



Introducing:

ARCH PLAN AI

Technical Documentation

Precision wall detection, measurement extraction, and architectural analysis using YOLOv8 and PaddleOCR. Convert floor plans into detailed Excel reports in under 3 seconds.

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Overview

About the Solution

Arch Plan AI is an advanced computer vision platform designed to eliminate manual floor plan measurement and architectural analysis — replacing slow, error-prone processes with automated AI-powered precision.

Built on YOLOv8s, YOLOv10, and PaddleOCR v2.7 with OpenCV image processing, the platform automatically detects walls, extracts measurements, reads room labels and annotations, and generates detailed Excel reports from architectural floor plan images in under 3 seconds.



Business Problem / Challenges

Manual space measurement and floor plan analysis are slow, error-prone, and inconsistent, leading to inaccurate estimates and project delays:

Manual floor plan measurement takes 3+ hours per plan, delaying project timelines and cost estimates

Teams relying on manual methods introduce measurement errors that cause costly change orders

Manual processes require dedicated estimators that significantly inflate operational costs

Scaling architectural analysis across large project portfolios is slow and resource-intensive



Key Capabilities

YOLOv8s and YOLOv10 detect walls, doors, windows with 98.5% accuracy.

Automatic scale detection and pixel-to-feet conversion with $\pm 1.5\%$ precision

PaddleOCR reads room labels, dimensions, and architectural annotations

Wall IDs, lengths, confidence scores, and coordinates in detailed spreadsheets.

Annotated floor plans with numbered walls and measurement overlays

Upload 100+ plans simultaneously with parallel GPU processing



Value Proposition

01

Time Savings 85%
reduction : 3 hours
manual
measurement
reduced to 3
seconds automated

02

Cost Savings :
\$45K+ monthly
savings by
eliminating 2 full-
time estimator
positions

03

Accuracy 98.5%
wall detection
accuracy $\pm 1.5\%$
measurement
error across all
plans

04

Scale : Unlimited
floor plans
processed with
GPU auto-scaling
capabilities

05

Processing Speed:
Under 3 seconds to
detect, measure,
and report any
floor plan image

Scan To Try:



Primary Tools & Technologies

01

AI Models

YOLOv8s and YOLOv10 with PaddleOCR v2.7 for wall detection and text extraction.

02

Backend APIs

FastAPI and Python 3.11 with OpenCV 4.9 and Pillow for image processing and analysis.

03

Reporting

openpyxl and Pandas for Excel report generation with ChromaDB and Pinecone vector store.

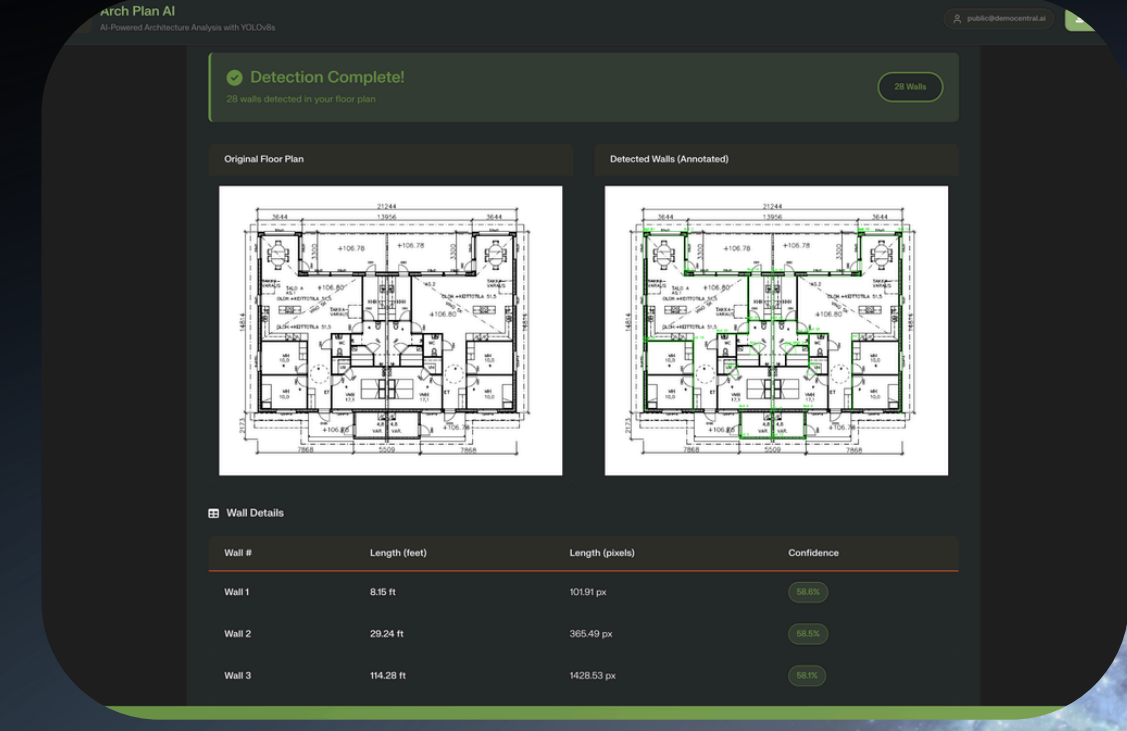
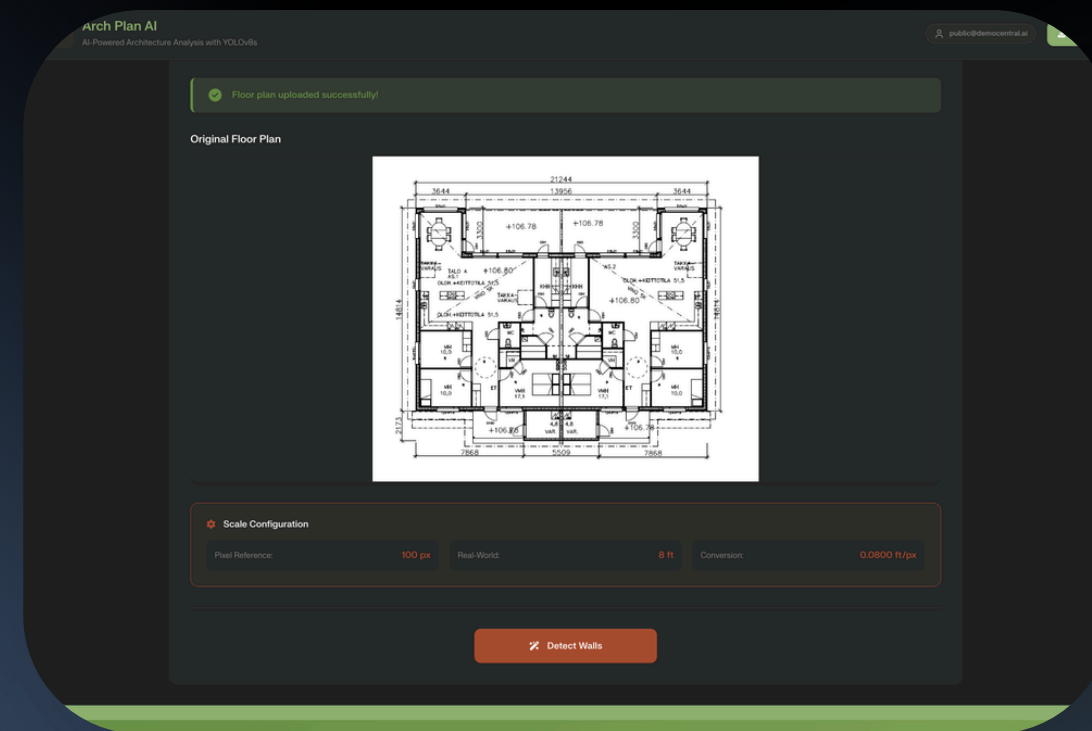
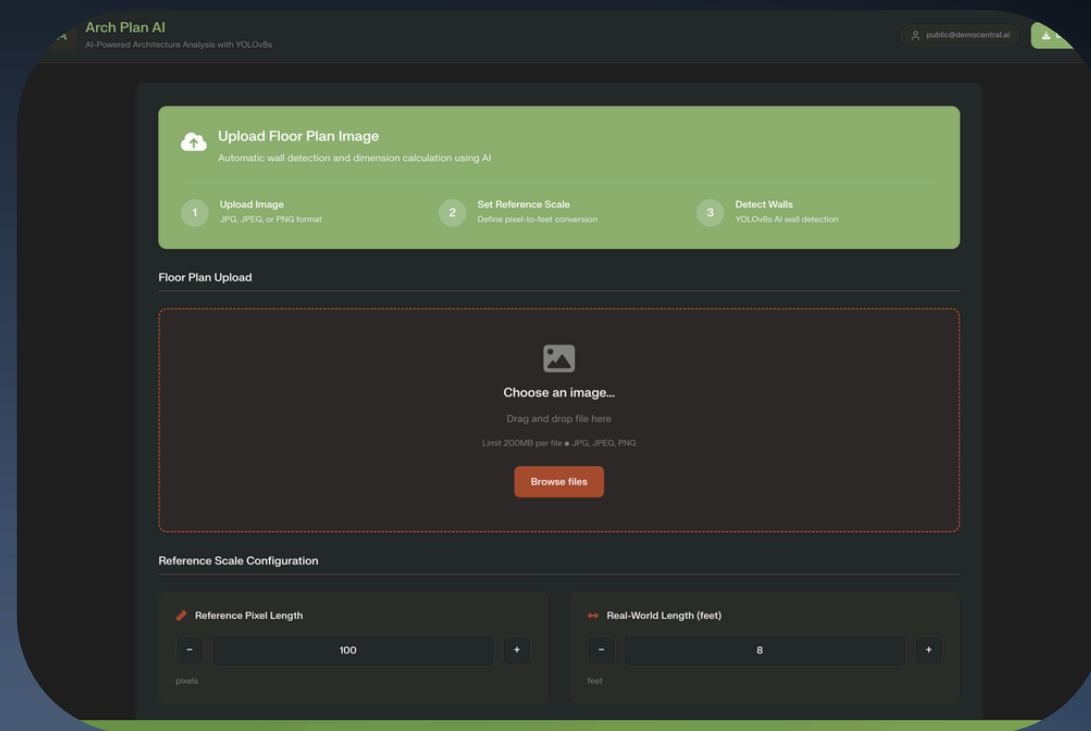


Solution Glimpses

Image Upload

Original floor plan

Walls Detection



Watch the full video on [Vimeo.com](https://vimeo.com) or scan here to watch:



Request a Demo

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