small architectural details.

CALIBRATION

Mapping pixels to physical geometry

A projector-camera (ProCam) system captures structured light patterns, computes the math between pixels and model coordinates, and generates a warp map. The result: light appears **painted onto** the model, not projected onto it. No overspill, no misalignment.

CONTENT

Unreal Engine real-time 3D

Not a pre-rendered video — real-time 3D content built in Unreal Engine, calibrated to the model's exact geometry, responsive to live input. This is what enables interactivity: highlight a tower and that tower renders in a different state instantaneously.

MOBILE CONTROL APP — THE PRESENTER'S COMMAND CENTRE

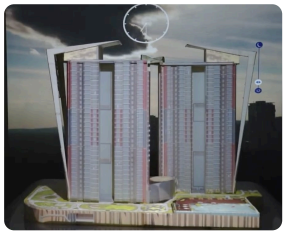
Running on a tablet, the app gives the sales agent complete real-time control: structured presentation flow, live CRM availability, interactive highlights, day/night toggle, content switching, and lead capture. **The tablet is the wand. The model is the stage.**

05 EXPERIENCE

How a Spatial Map presentation unfolds — 4 acts

The way a presentation unfolds is designed as an emotional journey for the buyer — from wonder, to understanding, to decision.

01 · THE REVEAL



02 · THE STORY

03 · THE CONVERSATION

04 · THE CLOSE

01 ACT 1 The reveal — cinematic intro

Gallery lights dim. A white model sits before the audience. The projector activates — a single point of light spreads across the surface, tracing roads, terrain, parks, water. Buildings rise from the surface as projected light gives each structure colour and dimension. The developer's logo appears on the base. In sixty seconds, a blank white model becomes a vivid 3D representation of the entire development. **The audience is captivated before a word has been spoken.**

02 ACT 2 The story — guided presentation

The agent takes the tablet. The presentation follows a structured narrative: project vision, masterplan layout, phases, key amenities, residential and commercial districts. As the agent speaks, the projection responds. Describe the central park and the park illuminates. Move to Phase 2 and that phase brightens while the rest softens. **The model becomes a visual aid in perfect sync with the narrative.**

03 ACT 3 The conversation — interactive exploration

The buyer asks questions. "Which towers face the park?" The agent taps the tablet; those towers illuminate. "What's available in Building C?" CRM data populates onto the model — green for available, amber for reserved, red for sold. "Show the two-bedroom units." The projection filters to display only the relevant floor plans. **Every question the buyer asks, the model answers visually.**

04 ACT 4 The close — branded outro

The presentation concludes with a branded sequence. The model returns to its full illuminated state, displaying the complete project at its most impressive — night mode with every unit glowing, amenities highlighted, developer brand prominently displayed. The buyer leaves with an experience no competitor's brochure, website, or passive display can replicate.

06 CAPABILITIES

Key features & capabilities

CALIBRATION

Precision 3D calibration

Sub-millimetre alignment between projected content and physical geometry. Structured-light patterns and ProCam systems generate accurate warp maps that conform to the model's exact topology — every roofline, every edge.

CRM

Real-time CRM integration

Connects to the developer's CRM to display live availability, pricing tiers, and reservation status directly on the model. When a unit sells, its projection updates automatically — no manual intervention, no stale data.

EDGE-BLEND

Multi-projector edge blending

For large masterplan models, multiple projectors deploy and edge-blend into a single unified image. No visible seams, brightness inconsistencies, or colour shifts between projector zones.

DAY/NIGHT

Day-to-night transition

A single tap transitions the model from daylight to night-time with individually illuminated unit windows, street lighting, and ambient landscape glow — one of the most visually impactful moments in any presentation.

PHASING

Phasing & timeline animation

For multi-phase developments, animate the construction timeline directly on the model — Phase 1 completed, Phase 2 under construction, Phase 3 in design. Each phase illuminates in sequence.

REMOTE UPDATES

Remote content updates

New renders, pricing changes, redesigned amenities, additional phases — content pushed remotely via the Spatial OS cloud. No physical model modification. No site visit. Always current.

ANALYTICS

Analytics & session tracking

Every session logged — duration, sections visited, towers highlighted, units enquired about, interaction patterns. Gallery performance and buyer interest visible for the first time.

ECOSYSTEM

Spatial OS integration

Same Unreal content, data integrations, and brand assets that power the model projection also power Spatial Cave, Touch, Tour, Holo, and every other Spatial product. Invest once, deploy across every touchpoint.

07 ARCHITECTURE

Technical architecture — system components

COMPONENT	SPECIFICATION
Projection hardware	High-lumen short-throw or ultra-short-throw laser projectors (5,000–15,000 lumens). DLP or 3LCD. Native 4K resolution per projector.
Mounting system	Ceiling-mounted overhead gantry or custom bracket. Vibration-isolated for sharp projection. Adjustable for calibration refinement.
Mapping engine	PROPVR proprietary calibration and warp engine. Structured light capture, ProCam alignment, real-time warp correction. Multi-projector with automatic edge blending.
Content engine	Unreal Engine 5 real-time rendering. GPU-accelerated. Real-time lighting, material changes, data overlays, and interactive content switching.
Control application	Spatial Map Mobile App (iOS/Android tablet). Wi-Fi to local content server. Presentation mode, CRM view, interactive controls, lead capture.
Data integration	REST API to developer CRM (Salesforce, HubSpot, Yardi, custom). Real-time unit availability, pricing, status sync. Secure HTTPS.
Content server	On-site rendering workstation with high-performance GPU. Receives control inputs, renders content in real time, outputs to projector(s).
Cloud services	Spatial OS cloud for remote content updates, analytics dashboard, session logging, system health monitoring.

DATA FLOW

A closed loop: mobile app sends control commands → content server renders → output to projector. Simultaneously, the content server queries CRM for current availability, overlays it on the render, and projects. Session data flows back to Spatial OS cloud for analytics. Updates pull from cloud automatically.

08 USE CASES

Where Spatial Map earns its keep

GALLERY

Real estate sales gallery

The primary deployment. White scale model in the feature position, projectors mounted overhead. Every buyer visit includes the cinematic reveal, guided narrative, interactive CRM exploration, and branded close. Replaces multiple adjacent screens and printed availability sheets.

LAUNCH

Project launch events

For investor reveals, VIP previews, and public launches — a dramatic centrepiece. The cinematic reveal in sync with music and lighting design creates a shared emotional moment that generates social media, press coverage, and word-of-mouth marketing.

BOARDROOM

Boardroom presentations

A compact, high-impact tool for masterplan reviews, project updates, and investment pitches. Interactive capabilities let the presenter respond to questions in real time — showing updated phasing, revised unit mixes, or new design iterations on the model.

EXHIBITIONS

Exhibitions & expos

At Cityscape, MIPIM, and Arabian Property Show, Spatial Map differentiates the stand from every competitor. Dynamic mapping draws foot traffic, interactive engagement extends visits, and lead capture records every meaningful interaction.

GIGA

Smart city & government showcases

For giga projects and smart cities in Saudi Arabia and UAE, a masterplan tool that communicates scale, phasing, and vision to government delegations, sovereign-wealth fund representatives, and international partners.

HOSPITALITY

Hospitality & resort pre-sales

Resort and hospitality developers present villa plots, hotel configurations, and amenity layouts — showing seasonal landscaping changes, occupancy scenarios, and branded visual identity for each hospitality brand in a mixed-use development.

09 ROI

ROI & business impact

Measured improvement across the four metrics that matter most to developers: gallery engagement, sales velocity, operational efficiency, and brand differentiation.

METRIC	WITHOUT SPATIAL MAP	WITH SPATIAL MAP
Gallery visit duration	8–12 minutes	**20–35 minutes (2–3×)**
Visitor engagement depth	Surface-level, verbal	**Deep, interactive with data**
Sales conversion rate	Baseline	**15–30% improvement** (early adopters)
Content update turnaround	2–4 weeks (agency re-engagement)	**Same-day remote update**
Availability accuracy	Stale; manual printouts or separate screens	**Real-time CRM sync; always current**
Launch event impact	Standard presentation	**Cinematic reveal; high social & press interest**
Brand differentiation	Similar to competitors	**Unique centrepiece; distinct visitor memory**
Agent dependency	High; quality varies by skill	**Structured; consistent story regardless of agent**
Analytics visibility	None	**Full session tracking; engagement heatmaps**

"For a typical residential tower with 200+ units and an average price of ₹1 Cr, even a 5% conversion-rate improvement translates to crores in incremental revenue — many multiples of the Spatial Map investment."

10 ECOSYSTEM

Part of the Spatial OS ecosystem

One of nine products within the PROPVR Spatial OS platform. The entire ecosystem shares a common content pipeline, data integration, and management platform — meaning content created for Spatial Map automatically creates assets deployable across every other Spatial OS product.

PRODUCT	DESCRIPTION	KEY FEATURE
Spatial Map	3D projection mapping on scale models	Cinematic reveal + CRM integration
Spatial Cave	Immersive LED/projection room	180°–360° immersive environment
Spatial Holo	Holographic display	3D hologram without headsets
Spatial Touch	Interactive touchscreen	Multi-touch exploration
Spatial Tour	Guided VR experience	Multi-headset sync from tablet
Spatial Lens	Augmented reality overlay	AR on printed and physical media
Spatial Table	Interactive table surface	Collaborative planning and exploration
Spatial Drive	Motion simulation experience	Driving and flythrough simulation
Spatial Agent	AI-powered virtual agent	Conversational AI for property queries

"Spatial Map is the gallery centrepiece, Spatial Cave the immersive walk-in room, Spatial Touch the self-service exploration, Spatial Tour the VR walkthrough, Spatial Agent the AI assistant — all powered by the same content, data, and brand assets. One investment, nine deployment channels."

11 IMPLEMENTATION

From discovery to go-live in 8–9 weeks

A structured, phased process with clearly defined milestones and deliverables at each stage.

01 WEEKS 1 – 2 Discovery & assessment

Site survey of gallery environment. Existing scale model assessment (or new fabrication guidance). Ambient light analysis and projection hardware spec. CRM integration requirements. Content brief defining cinematic flow, data layers, and interactive features.

02 WEEKS 3 – 6 Hardware & content production

Projector and mounting procurement and configuration. 3D scanning or CAD import of model geometry. Unreal Engine content creation (intro, guided sections, interactive layers). Mobile app configuration and CRM API integration. Internal testing.

03 WEEKS 7 – 8 Installation & calibration

On-site hardware install (projectors, mounting, cabling, content server). Precision calibration of projection onto the model. Multi-projector alignment and edge blending. Content deployment with live CRM data. Mobile app deployed to gallery tablets.

04 WEEKS 8 – 9 Training & go-live

Sales team training on the mobile control app. Presentation rehearsals and best-practice guidance. Go-live with full system handover. Post-launch monitoring and optimisation.

05 ONGOING Support & updates

Remote content updates as the project evolves. CRM monitoring and data verification. Analytics reporting and gallery performance insights. Hardware maintenance and projector lifecycle management. Expansion support for additional models or gallery locations.

propvr

CONTACT US

Bring your model to life with light.

Whether you are launching a single residential tower or presenting a multi-billion-dollar masterplan — Spatial Map transforms your gallery centrepiece into the most powerful sales tool in the room. Hardware, software, content, installation, and ongoing support — from one partner.

EMAIL
info@propvr.ai

WEBSITE
www.propvr.ai

PRESENCE
India · UAE · Saudi Arabia

This document is confidential and intended for prospective clients and partners of PROPVR. All product names, specifications, and capabilities described herein are proprietary to PROPVR. Spatial Map, Spatial OS, Spatial Cave, Spatial Holo, Spatial Touch, Spatial Tour, Spatial Lens, Spatial Table, Spatial Drive, and Spatial Agent are trademarks of PROPVR.