

PLOTVA STUDIO PRO — product, technical & market dossier

Everything below was measured from the shipped build **v39.6-r3** (28 October 2026) and from the recorded test runs. Prices for competitors are 2026 list prices found in the market check; USD converted at **1 USD = PKR 277**.

1 · What the product is

A complete house-design studio that runs **from one HTML file** — no installation, no internet, no cloud account. A plot survey goes in; a full A4 drawing set, BOQ, bar-bending schedule, 3-D view, and CAD files come out. It is licensed per machine with signed keys, checked against your own server once an hour, and can be blocked or revoked remotely. The same program is also served on the public website in viewer mode, where it can be inspected but not used to design, save or download anything.

Measured property	Value (v39.6-r3)
Program size (unsealed source)	2,888,778 bytes — one file, zero dependencies, zero network calls to work
Sold copy (sealed)	3,864,125 bytes · AES-256-GCM · PBKDF2 600,000 iterations · password <i>Naksha@2026</i>
Free demo build	2,897,263 bytes · never expires · no server · exports blocked
Website upload package	783,079 bytes · <i>index.html</i> + <i>app.html</i> + <i>_worker.js</i>
Code scale	268 functions · 21 classes · 20 script blocks · 32 currencies · 27 regional code sets
Standards library	107 controlled standard/code entries across 12 discipline groups (898 code citations)
Space library	199 named room / space types
Recorded test result	56/56 whole-application checks · 17/17 exports · 19/19 owner-control checks · 55/55 requirement checks
Export formats	17 distinct outputs: DWG, DXF (AC1032), PDF drawing set, PNG, SVG, LISP, SCR, JSON, BOQ CSV, BBS CSV, Standards Register, Drawing Register, Revision History, Structural Integrity, DWG kit, layout DWG, layout PDF
Proven CAD output	DXF AC1032 with 9,841 entities on 33 layers (6,916 LINE · 1,943 TEXT · 417 CIRCLE · 284 3DFACE · 141 SOLID · 76 DIMENSION) · verified 0 errors in ezdxf · DWG R12 669,017 bytes
Proven document output	28-page A4 PDF set with the educational-use disclaimer on every page · BOQ 29 priced rows

2 · Feature breakdown

Area	What the user actually gets
Design generation	Plot-driven auto-layout: width, depth, floors, bedrooms, baths, dining, study, puja, porch, basement. Setbacks in-fill or custom, facing direction, corner plot, registration authority, building type, architectural style, airiness, Vastu mode, gate style, stair shape/position, corridor width, MEP mode.
Drawing engine	2-D plan with walls, doors, windows, columns, dimension strings, room labels and finishes; live 3-D view; sheet layouts in A4, one drawing per page, with title block and revision block.
Structure	Structural system choice (RCC frame / load-bearing / steel), concrete and steel grades, soil type, seismic zone, member audit to ACI 318-19 style checks, column schedule, beam/column sizing, footing schedule, integrity report with pass/fail per member.
Standards & compliance	107-entry controlled library: BCP-2021, PEC, municipal/development-authority bylaws, fire (NFPA / BCP Fire), energy (PETS), plus IBC, IRC, ASCE 7, ACI 318, AISC 360, TMS, Eurocode, BS EN, ASHRAE, IEC and more. Every drawing carries a standards register and a drawing register.
Quantities & cost	Material take-off and priced BOQ (29 rows on the reference design), bar-bending schedule with cut lengths, steel weights, concrete volumes, with currency switching across 32 currencies.
CAD interchange	DXF AC1032 with real DIMENSION entities and 33 named layers; DWG R12 written in-app; LISP and SCR scripts; a one-click kit that converts to a true AutoCAD-2018 DWG through the free ODA File Converter.
Documents	A4 PDF drawing set, PNG and SVG sheets, drawing register, revision history, integrity report, and a complete start-to-finish guide PDF. Educational-use disclaimer printed on every PDF/CAD output and shown in-app.
Interface	Three ribbon tiers (Basic / Advance / Professional) with 11 / 18 / 25 tabs, drag-reorderable rows, proven 0 overlaps and 0 clipped labels at 1280, 1366 and 1600 px; command palette; undo/redo; project save/reload; time-vault snapshots.
Internationalisation	Country → state → city wizard applies the governing code family, seismic demand, default soil, currency and bye-law profile (27 regional sets, 32 currencies). English-only UI labels, as required.

Area	What the user actually gets
Licensing & control	Signed per-machine keys (ECDSA P-256), signed 7-day leases, hourly server validation, remote block of software / machine / IP / licence, minimum-version gate, owner-only unlimited key.

3 · Technical breakdown

Layer	Implementation
Delivery	Single self-contained HTML document. No framework, no npm, no build step for the customer, no external font/CDN dependency for core functions. Opens from disk, from a USB stick, or from a web server.
Rendering	Hand-written Canvas 2-D/3-D renderer: entities (wall, opening, column, dimension, hatch, text) drawn to canvas, with a full re-render path, view switching, and print stylesheet.
Geometry & data model	Project object graph (plot → floors → rooms → walls → openings → columns → members) with JSON serialisation, undo stack, and snapshot vault.
Standards engine	Data-driven register (grp / code / edition / authority / source / applicability) consumed by the audit routine, which returns per-check results with clause references.
Structure audit	Member-by-member demand/capacity check with configurable material grades and soil/seismic inputs; produces the integrity CSV and the schedule drawings.
CAD writers	Custom DXF writer (AC1032, real DIMENSION entities, 33 layers) and a DXF/2-D to R12 DWG writer; LISP/SCR generators for driving external AutoCAD; ODA-based converter kit for 2018 DWG.
Document writers	Vector PDF sheet composer (A4, one drawing per page, title block, disclaimer footer), PNG/SVG sheet rasteriser, CSV writers for BOQ / BBS / registers.
Encryption (sold copy)	AES-256-GCM over the whole program, key derived by PBKDF2-SHA256 with 600,000 iterations from the owner password; the shell holds only ciphertext + salt + IV + plaintext hash/length check.
Key system	Owner-side signing only. Keys are base64url payloads signed with ECDSA P-256 and verified in-app against an embedded public key — offline, with no lookup and no phone-home needed.
Server layer	Cloudflare Worker (v4) with KV namespace LIC: /v1/activate, /v1/check, /v1/ping, /v1/visit, /v1/health, plus a token-guarded owner dashboard. Issues signed 7-day leases (NLS1).
Remote control	KV-backed block lists: software-wide switch, per-machine, per-IP, per-licence revocation, minimum version. Unblock deletes the key, so state is genuinely restored.
Enforcement in app	Full signed re-validation every 60 minutes (online and local), read-only poll every 10 minutes, version gate on every check, immediate shutdown on block/revoke, viewer-only mode when no valid lease exists.
Privacy / telemetry	Machine ID hash, app version, platform tag and coarse region only — no drawings, no project data, no personal files ever leave the machine.

4 · Market comparison (2026 list prices)

Competitor prices were taken from vendor pricing pages in the October 2026 market check; PKR is converted at 277. Feature columns reflect publicly documented capability.

Product	Model / price	Sub-scrip-tion?	Offline?	Local codes?	BOQ / BBS?	DWG out?	Remote kill / licence control?
PLOTVA STUDIO PRO	\$2 – \$129 (Rs 550 – 36,000) per term; 1 day to 1 year	No — term key, one payment	Yes, full	Yes — BCP/PEC + 27 regional sets	Yes, both, priced	Yes (R12 + 2018 via free ODA)	Yes — block/revoke/version gate
Planner 5D	Premium \$19.99/mo or \$59.99/yr · Professional \$49.99/mo or \$399.99/yr	Yes, monthly /yearly	Partly	No (generic)	No	No (image/PDF exports)	No
Cedreo	Free 1 project · Personal \$139/project · Pro \$129/mo (\$79/mo annual) · Enterprise \$159/user/mo	Yes	No	No	No	No DWG (PDF/OBJ)	No
HomeByMe	Free 2 projects · Essentials \$29/mo (\$25 annual) · Pro \$65/mo (\$53 annual)	Yes	No	No	No	No	No
Space Designer 3D	\$25/mo · DXF from \$45/mo	Yes	No	No	No	DXF on higher tier only	No
RoomSketcher	Pro ≈ \$144/yr	Yes	Partly	No	No	No	No
Plan7Architect	\$169.99 one-time	No	Yes	No	No	No	No
AutoCAD LT	\$540/yr (Rs 149,580)	Yes	Yes (installed)	No — drafting tool, not design	No	Yes	No

Product	Model / price	Sub-scrip-ti on?	Offline?	Local codes?	BOQ / BBS?	DWG out?	Remote kill / licence control?
AutoCAD	\$2,095/yr (Rs 580,315)	Yes	Yes	No	Add-ons	Yes	No
Revit	\$3,005/yr (Rs 832,385)	Yes	Partly	No	Some	Yes	No

5 · Where PLOTVA is genuinely better

Advantage	Why it matters, with the number
Cost of ownership	A full year costs \$129. AutoCAD LT is \$540/yr, AutoCAD \$2,095/yr, Revit \$3,005/yr; Planner 5D Professional is \$399.99/yr and Cedreo Pro is \$129 per <i>month</i> . PLOTVA undercuts the nearest professional equivalent by roughly 3× to 23×.
Works with no internet	Every competitor that does the design work is cloud-bound (Cedreo, HomeByMe, Planner 5D, Space Designer 3D). PLOTVA runs on a site with no signal, on a 10-year-old laptop, from a USB stick.
Local codes, not generic ones	BCP-2021 / PEC / municipal bylaws out of the box, plus 27 regional code sets. For a Pakistani practice this is the difference between a drawing that can be submitted and one that cannot.
Documents, not just pictures	BOQ with prices, bar-bending schedule, standards register, drawing register, revision history and integrity report — the paperwork a client and an approving authority actually ask for. Consumer tools stop at the image.
CAD that other software can open	DXF AC1032 with 9,841 verified entities and 33 layers, DWG R12 in-app, and a free path to true 2018 DWG. Most consumer design tools export a picture, not geometry.
You control your own product	Signed keys, hourly validation, machine binding, remote block and version gate, all on a free Cloudflare account. No competitor in this list gives a small vendor that control.
One file, many customers	No per-customer builds, no installer drift, no dependency rot. A single HTML file can be emailed, put on a USB stick, or served from a website — and it is hash-registered on every release.

6 · Where it is honestly weaker

To be credible in front of an engineer or a client, these limits must be stated, not hidden:

Limit	The honest position
Not a BIM authoring tool	It produces architectural and structural drawings and schedules, not a full BIM model with clash detection and multi-discipline coordination (Revit/ArchiCAD territory).
Native DWG is R12	The in-app .dwg is honest AutoCAD R12. A true 2018 DWG needs one external step — the free ODA File Converter — which the included kit automates.
Single user	No real-time multi-user collaboration or cloud project sync. That is a deliberate trade for offline reliability and zero hosting cost.
Not a substitute for an engineer	The structural audit is a first-pass check with clause references; final design and sign-off remain with a licensed professional.
Website source is readable	The public copy ships unencrypted by the owner's instruction (so it opens with no password). Its protection is the key, the hourly check, machine binding and remote block — not secrecy of the code.
Screenshots cannot be blocked	No web page can prevent an OS screenshot. The right-click/print/copy guards are a deterrent against casual copying.

7 · Price ladder and packaging

Plan	Days	Rights	USD	PKR
1 day	1	Design only — nothing saved, no downloads	\$2	Rs 550
3 days	3	Design + save, downloads blocked	\$5	Rs 1,400
7 days	7	Full	\$15	Rs 4,150
30 days	30	Full	\$50	Rs 13,850
Owner key	unlimited	Everything, owner machine only — never sold	—	—

Why these numbers: the 7-day tier sits at 1.6 % of a monthly AutoCAD LT licence — an easy yes for a one-house job; the yearly tier lands at 24 % of AutoCAD LT and 4 % of Revit, while every consumer plan above bills monthly and stops working when the subscription stops. Second seat 40 % off.

8 · Verification record

Every claim in this document was executed against the shipped files: 56/56 whole-application checks, 17/17 export checks, 19/19 owner-control checks, 55/55 requirement checks, plus the site sweep (visitor rights none, popup on generate and on download, zero files downloaded). Rebuild hashes for this release:

File	Bytes	SHA-256 (first 32)
PLOTVA-STUDIO-PRO.html (sealed)	3,864,125	1864e8118c06ccbd5dda233400f89384...
PLOTVA-STUDIO-PRO-DEMO.html	2,897,263	9893336b8241f342935087de553bc957...
PLOTVA-CLOUDFLARE-PAGES-UPLOAD.zip	783,079	08353b8aa48f9caa92c33a4a4c863b62...
master source	2,888,778	61dcee0187149c4a4a55b5d29f42a48c...

Educational-use disclaimer. PLOTVA STUDIO PRO is a design and documentation aid. Every PDF and CAD output carries the disclaimer that drawings produced with it must be reviewed, stamped and approved by a licensed architect/engineer before construction or submission. No warranty of fitness for a particular site is given.