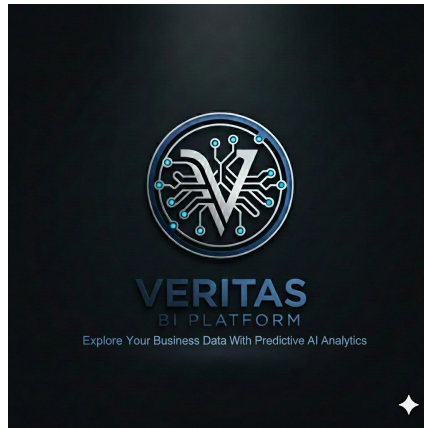




Veritas AI Construction Platform

Product Design Document

KnightRoad Veritas AI Platforms | July 2026 | Confidential

Document type	UI/UX Design Specification
Version	1.0
Platform version	Veritas AI Construction Platform v1.0
Primary client	BTVI Vocational School Construction Department
Author	Dominic R. Nottage, PMP · CSM

Overview

This document describes the user interface design of the Veritas AI Construction Platform — an integrated web application for construction project management, in-browser building design, safety monitoring, resource planning, and VR workforce training. All screens share a dark-theme design system optimised for field and office use.

Design Principles

- **Unified navigation** — A persistent top nav bar links all modules within a single project context.
- **Dark theme** — Reduces eye strain for extended use; consistent palette across all screens (#121212 body, #1E1E1E cards, #2196F3 accent).
- **Information density** — Dashboard and operational screens pack KPIs, alerts, and actions above the fold.
- **Progressive disclosure** — The 10-step wizard breaks complex project setup into manageable steps with AI assistance at each stage.
- **Design-to-delivery** — Design Studio connects sketching directly to the BIM viewer, schedule, and safety modules.
- **Real-time awareness** — Safety alerts and dashboard widgets refresh automatically without page reload.

Screen Inventory

#	Screen	Route	Primary users
1	Login & Authentication	/login	All users
2	Executive Dashboard	/dashboard	PM, Instructors, Executives
3	Design Studio	/design-studio	PM, Designers, Students
4	New Project Wizard (UC-09)	/new-project	PM, Lead Instructor
5	Resource Plan	/resource-plan	PM, Site Foreman
6	Safety Monitor	/safety	Safety Officer, PM
7	VR Training Hub	/vr-training	Students, Instructors, Foremen
8	Resourciist (Resource List)	/resourciist	PM, Site Foreman

1. Login & Authentication

Route: /login

Branded entry point for BTVI and client users. Email/password sign-in with session persistence.

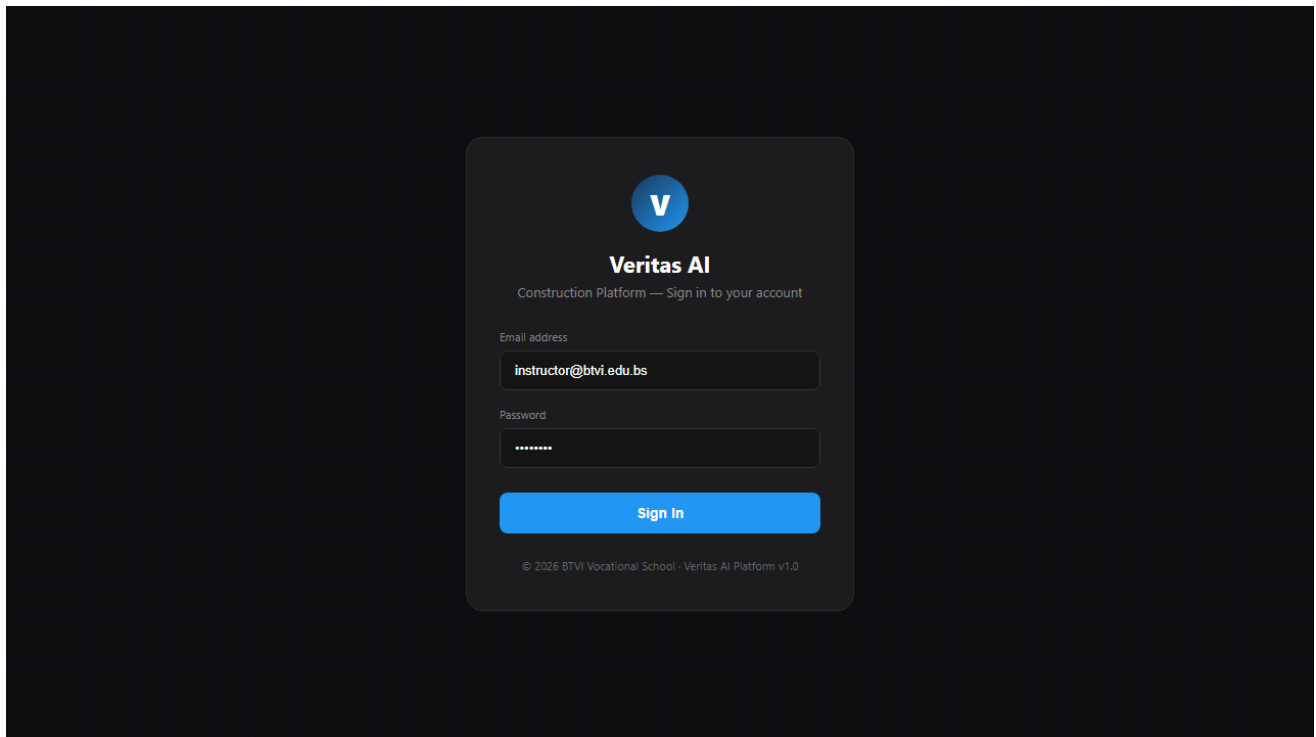


Figure — 1. Login & Authentication screen mockup

Key UI elements

- Veritas AI branded login card with animated grid background
- Email domain validation for institutional users (e.g. btvi.edu.bs)
- Session cookie management and redirect to dashboard on success

2. Executive Dashboard

Route: /dashboard

Single-pane command center for project health — budget, progress, safety, tasks, team, and 3D BIM.

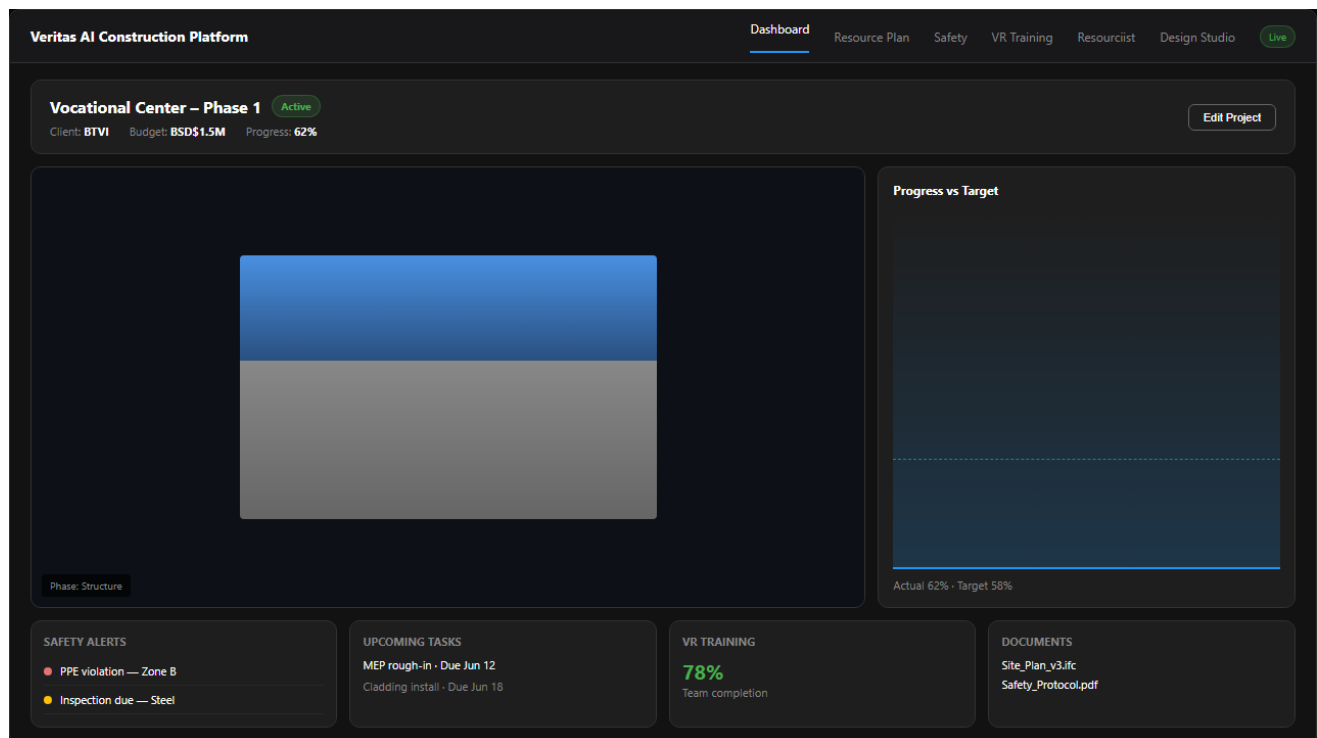


Figure — 2. Executive Dashboard screen mockup

Key UI elements

- Project header with status badge, budget bar, and inline finance editing
- Interactive 3D BIM viewer with construction-phase filtering
- Progress graph (actual vs. target completion)
- Safety alerts, upcoming tasks, VR training status, and document list widgets
- Team roster cards and multi-project switcher
- Real-time refresh via Server-Sent Events (15-second interval)

3. Design Studio

Route: /design-studio

In-browser building design — draw floor plans, preview in 3D, export IFC4, and push to Speckle.

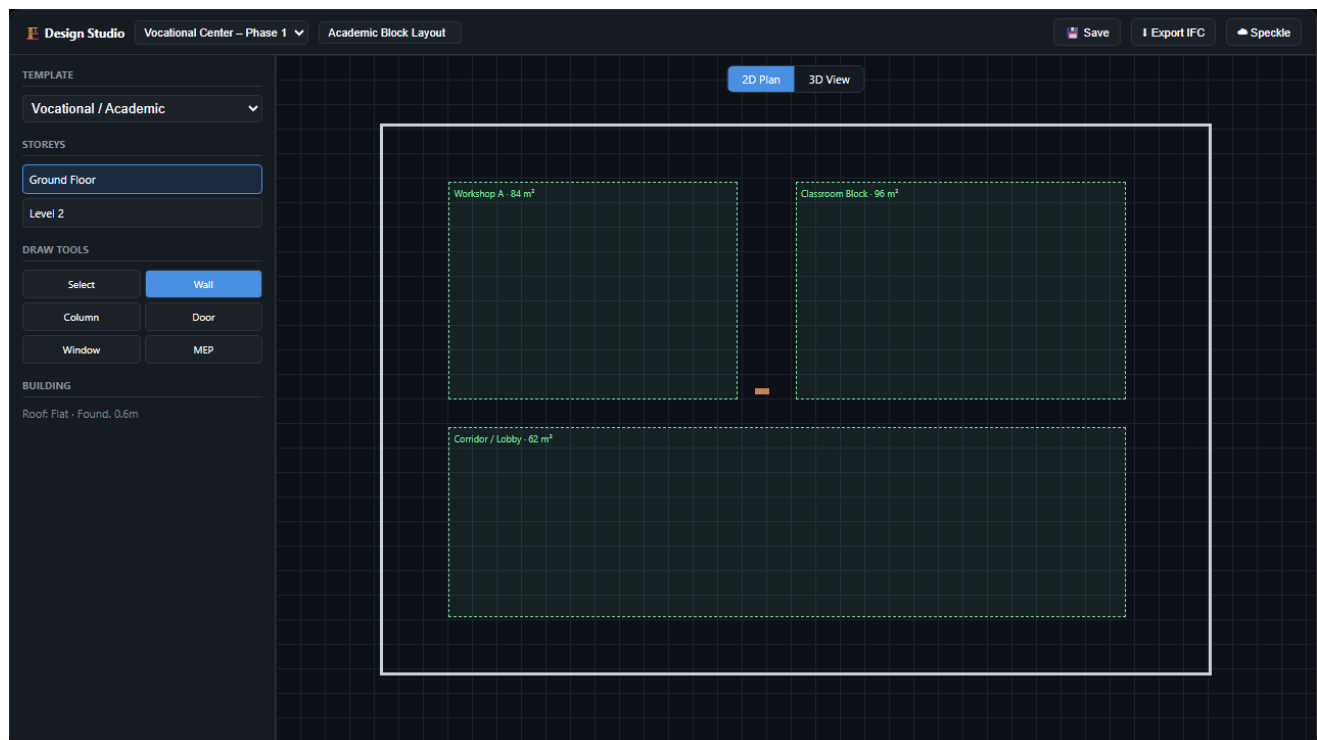


Figure — 3. Design Studio screen mockup

Key UI elements

- 2D plan canvas with wall, column, door, window, and MEP draw tools
- Multi-storey editing with duplicate/delete and snap-to-grid
- Auto room detection and labelling from wall geometry
- Instant 3D preview with construction-phase filtering
- IFC4 export for Revit, ArchiCAD, and Blender
- Speckle push for cloud model versioning and team sharing
- Eight building-type templates as editable starting plans

4. New Project Wizard (UC-09)

Route: /new-project

Guided 10-step flow to initialise and publish a construction project from a blank slate.

The screenshot shows the 'Veritas AI Construction Platform' interface for the 'New Project' wizard. At the top, a progress bar contains 10 steps: 1 Type ✓, 2 Details ✓, 3 Zones ✓, 4 Team (active), 5 Schedule, 6 Safety, 7 VR, 8 Documents, 9 Review, and 10 Publish. The main content area is titled 'Step 4 — Assign Team Members' with the instruction 'Select personnel from the directory and assign roles for this project.' Below this, there are four selection boxes: 'D. Nottage — Lead Instructor / PM' (checked), 'M. Rolle — Safety Officer' (checked), 'J. Smith — Site Foreman' (unchecked), and '12 Students — Assigned' (checked). A message box states 'AI has suggested zones for Vocational / Academic — 6 monitoring zones mapped to cameras.' At the bottom, there are two buttons: '← Back' and 'Next: Schedule →'.

Figure — 4. New Project Wizard (UC-09) screen mockup

Key UI elements

- Building type selection from 8-category catalogue
- Project details, site zones, team assignment, and document upload
- AI-generated CPM schedule with crew leveling (reviewable at Step 5)
- Safety protocol mapping and VR training auto-assignment by role
- Draft save/resume and edit-published-project support

5. Resource Plan

Route: /resource-plan

Operational scheduling workspace combining Kanban task boards and critical-path Gantt charts.

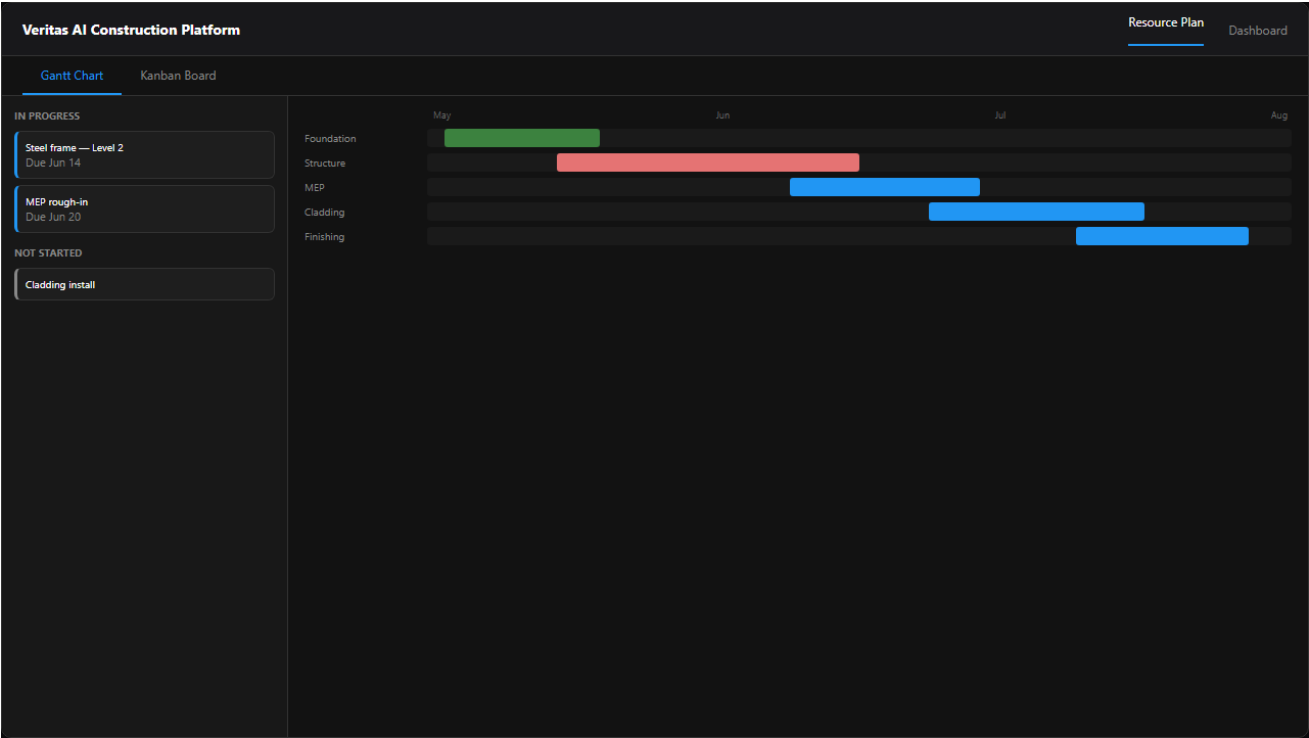


Figure — 5. Resource Plan screen mockup

Key UI elements

- Searchable Kanban board grouped by task status
- Gantt chart with CPM, dependencies, lag, and resource pools
- Critical-path highlighting and overdue/inspection alerts
- Budget linkage — spent amount follows completed task costs

6. Safety Monitor

Route: /safety

Site safety operations center with live camera feed simulation, alert log, and zone status.

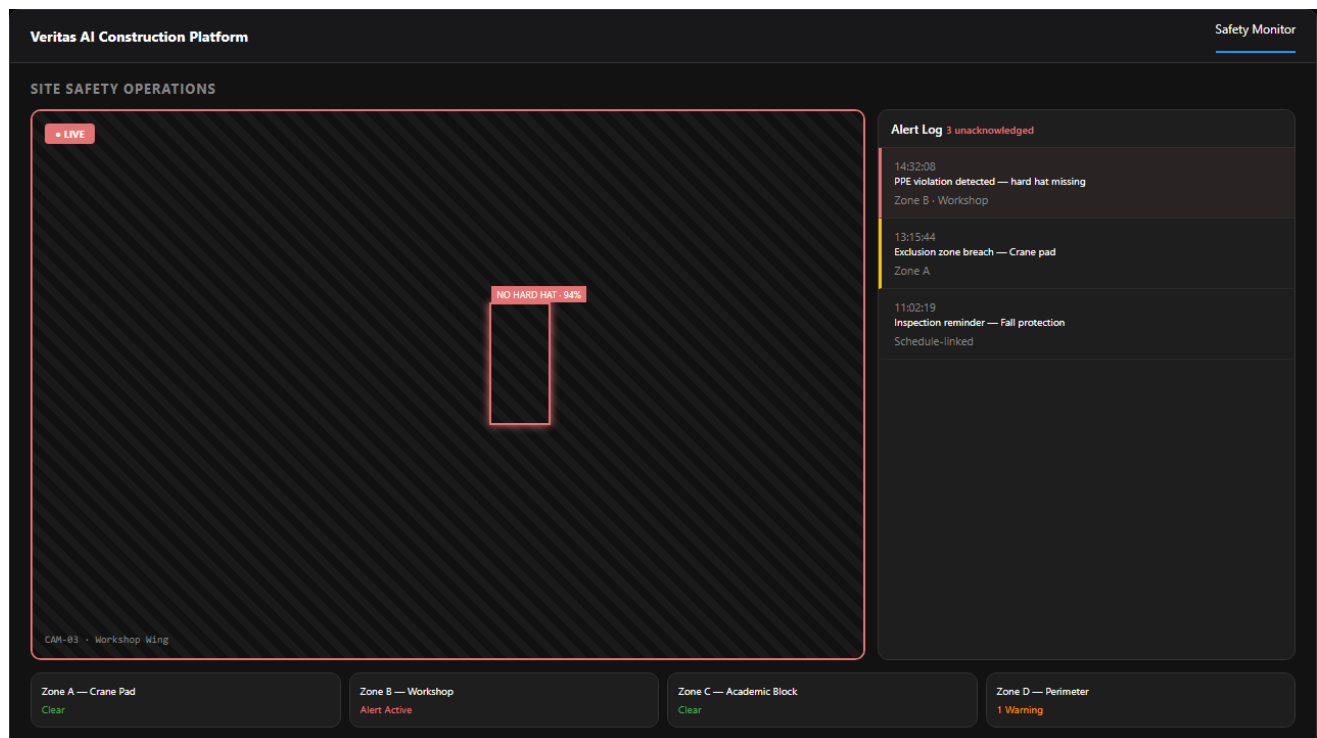


Figure — 6. Safety Monitor screen mockup

Key UI elements

- Simulated live camera feed with AI-style bounding boxes (PPE, exclusion zones)
- Alert log with severity levels, confidence %, and acknowledgement workflow
- Zone status cards mapped to site monitoring areas
- Alerts synchronised with the executive dashboard (shared alert engine)

7. VR Training Hub

Route: /vr-training

Workforce competency tracking with role-based VR module assignments and completion status.

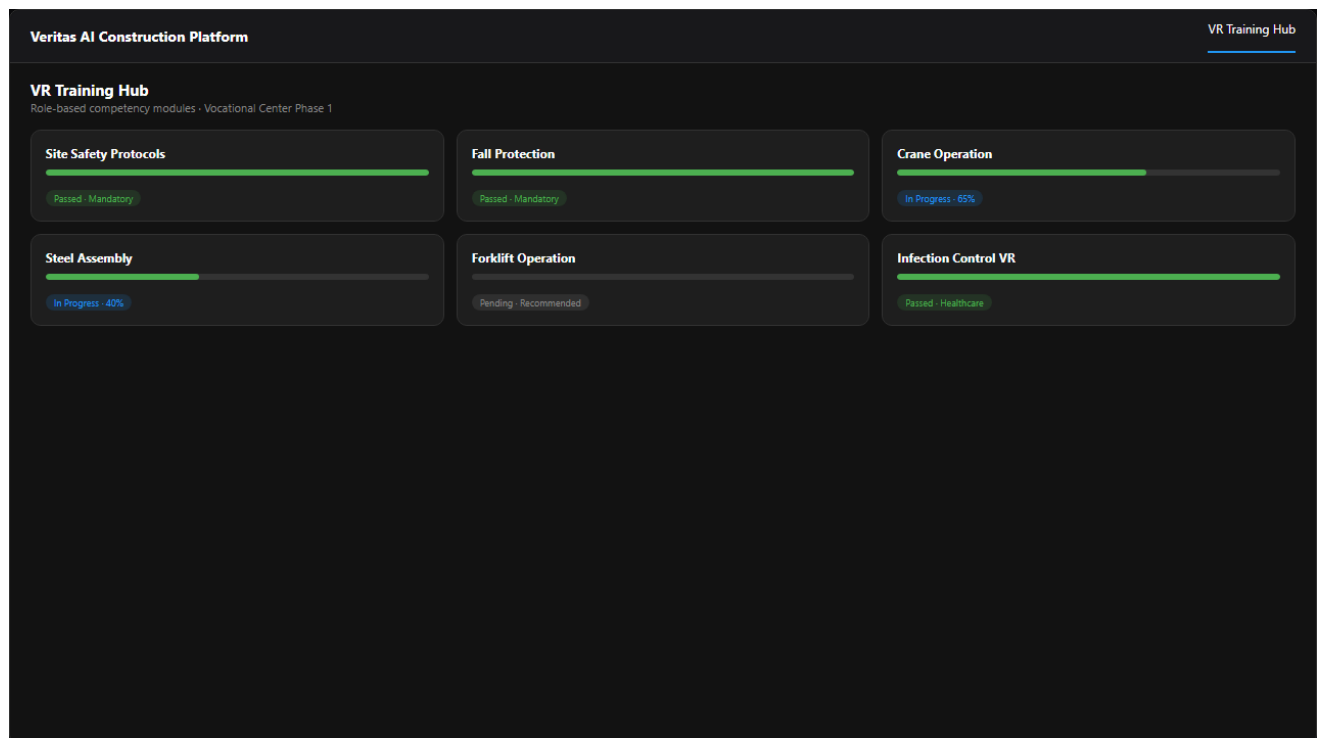


Figure — 7. VR Training Hub screen mockup

Key UI elements

- Module cards with completion percentage and pass/in-progress/pending status
- Role-based assignments: Mandatory, Recommended, or Not Required
- Modules: crane operation, fall protection, site safety, steel assembly, forklift, infection control
- Module launch API for VR session simulation

8. Resourciist (Resource List)

Route: /resourciist

Asset and personnel inventory — personnel, heavy machinery, and materials with status tracking.

Veritas AI Construction Platform

Resourciist

Search assets, personnel, materials...

All

Personnel

Machinery

Materials

Resource	Category	Location	Status	Qty
Mobile Crane — Liebherr LTM	Heavy Machinery	Zone A	In Use	1
Site Foreman — J. Smith	Personnel	Zone B	Available	—
Rebar — Grade 60 (#5)	Materials	Yard Store	Low Stock	420 kg
Excavator — CAT 320	Heavy Machinery	Zone D	Available	1
Concrete — Ready Mix	Materials	Batch Plant	Available	12 m³

Figure — 8. Resourciist (Resource List) screen mockup

Key UI elements

- Category filters: Personnel, Heavy Machinery, Materials
- Status tracking: Available, In Use, Low Stock
- Search, filter, add/edit/delete resources
- Project-scoped asset views

Navigation & Information Architecture

Users sign in at **/login** and land on the Executive Dashboard. The top navigation bar provides access to all modules. Project context (active project ID) persists across every screen via a shared client-side context layer, so switching between Safety Monitor and Resource Plan never loses the active job.

Flow	Path
Sign in	Login → Dashboard
Create project	New Project Wizard (10 steps) → Dashboard
Design building	Design Studio → Save → Dashboard 3D viewer / Export IFC
Manage schedule	Resource Plan (Kanban + Gantt)
Monitor safety	Safety Monitor ↔ Dashboard alerts (shared engine)
Track training	VR Training Hub
Manage assets	Resourciist

Visual Design System

- **Background:** #121212 (body), #1E1E1E (cards), #18181B (nav)
- **Accent:** #2196F3 (primary actions, links, active nav), #4CAF50 (success/active status)
- **Alert colours:** #E57373 (critical), #FFC107 (medium), #FF9800 (warning)
- **Typography:** Inter / Segoe UI system stack; Sora on wizard screens
- **Border radius:** 10–12px cards, 6–8px buttons and inputs
- **Layout max-width:** 1400px centred content on dashboard and safety screens