

BRENDATT SERVICES

Educational & Consultancy Services

P.O BOX 52142-00100, NAIROBI

Email: training@eeekenya.com

Website: <https://training.eeekenya.com/>

Email: training@eeekenya.com: Web: training.eeekenya.com

AutoCAD and Building Services Electrical Training Program

Training Program: <https://training.eeekenya.com/program/>

Training Registration: <https://training.eeekenya.com/contact/>

A. Training time

Customizable depending on the institution/individual.

Duration: 2 hours per session

B. Venue

Hybrid: Physical and Online through the Zoom platform*

C. What you also get

1. Drawing templates to practice on (in AutoCAD). Includes already designed electrical drawings.
2. Schedule of symbols for all electrical drawings (in AutoCAD) to use in your future projects.
3. Bills of Quantities (BoQs) templates to start from (in Excel, priced and unpriced) and use in future projects. BoQs to include all sections covered during training.
4. Non-Academic, hands-on training by a practising professional.
5. Training certificate (optional).
6. Bonus Premium prerecorded videos on AutoCAD and DIALux.
7. No examinations.
8. A softcopy of the book, '[Electrical Services for Buildings: A Consultant's Guide](#)' by Eng. Benard Makaa.**
9. Three different projects to work on under the guidance of the trainer. [Download sample instructions here:](#)

D. Requirements

1. Background in basic electrical engineering principles.
2. **Laptop with installed AutoCAD and Dialux.
3. Dedication and commitment to the program.

**Laptop specifications: At least 8GB RAM.

*Training can also be in person in our offices in Juja Town or at our clients' offices in cases of corporate training by companies(for firms located in Nairobi).

Our Delivery Style

- Direct instructions=40%
- Assisted Practice=60%
- Classes are one on one and very personalized

E. Training Schedule

Session	Content	Detailed Content	Time(Hours)
Sessions One, Two & Three	<p>Introduction to Building Services (Electrical) and Introduction to AutoCAD:</p> <p>Drafting in AutoCAD Cleaning drawings Basic AutoCAD commands Advanced AutoCAD commands Layers Blocks Annotation Editing drawings</p>	<p><i>Building Services(Electrical)</i></p> <ul style="list-style-type: none"> • <i>Typical project teams</i> • <i>Project Types</i> • <i>Design Process</i> <p><i>AutoCAD:</i></p> <p><i>Module 1: Introduction</i></p> <ul style="list-style-type: none"> • <i>Introduction to AutoCAD</i> • <i>Understanding the Requirements to Use the Software</i> <p><i>Module 2: Understanding Basic User Interface</i></p> <ul style="list-style-type: none"> • <i>Navigate through the Software</i> • <i>Starting Tips</i> • <i>Set Up the Drawing Environment</i> <p><i>Module 3: Drawing in AutoCAD</i></p> <ul style="list-style-type: none"> • <i>Drawing Techniques</i> • <i>Design Specifications</i> • <i>Using Modify</i> • <i>Using Annotation</i> • <i>Layer Properties</i> • <i>Command Prompt</i> • <i>Toolbar</i> • <i>Creating Views of Objects</i> • <i>Deleting Files</i> <p><i>Module 4: Layout</i></p> <ul style="list-style-type: none"> • <i>Understanding Physical Components</i> • <i>Design and Layout of Object</i> • <i>Intent of Design</i> <p><i>Module 5: Techniques and Documentation</i></p> <ul style="list-style-type: none"> • <i>Input Devices</i> • <i>Useful Technical Illustrations Techniques</i> • <i>Importance of Documentation</i> 	6

		<ul style="list-style-type: none"> <i>Ideas for Creating Documentations</i> <p><i>Module 6: Creating Blocks</i></p> <ul style="list-style-type: none"> <i>Blocks: Overall Review</i> <i>How to Create Multiple Blocks?</i> <i>Using the Block Editor</i> <i>Changing Existing Block Attributes</i> <p><i>Module 7: Viewports</i></p> <ul style="list-style-type: none"> <i>Viewports: General Overview</i> <i>Creating Working Templates in Layouts</i> 	
Sessions Four, Five & Six	Lighting Installations, AutoCAD & Bills of Quantities	<ul style="list-style-type: none"> <i>Design.</i> <i>Formulae.</i> <i>Specifications.</i> <i>Street Lighting Design</i> <i>Creating layouts</i> <i>BoQs</i> <i>Specifications</i> 	6
Session Seven, Eight & Nine	Power Distribution, Design, AutoCAD & Bills of Quantities	<ul style="list-style-type: none"> <i>Load scheduling</i> <i>Cable Sizing,</i> <i>DBs, CU's,</i> <i>Protection, etc.</i> <i>Diversity factors</i> <i>Uninterruptible power supply.</i> <i>Sockets, Twin, Single. Double Poles, Three Phase Outlets.</i> <i>Schedule of Symbols</i> <i>Design Drawings, Schematics.</i> 	6
Session Ten	Fire Alarms Systems Design, AutoCAD & Bills of Quantities	<ul style="list-style-type: none"> <i>Design Considerations,</i> <i>Design Drawings</i> <i>Bill of Quantities.</i> <i>Specifications</i> <i>Detectors, Alarm System: Sounder and beacon.</i> 	2

		<ul style="list-style-type: none"> • <i>Integration with other systems(Audio Visual).</i> 	
Session Eleven & Twelve	Lightning Protection & Earthing Installations & Bills of Quantities:	<ul style="list-style-type: none"> • <i>Lightning Risk Assessment</i> • <i>Lightning Protection & Earthing Installations:</i> • <i>Risk Management.</i> • <i>Design Methods.</i> • <i>Earthing.</i> • <i>Surge Protective Devices.</i> • <i>Air termination, Type Furse.</i> • <i>Earth rods Furse.</i> 	4
Session Thirteen	Generator Installations & Bills of Quantities	<ul style="list-style-type: none"> • <i>Sizing.</i> • <i>Design Considerations</i> • <i>Types; Canopy.</i> • <i>Load Profile.</i> • <i>Altitude considerations.</i> • <i>Future expansion considerations.</i> • <i>External fuel tank sizing.</i> 	2
Session Fourteen	Security Systems Installations & AutoCAD, & Bills of Quantities	<ul style="list-style-type: none"> • <i>Digital CCTV systems, fixed Dome camera, Network Recorder).</i> • <i>Electric Fences, Turnstiles.</i> • <i>Bollards & Traps.</i> • <i>UVIS (Under Vehicle Inspection System).</i> 	2
Session Fifteen	Access Control Installations & AutoCAD, & Bills of Quantities	<ul style="list-style-type: none"> • <i>HID Proximity cards.</i> • <i>Fingerprint reader, proximity card reader, high-quality optical sensor, magnetic door lock.</i> • <i>Electric Door Bell.</i> 	2
Sessions Sixteen & Seventeen	Solar Energy Systems Installations & Bills of Quantities	<ul style="list-style-type: none"> • <i>Solar PV, Sizing, Viability, Cost vs Payback period.</i> • <i>Bill of Quantities.</i> 	4

Session Eighteen	Lifts/Elevators Installations & Bills of Quantities	<ul style="list-style-type: none"> • <i>Sizing, Calculations, Considerations.</i> • <i>Bill of Quantities</i> 	2
Session Nineteen	Audio Visual & Public Address Systems Part 1	<ul style="list-style-type: none"> • <i>Design Considerations</i> • <i>Audio Systems</i> • <i>Public Address Systems</i> • <i>Visual Systems</i> 	2
Session Twenty	Audio Visual & Public Address Systems Part 2	<ul style="list-style-type: none"> • <i>Bill of Quantities</i> • <i>Specifications.</i> 	2
	Introduction to Structured Cabling: Design Considerations, Drawings, BoQs		
Session Twenty One and Twenty Two	Bills of Quantity and Value Engineering & Cost Estimating and Tendering Process	<ul style="list-style-type: none"> • <i>Drafting Bills of Quantities, Value Engineering, Priced & Unpriced BoQs, Cost Estimating, Tendering Process, and Tender Analysis.</i> 	4
	Project Assessments: Three Projects	<ul style="list-style-type: none"> • <i>Projects Assessments and comments</i> 	4
Total Time			48 Hours

Training Costs* (Per Individual):

1. USD 1,500.00 per individual for all sessions.

Payment Methods:

1. PayPal.
2. Bank Deposit or Mobile Payment.

Chief Trainer:

Eng. Benard Makaa, PE, MIEK, MAAK

Educational Qualifications:

- MSc. Electrical Engineering (Power Systems), JKUAT
- BSc. Electrical and Electronic Engineering, JKUAT

Professional Qualifications:

- Registered & Licensed Professional Engineer, Engineers Board of Kenya (EBK)
- Registered & Licensed Electrician(Class A-1) by Energy and Petroleum Regulatory Authority(EPRA)
- Corporate Member, The Institution of Engineers of Kenya (IEK)
- Corporate Member, The Architectural Association of Kenya (AAK)