

MCP SERVER

NO CODE

CLOUD HOSTED

# Room Layout Planner MCP for AI Agents

Verify furniture placement and room flow for interior design projects

Room Layout Planner checks if furniture fits in a room by evaluating placement integrity, walkability, and clearance compliance. It helps you avoid common interior design mistakes like blocking windows or cramming a room so tight that people can't move around. Use it to get precise measurements on floor space and ensure every piece of furniture has enough room to breathe.

**B** Quality Score 85/100

furniture

room-layout

clearance

walkability

placement

optimization



# The connectivity layer between AI and the world's software.



Vinkius sits between AI and every application. All communication passes through Vinkius Cloud via the Model Context Protocol (MCP) — with governance, observability, and security at every layer.

# Your AI Connections Run Through Vinkius Cloud

The world's largest  
managed MCP catalog

Vinkius is the connectivity layer where AI connects to the software your business already runs. We handle the hosting, the security, the credentials, the uptime — you get agents that actually do things.

We operate the world's largest managed MCP catalog. Major SaaS platforms, CRMs, databases, and cloud providers — running, monitored, production-ready. This MCP server is hosted and maintained by the Vinkius Cloud for AI Agents.

*The agent doesn't manage credentials, doesn't manage uptime, doesn't manage security. Vinkius does.*

— Architecture principle

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## Four Pillars of the Vinkius Runtime

### 01 — Security by design

Credentials stay encrypted at rest via AES-256. The AI agent never touches raw keys — they're injected into a sandboxed V8 isolate at runtime. Actions are logged, and connections have an emergency kill switch.

### 03 — Deterministic observability

Eight immutable metrics per endpoint: request volume, p95 latency, error rate, active connections, cost attribution. A live payload feed logs every tool call with mutation detection.

### 02 — Built on MCP Fusion

This MCP server was built with **MCP Fusion**, the open-source framework (Apache 2.0) that powers the entire Vinkius catalog. Schema-as-firewall strips undeclared fields, compiled PII redaction runs at zero overhead, and cryptographic lockfiles produce git-diffable audit trails.

### 04 — Autonomous operations

Servers are deployed, monitored, and patched autonomously. New capabilities and security patches ship weekly. Zero-downtime deployments ensure continuous availability across all managed MCP servers.

**AES-256**

Encryption at rest

**Ed25519**

PKI vault signatures

**24h TTL**

Ephemeral session keys

**V8 Isolate**

Sandboxed execution

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## One Token. Instant Access.

Every MCP server on Vinkius is accessed through a **Connection Token**. Tokens are generated in the cloud dashboard and produce a unique MCP endpoint URL. Paste this URL into any MCP-compatible client — no SDK required.

A single token can serve **multiple AI clients simultaneously**, or you can issue separate tokens per client for granular access control. Each token tracks its own request count, last activity timestamp, and can be individually enabled or revoked.

MCP ENDPOINT

`https://edge.vinkius.com/{token}/mcp`

Claude



Cursor



VS Code



Windsurf



Grok



Gemini

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## Security Is the Architecture

Security in Vinkius is not a feature — it's the foundation of the runtime. The gateway enforces multiple independent protection layers between AI agents and third-party APIs.

### 01 — Ed25519 PKI Vault

Every workspace has an Ed25519 Master Key. Session keys are generated ephemerally (24h TTL) and signed by the Master Key. Credentials never leave the vault boundary.

### 02 — V8 Isolate Sandboxing

Tool code runs inside isolated-vm V8 isolates with 64 MB memory caps and per-request timeouts. No filesystem access, no network access except through the SSRF-guarded fetch bridge.

### 03 — SSRF Guard

All outbound HTTP requests are DNS-resolved and validated before execution. Private IP ranges (10.x, 172.16-31.x, 192.168.x, AWS metadata 169.254.x) are blocked at the network layer.

### 05 — Cryptographic Audit Trail

Every request is signed into a SHA-256 hash chain with Ed25519 signatures. Events form a tamper-proof, SIEM-exportable forensic record.

### 04 — DLP & PII Redaction

A ResponseGuard pipeline intercepts every tool response. Configurable redaction patterns strip sensitive fields (emails, SSNs, card numbers) before data reaches the AI agent.

### 06 — Honeypot Trap System

Phantom credentials are injected into isolated environments. If a honeypot is used outside Vinkius infrastructure, the server is quarantined instantly.

## Emergency Kill Switch

EU AI Act Art. 14(1)  
Compliant

The kill switch is an **emergency halt** mechanism — not a simple toggle. When triggered, it executes three actions atomically:

#### 01 — Server deactivated

The MCP server is immediately taken offline across the entire cluster.

#### 02 — All tokens revoked

Every connection token is invalidated. Total lockout — reconnection blocked until new tokens are issued.

#### 03 — WebSocket connections killed

Active connections terminated via Redis pubsub broadcast. Propagates to every runtime node in the cluster.

## Full Visibility. Zero Guesswork.

The Vinkius cloud dashboard includes a full MCP Governance suite — real-time analytics and security controls for production AI operations.

**Control Plane**

KPI dashboard with request volume, latency, success rate, token consumption, and AI-generated operational briefings.

**FinOps**

Cost tracking per tool, payload compression savings, budget optimization signals, and consumption trends.

**Firewall & DLP**

PII redaction activity, sensitive data protection counters, and security event timeline.

**Agent Activity**

Which AI clients are connecting, how often, and what they're doing — real-time session tracking.

**Tool Health**

Slowest and most error-prone tools, with actionable root-cause insights and performance baselines.

**Incident Log**

Error trends, failure rates, status-code breakdowns, and forensic audit trail access.

Get started at [cloud.vinkius.com](https://cloud.vinkius.com) — connect your AI agent in under 60 seconds.

# Room Layout Planner MCP

0 tools available

Cloud-hosted on Vinkius

When you're designing a room, the hardest part is often figuring out if things actually fit once they're moved in. You might have a great floor plan on paper, but a sofa that's two inches too long to clear a door frame can ruin a whole project. This MCP lets your AI client handle the math of spatial planning. You can ask your agent to check if a furniture layout respects boundaries or if a walkway is too narrow for comfortable movement. It turns your AI into a spatial analyst that understands the practicalities of interior design. By connecting this to the Vinkius catalog, you get a reliable way to double-check every layout before you ever order a single piece of furniture. It's about moving from 'this looks good' to 'this actually works' for the people living in the space.

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## Core Capabilities

### 01 — Check for boundary violations

Identifies if furniture pieces hit walls, doors, or windows.

### 02 — Measure unobstructed floor area

Calculates the percentage of open space remaining in a room.

### 03 — Identify narrow walkways

Flags areas where the path between items is too tight for walking.

### 04 — Verify ergonomic gaps

Ensures there is enough distance between items like sofas and coffee tables.

### 05 — Detect door and window obstructions

Scans for furniture placed in the swing path of doors or in front of glass.

# One Click on Vinkius — From Prompt to Execution

Available at [vinkius.com/mcp/room-layout-planner](https://vinkius.com/mcp/room-layout-planner) — connect your AI agent in three steps.

- 01 Provide your AI client with the room dimensions and a list of furniture items.
- 02 Ask the agent to run a spatial analysis on the proposed layout.
- 03 Review the walkability scores and clearance alerts.

The bottom line is you get a verified floor plan that respects real-world movement constraints.

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## Built For

This is for interior designers, real estate stagers, and homeowners who need to move beyond guesswork to ensure a room is actually functional.

### Interior Designer

Uses the tool to verify that a client's furniture choices won't block doorways or violate clearance codes.

### Real Estate Stager

Plans furniture layouts for open houses to maximize the perceived flow of the space.

### Homeowner

Checks if a new sofa or dining set will actually fit in their living room before they make a purchase.

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## What Changes When You Connect

- 01 Avoid costly furniture returns by using `validate_placement_integrity` to catch boundary issues before they happen.
- 02 Ensure comfortable movement with `calculate_walkability_score` to find the perfect balance of furniture and open space.

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- 03 Meet ergonomic standards by using `check_clearance_compliance` to verify gaps between coffee tables and seating.

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  - 04 Speed up the design phase by letting your agent handle the geometry of room layouts automatically.

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  - 05 Provide clients with data-backed floor plans that prove a layout is functional and safe.

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## Real-World Applications

### Apartment Staging

A stager needs to know if a sectional sofa will block the path to the balcony in a small studio.

### Retail Planning

A shop owner wants to know the best furniture density to keep aisles clear for shoppers.

### Home Office Setup

A remote worker wants to see if two desks and a bookshelf will leave enough room to walk around.

### Hotel Room Layout

A designer needs to ensure the clearance between the bed and the wall meets safety codes.

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## Patterns to Avoid

### Guessing clearances

#### ✗ AVOID

Trying to eyeball if a table is far enough from a chair.

#### ✓ INSTEAD

Use `check_clearance_compliance` to get exact inch measurements for every gap.

### Ignoring obstructions

#### ✗ AVOID

Placing a cabinet in front of a window.

#### ✓ INSTEAD

Use `validate_placement_integrity` to scan for boundary violations and door swing paths.

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## Overcrowding

### X AVOID

Filling a room until it looks full but is unusable.

### ✓ INSTEAD

Use `calculate_walkability_score` to see the actual percentage of open floor space.

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## The Right Fit

Use this if you need to validate the physical feasibility of a floor plan, check for walkability, or ensure ergonomic clearances in interior design. Don't use it if you need to generate 3D photorealistic renders or if you need to generate full construction blueprints with electrical and plumbing specs. This is a spatial analysis tool, not a rendering engine.

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# Room Layout Planner for Interior Design Spatial Analysis

Interior designers often spend hours manually measuring clearances and checking if a piece of furniture will block a doorway or a window. This manual checking involves flipping between blueprints, tape measures, and furniture spec sheets, which makes it easy to overlook a small but critical error.

With this MCP, you can just describe the room and the furniture list to your agent. It handles the spatial math and tells you immediately if the layout works or if you need to move a piece three inches to the left. You get a verified plan without the manual math.

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# Room Layout Planner for Furniture Clearance Validation

You can stop worrying about whether a sofa will be too close to a coffee table or if a hallway will be too narrow for people to pass each other. The agent identifies these clearance issues automatically.

This means you can move from guessing to knowing. You get to present your clients with layouts that are guaranteed to be functional and comfortable.

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## See It in Action

Real prompts you can use once this MCP is connected to your AI agent through Vinkius Cloud.

**U** Can I fit a king-sized bed in a 10×12 room with a door on the long wall?



Based on the room dimensions, here is the layout analysis:

- Bed Size: 76 × 80 inches
- Room Size: 120 × 144 inches
- Status: **Valid**
- Notes: The bed fits with 24 inches of clearance on the sides. It does not obstruct the door frame.

**U** Is there enough room to walk around this dining set?



I've analyzed the dining area:

- Walkability Score: **82%**
- Primary Walkway: 36 inches
- Clearance: Sufficient
- Recommendation: The layout provides a clear path. You might want to move the side chair slightly to increase the clearance to 40 inches for a more spacious feel.

**U** Check if this sofa blocks any windows.



I checked the placement of the sofa against the window boundaries:

- Status: **Clear**
- Distance from Window: 6 inches
- Obstruction: None detected.

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# Frequently Asked Questions

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**01 How does the Room Layout Planner check if my furniture fits?**

It evaluates the dimensions of your furniture against the room's boundaries. It checks for collisions with walls, windows, and door swing paths to ensure everything fits as intended.

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**02 Can the Room Layout Planner tell me if my room is too crowded?**

Yes. It provides a walkability score that calculates the percentage of unobstructed floor space. This helps you see if there is enough room for people to move comfortably.

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**03 How do I use Room Layout Planner to check for walkways?**

Your agent can analyze the gaps between furniture pieces. It identifies narrow walkways and tells you if the clearance meets standard comfort levels.

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**04 Can Room Layout Planner help with interior design clearance?**

It specifically checks for ergonomic gaps. For example, it can verify if there is enough space between a sofa and a coffee table to meet design standards.

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**05 Does the Room Layout Planner check for door obstructions?**

Yes, it validates placement integrity by checking if furniture sits in the path of a door or blocks a window.

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**06 How accurate is the Room Layout Planner for furniture placement?**

It provides precise spatial analysis based on the dimensions you provide. It's a great way to catch errors before you buy furniture or start construction.







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# Go Live in 60 Seconds

Get your connection token from [cloud.vinkius.com](https://cloud.vinkius.com), then paste the endpoint URL into any MCP-compatible client.











YOUR MCP ENDPOINT

```
https://edge.vinkius.com/[TOKEN]/mcp
```

CLIENT	WHERE TO CONFIGURE
 <b>Claude AI</b>	Profile → Customize → Connectors → "+" → Add custom connector → Paste endpoint
 <b>Cursor</b>	Settings → Features → MCP Servers → "+ Add New MCP Server" → Type: SSE → Paste endpoint
 <b>VS Code</b>	Ctrl/Cmd+Shift+P → "MCP: Add Server" → add <code>"room-layout-planner": {   "url": "..." }</code>
 <b>Windsurf</b>	MCP Settings → <code>mcp_settings.json</code> → Add endpoint URL
 <b>ChatGPT</b>	Settings → Tools & plugins → Add MCP server → Paste endpoint
 <b>Gemini</b>	Extensions → Add MCP Server → Paste endpoint URL

## ASK AN AI ABOUT THIS

Let your preferred AI explain this MCP server

-  **Ask ChatGPT** 
-  **Ask Claude** 
-  **Ask Perplexity** 
-  **Ask Gemini** 
-  **Ask Grok** 

READY TO CONNECT

# Room Layout Planner is live on Vinkius Cloud.

Get your connection token, paste it into your AI agent, and  
start building. No SDK. No deployment. Just results.

[Start at cloud.vinkius.com](https://cloud.vinkius.com) →

[vinkius.com](https://vinkius.com) · [support@vinkius.com](mailto:support@vinkius.com)

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### DOCUMENT INFORMATION

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