MICHAEL MAWUENA BACCAH

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EDUCATION

Aalto University, School of Arts, Design and Architecture, Finland | Pre-Doctoral Sept 1st – Dec 15th. 2025

- Aalto WiT Programme (World in Transition Research LAB) Pre-Doctoral Programme (24 ECTS)
- Decolonial Systems for Unknown Futures; Resilience of Human Settlements in the Global Majority
- Theme: Urban Waterways Regeneration and Climate Adaptation _The Case of the Nairobi Rivers, Kenya

Kwame Nkrumah University of Science and Technology | Master of Architecture Jan. 2023 – Aug. 2024

- Thesis: "Exploring the potential of biomimicry for STEAM Living-Learning Communities in Ghana: The case of Kyebi. Design of a Living-Learning Community STEAM Hub, Kyebi" 2024

Kwame Nkrumah University of Science and Technology | BSc. in Architecture Sep. 2018 – Aug. 2022

- Dissertation: "The Relevance Of Internship To Architectural Pedagogy From The Student's Point Of View: The Case of KNUST" 2022
- Summa cum laude graduate/First Class Honors

CERTIFICATES & PROGRAMS

KNUST/Karlsruher Institut fur Technologie/UNESCO | RENABUA Workshop 1st Sept. – 23rd Sept. 2025

- International Practical Hands-on Workshop Reinterpretation of Natural Building Materials

Aalto University-KNUST | International Practical Hands-on Workshop 3rd Feb. 2025 – 14th March. 2025

- Kumasi Trees: The Project of the Heart

KNUST, Department of Architecture | TCC-CIMET | SCiM Lab Nov. 2024

- Shells of Elegance | Workshop on Spatial Intelligence and Emotional spaces

UofT Daniels-KNUST Summer School | Exchange Program Aug. 2022 – Oct. 2022

- Design of Resilient Communities

Frankfurt University/KNUST Aug. 2022

- Inclusive Urban Design Workshop

Online Certificate Courses

- Johns Hopkins University | Transportation, Sustainable Buildings, Green Construction Nov. 2023
- Columbia University | The Age of Sustainable Development Feb. 2024
- University of Toronto | The City and You: Find Your Best Place Jan. 2024

RESEARCH EXPERIENCE

Field Researcher (Nairobi River Basin Project) | Aalto University — WiT LAB Oct. – Nov. 2025

- Conducted interdisciplinary fieldwork with UN-Habitat Nairobi and local institutions.
- Investigated socio-environmental risks, waterway pollution, informal settlements, and community vulnerability.
- Produced daily learning diaries documenting community engagement, river typologies, settlement morphology, and governance dynamics.
- Contributed to a resilience-focused project aimed at developing decolonial, community-informed approaches to urban river regeneration.

Exploring the potential of biomimicry for STEAM Living-Learning Communities in Ghana: The case of Kyebi| Thesis –Design of a Living-Learning Community STEAM Hub Jan. – Aug. 2024

- Collected and analyzed qualitative and quantitative data to inform design strategies and a thesis report.
- Conducted a State of the Community report on Kyebi, gathering comprehensive data on its physical infrastructure, ecology, socio-economic conditions, education system, and natural environment.
- Designed a sustainable Living-Learning Community STEAM Hub using biomimicry principles, emphasizing accessibility and community engagement.

Making Manhyia-Kumasi a Sustainable Circular City | Urban Study Feb. – Jun. 2023

- Collaborated with stakeholders from KNUST and Aalto University, Finland, on a sustainable master plan.
- Researched on infrastructure, public spaces, and socio-economic factors to inform design proposals.

The Relevance Of Internship To Architectural Pedagogy From The Student's Point Of View | Dissertation 2022

- Researched the impact of internships on architectural education, focusing on student perspectives.
- Proposed recommendations to enhance internship programs for students.

CONFERENCE PAPERS & PUBLICATIONS

- Leveraging Interactive Digital Mapping to Address Documentation Gaps in Nairobi's River Regeneration Efforts – *In Progress (Aalto University Publication Series)*
- Enhancing Resilient Urban Infrastructure through Biomimicry: A Collaborative Approach among Architects and Engineers in Ghana– *(Advanced International Journal for Research _ AIJFR)*
- Biomimicry-Inspired Housing Models for Resilient Communities in Peri-Urban Ghana– *Accepted (International Conference For Sustainable Construction In Built Environment/ ICSCBE Walter Sisulu University)*

PRESENTATIONS & WORKSHOPS

- Field presentations delivered in Nairobi during Aalto WiT Programme.
- Presenter, Shells of Elegance — Spatial Intelligence and Emotional Spaces Workshop.
- Contributor, Digital Twinning in African Communities Conference Planning Committee.

PROFESSIONAL EXPERIENCE

Department of Architecture (KNUST) | Research/Teaching Assistant Oct. 2024 – Oct. 2025

- Assisted in developing studio programs and Course-works for the 2025/2026 academic year
- Assisted in the Planning and Execution of a Yilo Krobo Peri-Urban Study for the 3rd Year Arch. Class
- Helped Students by Reviewing and Guiding in the Dissertation and Thesis Research and Report Writing.
- Guided the third-year class in developing an interactive heritage map for KNUST and served as the drone pilot.
- Organized and led workshops, including on spatial intelligence and digital twinning in Nov 2024

Spaysis Architecture, Planning & Engineering | Junior Architect Oct. 2023 – Present

- Conducted Situational and Site analysis and feasibility studies for urban development projects.
- Developed 3D models and visualizations to communicate design concepts to clients and stakeholders.
- Designed and prepared architectural drawings, including site plans, floor plans, elevations, and sections.
- Collaborated with engineers, landscape architects, and other consultants to coordinate design.

Sayarch + Partners | Architecture and Planning | Intern Oct. 2021 – Jul. 2023

- Specialized in mid/high rise residential and mixed-use design development.
- Create detailed technical drawings, including floor plans, elevations, and construction details.
- Going for regular site studies and construction inspections.

PERSONAL PROJECTS

Kantes AI | AI-Powered Text-to-BIM & Construction Automation | https://www.kantes.com/ 2025 - Present

- Explored the capabilities of an AI-driven platform designed to convert natural-language architectural descriptions into BIM models, 3D visualizations, and construction drawings.
- Contributed user feedback on architectural workflows, automation accuracy, and interface usability during the platform's conceptual testing phase.
- Evaluated key features including text-to-BIM model generation, construction document automation, and export compatibility with tools such as Revit, AutoCAD, ArchiCAD, and SketchUp.
- Assessed the platform's potential for improving efficiency in early-stage design, visualization, and drafting

VOLUNTARY AND EXTRA-CURRICULUM ACTIVITIES

- **Project Architect** – Curating in the Wake of the Sea: Reimagining the Keta Library as a Site of Eve Cultural and Ecological Knowledge | Academic Research, University of North Carolina, Chapel Hill 2025
- **Leadership Roles** – Making Manhyia-Kumasi a Sustainable Circular City | Urban Study 2023
- Inclusive Urban Design Workshop | Inclusive interventions in Student Hostels | KNUST 2022

AWARDS + ACHIEVEMENTS

Erasmus+ Global Mobility grant | Erasmus+ KA171 Global Mobility initiative. September. 2025

- Grant awarded for trip and study at Aalto University, Finland

Valedictorian | Dept. of Architecture Nov. 2022

- Graduating student with the highest CWA for the class of 2022, BSc. Architecture, KNUST

TECHNICAL SKILLS

CAD	Visualization	Post-Process	Physical	Research Tools	Coding Languages (Basics)
• Revit	• Lumion	• Adobe Photoshop	• Sketching	• Word, PowerPoint	• C#, python, .NET
• ArcGIS	• 3ds Max	• Adobe InDesign	• Model Making	• Microsoft Excel	• React
• Sketchup	• VRay	• Adobe Illustrator	• Drone Piloting	• R, SPSS	• Next Js