the doj & cd
Department:
Justice and Constitutional Development
REPUBLIC OF SOUTH AFRICA

Department: Facilities Management

DOJ &CD Professional Team Software Requirements:

1. **Professional Architect software:**
- Revit & AutoCAD (AEC Collection)
- BIM Collaborate Pro

2. **Professional Mechanical Engineer software:**
- Revit & AutoCAD (AEC Collection)

3. **Professional Electrical Engineer software:**
- Revit & AutoCAD (AEC Collection)

4. **Professional Town planner software:**
- GIS-
- Autodesk Autocad

5. **Professional Quantity Surveyor software:**
- WinQS- To prepare and compile bills of quantities.
- DimensionX-To read drawings take off and measure quantities. (the software must be able to accept GWD, pdf and CAD format drawings)
- QS Plus
- Cost X

Software specifications

Product key	Product name	Product discerption	Qty	Unit price	Total Price
02HI1-005995-L403	AEC Collection	AEC Collection - Commercial Single-user Annual Subscription Renewal	3		
C1GJ1-007163-V111	BIM Collaborate Pro	BIM Collaborate Pro - Single User CLOUD Commercial	1		

		New -Single Subscription			
GIS	GIS	Geographic Information software	1		
WinQS	WinQS	Quantity surveying & Cost Estimating Software	1		
DimX	DimX	DimemsionX (DimX) -on-screen measurement tool that works with drawing/PDF/BIM models	1		

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What is AutoCAD

AutoCAD is a Computer-Aided Design (CAD) software from Autodesk, first released in 1982. It's used across many industries (architecture, engineering, construction, manufacturing, electrical, etc.) to create precise 2D drawings and 3D models. Over time Autodesk has added many advanced features, specialized toolsets, collaboration, cloud/web/mobile access, automation, etc. (Wikipedia)

Key Modules / Specialized Toolsets & Functions

AutoCAD has its "core" 2D/3D drafting and modeling functions, and then a number of **specialized toolsets** for different disciplines. Some of the main ones are:

Module / Toolset	What It Adds / Why You'd Use It
Core AutoCAD (full version)	2D drafting, annotation, dimensioning, layers, blocks, layouts, plotting/printing. Also 3D modeling (solids, surfaces, meshes), rendering, visualization, plus APIs (AutoLISP, .NET, etc.) for automation and customization. (Autodesk)
AutoCAD LT	Lightweight version: good for 2D drafting/documentation, but *no* 3D modeling, fewer automation/customization options (e.g. limited or no LISP, less toolsets). Cheaper option for basic use. (Scan2CAD)
Electrical Toolset	For designing electrical control systems: libraries of symbols, automatic wiring & component tags, panels, reports etc. Saves time for electrical engineers. (MGFX)
Mechanical Toolset	For mechanical engineering: standard part libraries, BOM (bill of materials), features to speed up part/assembly drafting and documentation. (MGFX)
Map 3D / GIS integration	For working with geographic/spatial data, mapping, integrating CAD with GIS, analyzing geographic information, etc. Useful for civil engineering, urban planning. (Modena AEC)
MEP (Mechanical, Electrical, Plumbing)	Support for designing building systems (ducts, wiring, plumbing etc.), intelligent components for MEP workflows. (Modena AEC)
Plant / P&ID toolsets	For plant design, piping & instrumentation diagrams, process diagrams, etc. Useful in industrial plant engineering. (Often part of specialized vertical offerings.) (Modena AEC)

Other features across the toolsets and core version include:

- Automation / scripting (AutoLISP, APIs) (Autodesk)
- Collaboration: desktop + web + mobile versions; cloud storage & sharing of DWG files; markup & feedback tools. (MGFX)
- Data integrity/features like version history, audit trails, comparing drawings, tracing changes without altering drawings. (MGFX)

Pricing (Estimated & Local Examples)

Here's what the cost looks like, both globally (Autodesk list / typical subscription rates) and in South Africa. Note: prices vary depending on reseller, number of seats, support contract, etc.

Tier / Edition	Global Approx Price*	Example Price in South Africa / from local resellers
Full AutoCAD (annual subscription)	Around **US$1,430/year.** (Autodesk)	In SA, example: **R27,450.65/year** for AutoCAD subscription. (Unisasapplication)
AutoCAD (3-year subscription)	Global pricing for 3-year tends to be more cost-efficient (discounts) when committing longer term. e.g. ~$5,925 for 3 years in some offerings. (TrustRadius)	Local three-year specialized toolsets package ~ **R110,000-R113,000** depending on toolsets included. (FirstShop)
AutoCAD LT	About **US$350/year** globally. (Autodesk)	Local pricing likely lower but still significant; local resellers may provide quotes depending on discipline / toolset.
AutoCAD + Specialized Toolsets (bundle)	More expensive due to added vertical toolsets: toolsets increase cost since they add more capabilities. Example local 3-year bundle for AutoCAD + specialized toolsets ~ **R110,169.** (FirstShop)	
Monthly subscription (if offered)	~$235/month (approx for full AutoCAD) for short term / month-to-month licensing. (Findstack)	Local monthly may be rarer; often contracts are annual or multi-year.

*Global prices often exclude VAT / local taxes. Local reseller fees, currency exchange, support and maintenance, specialized toolset add-ons etc. all affect final cost.

Things to Watch / Consider

- **Subscription vs Perpetual License:** Autodesk now mostly sells AutoCAD and its toolsets via subscriptions (term-based licensing). Permanent / perpetual licensing has largely been phased out for many users. (Reddit)
- **Number of seats/users:** Bulk licenses might cost less per seat; negotiating multi-year contracts can yield discounts.
- **Which toolsets you need:** If you only need 2D drafting, AutoCAD LT may suffice. But if you need 3D modeling, specialized electrical or mechanical work, then full AutoCAD with toolsets or specific verticals are necessary.
- **Support, updates, cloud features:** Subscription often includes access to latest updates, cloud collaboration tools, mobile / web versions etc.
- **Local reseller pricing / VAT / currency fluctuations:** In South Africa, local taxes, exchange rates, reseller markups matter.

What is Revit & the AEC Software Ecosystem

- **Revit** is Autodesk's BIM (Building Information Modeling) tool. It is used for designing, documenting, and managing buildings and infrastructure in a multi-disciplinary environment. The model is intelligent: architectural, structural, mechanical/electrical/plumbing (MEP) components are all tied together, so changes in one view update across other views, schedules, and documents. (MGFX)
- The **AEC (Architecture, Engineering & Construction) Collection** is a suite of BIM, CAD, infrastructure, simulation, and coordination tools from Autodesk, bundled together so that architecture, engineering, civil/infrastructure, and construction teams can work in integrated workflows. (autodesk.co.za)

Revit Modules / Key Functions

Here are the major functions/modules/features of Revit, including what architectural, structural, and MEP users can expect, plus some advanced or supporting functionality.

Module / Feature	What It Does / Why It's Useful
Architecture	Create building components like walls, floors, roofs, windows, doors; prepare plans, sections, elevations; work with parametric design (change something once, it updates everywhere); phasing (demolition, renovation), visualisation; design-to-document processes. (MGFX)
Structure	Model structural elements (beams, columns, slabs), analysis tools (load calculations, structural integrity), reinforcement detailing for concrete (rebar), steel connections, integration with structural analysis tools; ability to generate shop drawings and schedules for fabrication. (MGFX)
MEP (Mechanical, Electrical, Plumbing)	Design and model building services systems: HVAC ductwork, piping, electrical circuits, plumbing, lighting, etc. Route and size systems, coordinate with other disciplines. Clash detection / coordination. Integration with fabrication for more detailed work. (MGFX)
Visualization & Rendering	Revit includes tools to generate realistic visual renderings. Supports integration with visualization software. Also includes tools for walkthroughs, showing design intent, communicating designs to stakeholders. (MGFX)
Simulation / Analysis	Energy, daylighting, heating/cooling loads, environmental performance, sustainability assessments. Use of "Insight" (Autodesk's energy / performance analysis tool) inside Revit. Helps assess design alternatives, optimise building performance. (MGFX)
Documentation & Schedules	Automatic generation of plans, sections, details; dimensioning; sheets; schedules (quantities, materials, cost estimates). Because objects are intelligent, schedules update automatically when model changes. Helps avoid manual error. (MGFX)
Coordination / Collaboration	Worksharing (multiple users working on same model), clash detection (especially when combining multiple discipline models or when part of AEC Collection using Navisworks etc.), linking models, common data environment, managing revisions. (info.mg-aec.com)
Customisation / Extensions	API access; Dynamo for Revit (graphical scripting for custom workflows, automation); ability to build families (custom components / parametric objects). (MGFX)

What the AEC Collection Adds

The AEC Collection bundles Revit + many other tools that complement Revit or help with related tasks. Some of the software included, and the value they bring:

- **Civil 3D** – for civil/infrastructure design: terrain modeling, roads, pipelines, site development. (info.mg-aec.com)
- **InfraWorks** – more conceptual planning / early stage infrastructure design, 3D visualization, context modeling. (info.mg-aec.com)
- **AutoCAD** (with toolsets) – for detailed drafting, 2D drawing, interoperability, legacy support. (autodesk.co.za)
- **Navisworks Manage** – for clash detection, coordination, construction sequencing, 5D simulation (cost + time) etc. (autodesk.co.za)
- **Autodesk Docs / Common Data Environment** – cloud-based document management, version control, collaboration. (info.mg-aec.com)

Key Things to Consider

- If your use is purely architectural and you don't need heavy structural or MEP modelling, sometimes using only parts of Revit or fewer seats might suffice.
- Training / skillset: moving to BIM workflows (Revit + AEC tools) often requires investment in staff training.
- Hardware: Revit models (especially multi-disciplinary / large) can become heavy; you'll want workstations with good CPU, RAM, graphics.
- Collaboration & coordination: If multiple disciplines must integrate, using AEC Collection tools (Navisworks etc.) becomes more important.
- Support, updates, and cloud services: these add extra value and often included in subscription but verify what local reseller offers.
