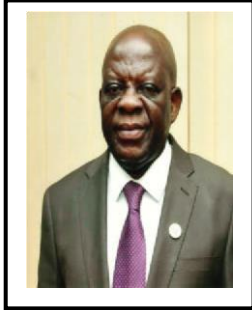


## CURRICULUM VITAE

**Name:** Prof. Joshua Ayarkwa

### Department:

	<b>Office Address:</b>	Department of Construction Technology and Management, KNUST
	<b>Email:</b>	jayarkwa.cap@knust.edu.gh ayarkwajosh@yahoo.com
	<b>Telephone/Mobile:</b>	0246010870
	<b>Personal Website/Blog:</b>	joshuaayarkwa.com

### Qualifications (Degree/Education) with dates:

<b>Doctor of Philosophy</b> , Timber Engineering, Nagoya University, Nagoya, Japan. April 1998 – March 2001
<b>Master of Philosophy</b> , Wood Science, Kwame Nkrumah University of Science and Technology, KNUST, Kumasi, Ghana. September 1992 - August 1994
<b>Postgraduate Certificate</b> , Wood Technology / Wood Research, DSE, Germany. November 1990 - December 1991
<b>Bachelor of Science</b> , Building Technology, Kwame Nkrumah University of Science and Technology, KNUST, Kumasi, Ghana. September 1980 - August 1985

### Institutions of Study with dates:

Nagoya University, Nagoya, Japan. April 1998 – March 2001
Kwame Nkrumah University of Science and Technology, KNUST, Kumasi, Ghana. September 1992 - August 1994
DSE, Germany. November 1990 - December 1991
Kwame Nkrumah University of Science and Technology, KNUST, Kumasi, Ghana. September 1980 - August 1985

### Area of Specialty:

Building Technology
Timber Engineering

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**Research Interest (Where Applicable):**

Procurement Management
Sustainable Construction
Timber Properties and Utilization
Construction Business Relationship
Value for Money Analysis
Lean Construction
Dampness in Buildings
Non-Destructive Wood Testing

**Area of Interest (Where Applicable):**

Building Technology
Construction Technology and Management

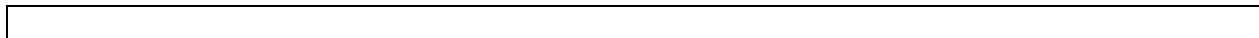
**Professional/Teaching Experience (with dates):**

MPM 558 Procurement Operations Management and Governance	2014- Present
BT 559 Research Methods	2004- Present
BT 361 Research Methods	2002-2004
BT 351 Materials and Construction	2002-2004
BT 251 Materials and Construction	2002-2005
BT 154 Theory of Structures 1	2002-2005
BT 153 Strength of Materials 1	2004-2018
BT 253 Strength of Materials 2	2002-Present
BT 254 Theory of Structures 2	2002-2005
BT 154 Statics of Rigid Bodies	2009-2018
BT 253 Timber Construction Technology	2002-Present
BT 159 Laboratory and Workshop Practice 1	2002-2005
BT 160 Laboratory and Workshop Practice 2	2002-2005

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**Positions held (with dates):**

Sept. 24, 2018 – Sept. 29, 2018	<b>Visiting Professor</b> , Linnaeus University, Sweden
August 2016- 2019	<b>Provost</b> , College of Art and Built Environment, KNUST
June 2015- July 2016	<b>Deputy Director</b> , Institute of Distance Learning, KNUST
Dec. 2014- May 2015	<b>Ag. Deputy Director</b> , Institute of Distance Learning, KNUST
August 2012	<b>Professor</b> of Building Technology
Aug. 2009- Dec. 2014	<b>Head of Department</b> of Building Technology, KNUST
2009-2010	<b>Vice-Dean</b> , Faculty of Architecture & Building Technology, KNUST
August 2005- March 2009	<b>District Chief Executive (DCE)</b> , Ejura-Sekyedumasi District, Ashanti Region
Oct. 2005	Appointed <b>Dean</b> , Faculty of Architecture and Building Technology, KNUST (Left for National Assignment)
Jan. 2005 - Aug. 2005	<b>Dean</b> , Faculty of Architecture and Building Technology, KNUST
2002	<b>Associate Professor (Temporarily as Senior Lecturer)</b> , Building Technology, KNUST
1997-2002	<b>Senior Research Scientist</b> Timber Engineering and Mechanical Processing Division Council for Scientific and Industrial Research (CSIR)- Forestry Research Institute of Ghana (FORIG), Ghana
Oct. 1992 – Sept. 1997	<b>Research Officer</b> Timber Engineering and Mechanical Processing, Council for Scientific & Industrial Research (CSIR)- Forestry Research Institute of Ghana (FORIG), Kumasi.
Oct. 1987 – Sept. 1992	<b>Assistant Research Officer</b> Council for Scientific & Industrial Research (CSIR)- Forestry Research Institute of Ghana (FORIG), Kumasi.



## Honours & Awards:

Doctor of Business Administration (DBA) Specializing in Procurement Management (Honoris Causa), Commonwealth University

Japanese Government Monbusho Scholarship – 3<sup>1</sup>/<sub>2</sub> years (October 1997 – March 2001)

German Foundation for International Development (DSE) Scholarship – 13 months (October 1990 – November 1991)

Ghana Cocoa Marketing Board Scholarship – 5 years (1973-1978)

## Achievements:

As Acting Director and Deputy Director of the Institute of Distance Learning (IDL) IDL is currently one of the largest Colleges of the University, with student population of over 8000 and hosting over 30 Postgraduate and Undergraduate programmes. As Deputy Director of IDL and in charge of Academic Programmes and Learning Centres, I had many opportunities to make great impacts and contributions to the transformation of the Institute. I acted as Director on many occasions and situations, and successfully steered the affairs of the Institute.

I was Chairman of a committee which developed Break-even points and E-facilitation allowances for all programmes run at IDL, and I was very instrumental in the preparation of Financial Efficiency Analysis (Cost-Benefit Analysis) for all programmes run at IDL. This

As Deputy Director in charge of Academic Programmes, I worked hard to ensure the implementation of E-Learning, synchronization of Timetables for all programmes run by IDL. We consequently abolished printing of hard copies of course materials and ensured placement of soft copies on LMS, which enabled savings of about **GH¢3 million** in 2014/2015 academic year.

I initiated revision of Thesis Seminars, Thesis Supervision and Conference Marking Policies of IDL, which are expected to appreciably improve quality of Thesis. I also restructured IDL Facilitators' Workshops to ensure financial efficiency.

Notwithstanding the about 80% average increase in allowances for IDL activities, our financial efficiency and expenditure control drives were estimated to have saved about **GH¢12 million** in 2015.

I worked very hard to sanitize the conduct of examinations at IDL, ensuring efficiency and quality improvement through pragmatic reforms such as conducting Examinations in 3 weekends instead of 5 weekends, and reducing the number of invigilators and cost of transportation and night subsistence allowances. Savings of at least **GH¢804,000.00** was estimated per academic year.

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Through effective fee collection strategies adopted, total revenue in 2015 increased by about 20% (equivalent to about **GH¢6.5 million**), notwithstanding the current dwindling enrolment and the difficult economic situation in Ghana.

From September to December 2015, I initiated a re-engagement with Vodafone Ghana on its service performance and billing inconsistencies, which saved IDL **GH¢830,548.00** in bill readjustments.

I chaired the Committee that proposed Weekdays (Off-campus) programmes at the Accra City Campus to maximize use of the facilities, a Committee to start regular Short Courses and CPDs at IDL, and a Committee to introduce a Department of Educational Innovation in Science and Technology in the College of Art and Built Environment to host some new IDL education programmes. These interventions were expected to boost IDL activities and increase enrolment and revenue generation.

I worked very hard to improve IDL relations with academic Departments through dialogue and effective communication, resulting in co-operation and improved delivery.

I was one of the key players of the reforms at IDL which led to the birth of the NEW IDL, having been a member of the current and previous IDL Management Boards, the Anomabu Stakeholders' Workshop, and the Adimado's Committee on the Way Forward for IDL. I was at the forefront of the drafting of IDL Policy Document. As current Deputy Director and in charge of Academic Programmes, I was at the forefront of the implementation of structural reforms and reforms which seek to achieve financial efficiency and eliminate abuses in the IDL system.

As Head of the Department of Building Technology

As Head of Building Technology from 1st August 2009 to December 2014 (close to 6 years), some of my significant achievements which transformed the Department include:

Partial Review of Undergraduate Programmes

After the Department had run the current two undergraduate programmes for 4 years, a partial review was conducted in 2012 to incorporate required changes to improve the quality of the programmes.

Transformation of Masters Programmes

At the time of taking over as Head of Department in 2009, enrolment into existing MSc Construction Management and MPhil Building Technology programmes (the only two masters programmes run in the Department at the time) was very low. There was high attrition rate in both programmes. I organized a review of the MSc Construction Management programme to run in 3 semesters on week-ends in Accra and Kumasi centres in 2012/2013. Enrolment has since shot up to an average of about 60 per academic year. Currently, the Department of Building Technology can boast of tremendous improvement in enrolment and graduation of postgraduate students.

I spearheaded the introduction and accreditation of the underlisted new programmes which also run on weekends in Accra and Kumasi from the 2011/2012 academic year.

- MSc Procurement Management
- MPhil Procurement Management
- MPhil Construction Management
- MSc Project Management (running in 2015/2016 academic year)

Introduction of new PhD Programme in Construction Management and Re-accreditation of PhD Building Technology

I spearheaded the introduction and accreditation of a new PhD programme in Construction Management in 2012. The existing PhD Building Technology programme was also reaccredited in 2012. Altogether, eight (8) accredited postgraduate programmes are running at the Department of Building Technology through my leadership.

Increase in Enrolment

At the end of my tenure, the Department had grown to an unprecedented level. At the undergraduate level, the regular student population was 645, including 318 in Construction

Technology and Management and 327 in Quantity Surveying and Construction Economics. At the IDL level, there were 825 students in the third and final years, and about 500 students had been selected to pursue bridging programme leading to the 4 semester Top-Up programme. At the Postgraduate level, student population stood at 275, including 247 MSc, 12 MPhil and 16 PhD students.

Enhancement of Teaching and Learning

As Head of Department, I worked to enhance teaching and learning in the Department. In this direction, the following equipment and facilities were procured to enhance teaching and learning using internally generated funds.

- LCDs for teaching
- Laptops for teaching
- PA Systems for teaching
- Samsung Galaxy Tablets for all Lecturers
- Laptops for all Lecturers
- HP Printers for all Lecturers

Renovation/Rehabilitation of Offices

In early 2014, the Department's offices, which had been left for many years without renovation, were face-lifted. The General office, Computer Laboratory and the Head of Department's office were refurbished to befit the status of a growing Department. New sets of furniture were provided for the computer room to be used for seminars and as a classroom for MSc programmes. A project to progressively refurbish offices of all staff with air conditioners, executive desks, swivel chairs, 2 visitor's chairs each, book shelves and visitor's sofa was

initiated. Air conditioners were provided in the MSc Classrooms and Seminar room in the Postgraduate Block of the College and also in LT1 and LT2 for undergraduate students.

#### Preparation of Department Brochure and CD

A Building Technology Department brochure containing information on activities of the Department and a CD containing brief information on the Department (copies available for visitors and staff) was developed through my initiative during my tenure of office.

#### Department Website

I established a Department Website containing information on Staff, publication of staff members, all current undergraduate and postgraduate programmes, as well as new and upcoming events, and I appointed a Webmaster who constantly updated the website.

#### Reviving the Ghana Institute of Construction (GIOC)

Under my leadership as Head of Department, the Ghana Institute of Construction (GIOC) which had been defunct for 20 years, was revived and re-launched and is currently hosted by the BT Department. All lecturers of the Department are currently members of the GIOC. Students' Chapters have also been established in most of the Polytechnics with headquarters at the KNUST.

#### Establishment of the Pioneers Research Fund

During my tenure of office as Head of Department, a Fund to support research, the "Pioneers Research Fund", was established in 2013 by pioneer students of our MSc Construction

Management programme. At the time of leaving the office, the Fund had close to GH¢100,000.00 in investments. The objective was to provide funds for research in the Department.

#### Improvement in Research and Publication

During my tenure as HOD, there was a remarkable improvement in research and publication in the Department. From 8 papers in 2010, the Department's publications increased to 29 in 2011, 46 in 2012, 47 in 2013 and 46 in 2014. The Department is currently one of the leading Departments in

KNUST with respect to staff publication ratio (See 2013 to 2015 Quality Assurance Bulletins of KNUST).

#### Mentorship of Young Lecturers in the Department

During my tenure of office, a plan to establish a sustainable succession plan for the Department was initiated. Smart students were sourced and trained to replace aging and retiring ones. Currently, Dr. Kofi Agyekum, Dr. Alex Acheampong and Dr. Barbara Simons who have completed their PhD programmes, and Mr. Godwin Acquah (about to defend his Thesis), are expected to join the Department and teach Construction Materials, Concrete Technology, Structures and Building Services respectively. Other young lecturers who graduated from the

Department and have already been mentored, are currently serving the Department including Dr. De-Graft Owusu-Manu (who won the BEST UP-COMING YOUNG RESEARCHER in 2013) and Dr. Emmanuel Adinyira (who won the 3RD BEST UP-COMING YOUNG RESEARCHER in 2013). A member of my research team, Dr. Christian Koranteng, also won the BEST RESEARCHER in KNUST in 2014/2015.

#### Improvement in Staff Strength

At the time of leaving office as HOD, the Department had the total teaching staff strength of fifteen (15) Lecturers comprising the following:

- Professors - 2
- Associate Professor - 1
- Senior Lecturers - 7
- Lecturers - 4 and
- Assistant Lecturer - 1

#### Proposed BT Postgraduate Block Construction

At the time of leaving the Department of Building Technology, the working drawings and BOQs had been produced and site secured for the construction of a proposed Postgraduate block for Building Technology from IGF to meet the needs of a growing postgraduate Department.

#### **Associations/Affiliations (*Contribution and Current Position*):**

Fellow, Ghana Institute of Construction (FGIOC) - Membership No. C20140001 (1997; 2004)

Member, Ghana Institution of Surveyors (MGhIS) - Membership No. 1022 (2010)

Member, Ghana Institution of Foresters (MGIF) - (1995)

Member, International Society for Development and Sustainability (ISDS): Membership No. M140524 (2014)

Incorporate Member, Chartered Institute of Building (ICIQB) - (2004)

Member, American Concrete Institute (MACI) - Membership No. 01259798 (2013)

Member, International Building Performance Simulation Association (IBPSA) – England, Membership No. 733

Member, Emerald Literati Network



## Publications (or Articles):

### Books

Adjarko, H., Ayarkwa, J. and Agyekum, K. (2016), Incorporating Environmental Sustainability Issues into Construction. LAP Lambert Academic Publishing, 136 p. ISBN-10: 3659854798 ISBN-13: 978-3-659-85479-8.

Agyekum, K., Ayarkwa, J. and Adinyira, E (2012), Minimizing Materials Wastage at the Construction Stage of a Project: A Lean Construction Approach. Lambert Academic Publishing. ISBN-10: 3659158941, ISBN-13: 978-3659158940. 208p.

Ayarkwa, J. and A.K. Danso (2011), Strength of Materials. Classic Graphics Print, Kumasi. ISBN: 2-934872-29-9

Ayarkwa, J. (2009), Timber Construction Technology for Technical, Polytechnic and University Students. Classic Graphics Print, Kumasi. ISBN: 4526944710028

Ayarkwa, J. (2009), Timber Technology for Researchers, Polytechnics and University Students. Classic Graphics Print, Kumasi. ISBN: 4526944710028

### Chapters in Books

Ayarkwa, J. (2012) Antrocaryon micraster. In: Louppe, D., Oteng-Amoako, A.A. & Brink, M. Editors. Plant Resources of Tropical Africa Databank for Commodity Group 2. Timbers 2. PROTA Foundation / Backhuys Publishers / CTA, Wageningen, Netherlands.

Ayarkwa, J. (2012) Daniellia oblonga. In: Louppe, D., Oteng-Amoako, A.A. & Brink, M. Editors. Plant Resources of Tropical Africa Databank for Commodity Group 2. Timbers 2. PROTA Foundation / Backhuys Publishers / CTA, Wageningen, Netherlands.

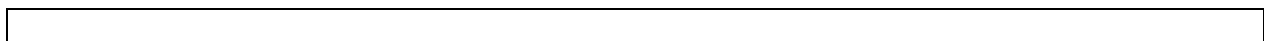
Ayarkwa, J. and Owusu, F.W. (2008) Cylicodiscus gabunensis Harms. In: Louppe, D., Oteng-Amoako, A.A. & Brink, M. Editors. Plant Resources of Tropical Africa 7(1). Timbers 1. PROTA Foundation / Backhuys Publishers / CTA, Wageningen, Netherlands. 179-181.

Agyeman, V.K., Ayarkwa, J. Owusu, F.W., Boakye-Dapaah, A.S.K., Addae-Mensah, A., Appiah, S.K., Oteng Amoako A., Adam A.R. and Pattie, D. (2003) Technological and Investment Profiles of some Lesser-used Timbers Species in Ghana. Publication of the ITTO, FORIG, Ghana Forestry Commission. Print Engineering Press. ISBN 9988-7943-0-4

### Refereed Journal Papers

De-Graft Joe Opoku, **Joshua Ayarkwa**, and Kofi Agyekum, (2019), Barriers to environmental sustainability of construction projects, *Smart and Sustainable Built Environment*, <https://doi.org/10.1108/SASBE-08-2018-0040>

Mensah, S., **Ayarkwa, J.** and Nani, G. (2018). A Theoretical Framework for Conceptualizing Contractors' adaptation to Environmentally Sustainable Construction, *International Journal of Construction Management*, Vol. 1, Issue 1, pp. 32-56. DOI: 10.1080/15623599.2018.1484860



Addy, M.N., Adinyira, E., <b>Ayarkwa, J.</b> (2018). Antecedents of Building Information Modelling Adoption among Quantity Surveyors in Ghana: An Application of a Technology Acceptance Model, <i>Journal of Engineering Design and Technology</i> , Vol. 16, Issue 4, pp. 313326
Zoya, E. Kpamma, Theophilus Adjei-Kumi, <b>Joshua Ayarkwa</b> , and Emmanuel Adinyira, (2018). Choosing by advantages incorporated framework for a user-involved design process, <i>Architectural Engineering and Design Management</i> , Vol. 14, Issue 3, pp. 194-217.
Mensah, S., <b>Ayarkwa, J.</b> and Nani, G. (2017). Understanding Environmentally Sustainable Construction Practices of Contractors, <i>Journal of Built Environment</i> , Vol. 1, Issue 1, pp. 32-56.
Boateng, E., Danso, A.K. and <b>Ayarkwa, J.</b> (2017). Modelling the Bond Strength of Reinforced Concrete with Oil Polluted Rebars. <i>International Journal of Construction Engineering and Management</i> , 6(3): 94-102.
Kpamma, Z.E., Adjei-Kumi, T., <b>Ayarkwa, J.</b> and Adinyira, E. (2017). Participatory design, wicked problems, choosing by advantages. <i>Engineering, Construction and Architectural Management</i> , 24 (2): 289-307.
Addy, M.N., Adinyira, E. and <b>Ayarkwa, J.</b> (2017). Identifying and Weighting Indicators of Building Energy Efficiency Assessment in Ghana. <i>Energy Procedia</i> , 134 (2017): 161-170.
Addy, M.N., Adinyira, E. and <b>Ayarkwa, J.</b> (2017). Developing a Building Energy Assessment Tool for Office Buildings in Ghana: Delphic Consultation Approach. <i>Energy Procedia</i> , 111(2017): 629-638.
Agyekum, K., <b>Ayarkwa, J.</b> and Opoku, D.J. (2017). Fire Safety Preparedness in the Central Business District of Kumasi, Ghana. <i>Asian Journal of Science and Technology</i> , 8 (1): 41694175.
Zoya, E. Kpamma, Theophilus Adjei-Kumi, <b>Joshua Ayarkwa</b> , and Emmanuel Adinyira, (2017). Choosing by advantages incorporated framework for a user-involved design process, <i>Architectural Engineering and Design Management</i> , DOI: 10.1080/17452007.2017.1341831
Mensah, S., <b>Ayarkwa, J.</b> and Nani, G. (2017). Understanding Environmentally Sustainable Construction Practices of Contractors, <i>Journal of Built Environment</i> , Vol. 1, Issue 1, pp. 32-56.
Ofori-Kuragu, J.K., Owusu-Manu, D. and <b>Ayarkwa, J.</b> (2016). The Case for the Construction Industry Council, Ghana. <i>Journal of Construction in Developing Countries</i> , 21 (2):131–149.
Acheampong, A., Kankam, C.K. and <b>Ayarkwa, J.</b> (2016). Shear Behaviour of Palm Kernel Shell Reinforced Concrete Beams Without Shear Reinforcement: Influence of Beam Depth and Tension Steel. <i>Journal of Civil Engineering and Construction Technology</i> , 7 (2): 8-19.
Acheampong, A., Atuahene, B. T. and <b>Ayarkwa, J.</b> (2016). Occupants' satisfaction with Burnt Clay Brick (BCB) buildings in Ghana. <i>Int. J. Environ. Sci. Toxic. Res.</i> 4(8): 140-149.
Agyekum, K., <b>Ayarkwa, J.</b> and Amoah, P. (2016). Built and forgotten: Unveiling the defects associated with the Ghana Cocoa Board (COCOBOD) Jubilee house in Kumasi. <i>Journal of Building Performance</i> , 7 (1):23-34.
Agyekum, K., <b>Ayarkwa, J.</b> and Amoah, P. (2016). Post Occupancy Evaluation of Postgraduate Students' Hostel Facilities and Services. <i>Journal of Building Performance</i> , 7 (1): 97-104.
Agyekum, K., <b>Ayarkwa, J.</b> and Amoah, P. (2016). Post Occupancy Evaluation of Postgraduate Students' Hostel Facilities and Services. <i>Journal of Building Performance</i> , 7 (1): 97-104.

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Agyekum, K., **Ayarkwa, J.** and De-Graft J.O. (2016). Fire Safety Awareness and Management in Multi-Storey Students' Hostels. *Asian Journal of Applied Sciences*, 4 (2): 329-338.

Adjarko, H., Agyekum, K., **Ayarkwa, J.** and Amoah, P. (2016). Implementation of Environmentally Sustainable Construction Principles (ESCPs) in the Ghanaian Construction Industry. *International Journal of Engineering and Management Research*, 6 (2): 585-593.

Appiagyei, A.A., **Ayarkwa, J.** and Agyekum, K. (2016). Environmental Considerations in Procurement Decisions: A Literature Review. *Sustainability in Environment*, 1(1): 40-53.

Agyekum, K., **Ayarkwa, J.** and Amoah, P. (2016). Challenges to Fire Safety Management in Multi-Storey Students' Hostels. *Modern Management Science and Engineering*, 4 (1): 53-61.

Opoku, D., **Ayarkwa, J.** and Agyekum, K. (2016). Factors Inhibiting the Use of Bamboo in Building Construction in Ghana: Perceptions of Construction Professionals. *Materials Science and Applications*, Vol. 7 No. 1, pp. 83-88. ISSN Print: 2153-117X; ISSN Online: 2153-1188; Doi: <http://dx.doi.org/10.4236/msa.2016.72008>.

Agyekum, K., **Ayarkwa, J.** and Adjarko, H. (2015). Perceptions of Quantity Surveyors on Challenges to and Benefits of Incorporating ICT in Quantity Surveying Practice in Ghana. *Asian Engineering Review*, Vol 2, No. 3, 30-36. ISSN: 2409-6725.

Simons, B., Koranteng, C., **Ayarkwa, J.**, (2015). Practical Energy Savings Techniques for Multi-storey Office Buildings in Accra, Ghana. *International Journal of Engineering and Computer science*, Vol 4, No. 2, 15262-15273. ISSN: 2319-7242, DOI: <http://dx.doi.org/10.18535/ijecs/v4i12.30>

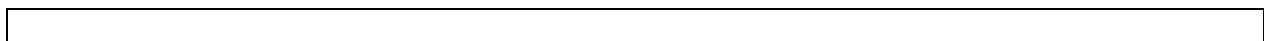
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Kpamma, Z.E., Adinyira, E., **Ayarkwa, J.** and Adjei-Kumi, T. (2015). Application of the CBA Decision System to Manage User Preferences in the Design Process. *J. Prof. Issues Eng. Educ. Pract.*, ASCE 05015004. ISSN (print): 1052-3928 ISSN (online): 1943-5541 [http://dx.doi.org/10.1061/\(asce\)ei.1943-5541.0000258](http://dx.doi.org/10.1061/(asce)ei.1943-5541.0000258)

Kpamma, Z.E., Adjei-Kumi, T., **Ayarkwa, J.** and Adinyira, E. (2015). An exploration of the choosing by advantages decision system as a user engagement tool in participatory design. *Architectural Engineering and Design Management*, Vol. 12, No. 1, 51-66, DOI: 10.1080/17452007.2015.1095710. ISSN 1745-2007 (Print) 1752-7589 (Online) <http://dx.doi.org/10.1080/17452007.2015.1095710>

Mensah, S., **Ayarkwa, J.**, and Nani, G. (2015). Towards enabling construction organizations' adaptation to environmentally sustainable construction in developing countries. *Advances in Social Sciences Research Journal*, Vol. 2, No. 10, 84-100. ISSN 2055-0288.

Orgen, N.K., **Ayarkwa, J.**, Ahadzie, D.K. and Badu, E. (2015). Effect of Construction Business Relationship Situation on Design Service Delivery in Ghana. *Engineering Management Research*, Vol.4, No. 1, pp. 13-29. ISSN 1927-7318 (Print) ISSN 1927-7326 (Online). <http://dx.doi.org/10.5539/emr.v4n1p13>



<p>Orgen, N.K., Ahadzie, D.K., <b>Ayarkwa, J.</b>, and Badu, E. (2015). The Nature of Supply Chain and Business Relationship in Construction Design Service Delivery in Ghana. <i>Journal of Civil Engineering and Architecture Research</i>, Vol. 2, No. 6, pp. 708-723. Print ISSN: 2333-911X Online ISSN: 2333-9128</p>
<p>Somiah, M.K., <b>Ayarkwa, J.</b> and Agyekum, K. (2015). Assessing House Owners' Level of Awareness on the National Building Regulations, L.I. 1630, in the Sekondi Takoradi Metropolis. <i>African Journal of Applied Research</i>, Vol. 1, No. 1, pp. 170-178. ISSN: 24087920.</p>
<p>Opoku, D., Hackman, J.K., <b>Ayarkwa, J.</b> and Agyekum, K. (2015). Assessing areas and trends of bamboo usage in building construction in Ghana. <i>African Journal of Applied Research</i>, Vol. 1, No. 1, pp. 46-57. ISSN: 2408-7920.</p>
<p>Simons, B., Koranteng, C., <b>Ayarkwa, J.</b>, (2015). Simulation-based assessment of the thermal performance of high-rise office buildings in Ghana. <i>British Journal of Applied Science and Technology</i>, Vol.8, No. 2,pp 165-179.ISSN2231-0843,<a href="http://dx.doi.org/10.9734/BJAST/2015/16700">http://dx. doi. org/10 .9734/ B JAST /2015/16700</a></p>
<p>Adinyira, E., <b>Ayarkwa, J</b> and Aidoo, I (2014). Knowledge and Usage of the Seven Basic Quality Control Tools by Producers of Precast Concrete Products in Ghana. <i>Journal of Construction Project Management and Innovation</i> Vol. 4 (2): 966-975. ISSN 2223-7852</p>
<p>Adjarko, H., Osei-Poku, G. and <b>Ayarkwa, J.</b> (2014). Challenges to the Incorporation of Environmental Sustainability Issues into Construction Procurement at the Local Government Level of Ghana. <i>International Refereed Journal of Engineering and Science</i>, Vol. 3 No. 11, pp. 42-52. e-ISSN 2319-183X p-ISSN 2319-1821</p>
<p>Agyekum, K., <b>Ayarkwa, J.</b> and Koranteng, C. (2014). A Holistic Survey of Dampness in a Six Bedroom Residential Apartment. <i>Journal of Science and Technology</i>, Vol. 34, No. 1, pp. 3045. ISSN 0855-0395. <a href="http://dx.doi.org/10.4314/just.v34i1.4">http://dx.doi.org/10.4314/just.v34i1.4</a></p>
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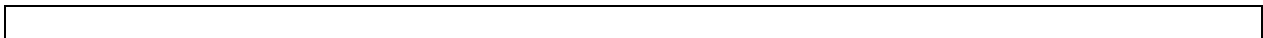
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## Research and Technical Reports

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“Industrial utilization and improved marketing of some lesser used timber species from sustainably managed forest”. July 1997.

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**Ayarkwa, J.** (1985) Performance of traditional earth houses in Ashanti: A case study of houses in the Sekyedumasi area. B.Sc. Thesis submitted to the UST.

#### Grants/Funds won with dates:

I have much experience and training in proposal writing for competitive funding for research, demonstrated in the significant successes achieved in attracting funding for the following research projects.

**ITTO Project PD 179/91** “Industrial utilization and improved marketing of some lesser -used timber species from sustainably managed forest”. **Project Amount US\$1million in 1993.**

I was co-investigator of the ITTO Project PD 179/91 “Industrial utilization and improved marketing of some lesser -used timber species from sustainably managed forest”. The Project amount of US\$1million has been the biggest so far attracted into a research institution in Ghana. The Project duration was from 1993-1996. This project acquired the state-of-the-art furniture research and testing machine and a Universal Instron Machine for testing mechanical properties of timber for the Forestry Research Institute of Ghana (FORIG) also used by students and staff of KNUST. The project raised the image of FORIG and benefitted several wood processing companies in Ghana. Co-investigator: Dr A.G. Addae-Mensah. Project Consultants: Prof. Ivan Eastin (University of Washington, Seattle, USA); Prof Jay Johnson (University of Washington, Seattle, USA); Mr. Karl Nielson Gosta (Sweden).

**AMEX/USAID Consultancy:** Base-line survey data on availability of sawmill off-cuts for setting up a finger-jointing plant in Kumasi. 1996. **Amount- US\$ 40,000.** Co-Consultants: Dr. A. Ofose-Asiedu and Mr. J.M. Nani-Nutakor.

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## Research Projects (*Current and Past Projects*):

A Framework for Capacity Building of Small and Medium Building Contractors for Lean Construction Adoption. **2016 – To date (On-going)**

Sustainability in The Construction Industry: A Ghanaian Case Study. **2019 – To date (Ongoing)**

Adopting Environmental Sustainability at the Design Stage of Projects: Barriers, Drivers and Benefits. **2019 - To date (On-going)**

Towards Sustainable Building Design in Ghana: Challenges, Drivers and Opportunities. **2019 – date (On-going)**

Sustainable Building Strategies in Ghana; Stakeholders Perspective. **2019 – To date (Ongoing)**

Sustainable Building Design Practices for Recreational Buildings. **2019 – To date (On-going)**

Exploring Green Building Practices in the Ghanaian Construction Industry. **2019 – To date (On-going)**

The nature of adversarial relationships in design service delivery in Ghana: Effects on supply chain information flow and a business relationship management proposal for improvement. **2010 – 2015 (Completed)**

Structural Properties of Lightweight Reinforced Concrete using Palm Kernel Shell Aggregates. **2011-2015 (Completed)**

Minimizing materials wastage at the construction stage of a project through the implementation of Lean Construction. **2012-2015 (Completed)**

Simulation-based Exploration of the Thermal Performance of some Multi-Storey Office Buildings in Accra, Ghana. **2012-2015 (Completed)**

Characterization of Axial Creep and Drying Shrinkage Strains in Concrete Elements in Ghana. **2010 (Completed)**

A tool for predicting the energy efficiency of buildings at the Design Stage. **2012 (Completed)**

Construction organizations' adaptation to environmentally sustainable construction in developing countries. **2015 (Completed)**

Application of a multi-criteria decision system to enhance user-involvement in design process: Towards lean design. **2015 (Completed)**

Guidelines for Building Capacity of Built Environment Consultants to Practice Environmental Sustainability at the Design Stage of Projects. **2017 (Completed)**

Integrating Environmentally Sustainable Procurement in Public Universities: A case of KNUST. **2017 (Completed)**

Benefits and Challenges of the Usage of Labour – Based Road Technology in Road Construction. **2017 (Completed)**

Procurement Practices of Intercity State Transport Corporation (ISTC) in Ghana. **2017 (Completed)**

Exploring the Readiness of Project Management Team in Sustainable Building Process in Ghana. **2017 (Completed)**

A Study of Overland Conveyors as an Alternative to Haulage Trucking in Ghana’s Mining Industry. **2017 (Completed)**

Managing Risk to Improve Customer Satisfaction in First Allied Savings and Loans Company Limited. **2017 (Completed)**

Challenges Facing Non-Governmental Organizations (NGOs) in the Effective Implementation of Strategic Plans in the Kumasi Metropolis. **2017 (Completed)**

Exploring ways of applying project management principles to construction contracts in the Dormaa West District Assembly. **2017 (Completed)**

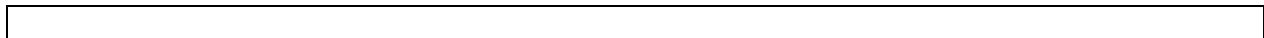
Examining the Implementation of Sustainable Procurement in Public Institutions in Ghana. **2018 (Completed)**

Addressing Environmental Sustainability in Ghana through Public Procurement. **2018 (Completed)**

Assessing the Benefits and Challenges of Community Participation in Non-Governmental Organizations’ Projects Delivery in Ghana. **2018 (Completed)**

The Impact of Total Quality Management (TQM) on completed Small Towns Water Supply Systems in the Volta Region. **2018 (Completed)**

Quality Control Standards in Television Broadcasting: A Case Study of Kwese Free Tv – Ghana. **2018 (Completed)**



Post Occupancy Evaluation of Contemporary Educational Buildings in Ghana. A Case Study of the KNUST/IDL Building at Kwabenya. **2018 (Completed)**

An Investigation into Roof Failures: Causes, Effects and Remedy. **2018 (Completed)**

Assessing Public Sector's Implementation of Sustainable Procurement in Ghana. **2018 (Completed)**

The Impact of Project Management on Sustainable Construction in Ghana. **2018 (Completed)**

Assessing the Impact of Work Environment on Employees' Productivity in Electricity Company of Ghana. **2018 (Completed)**

Assessing Sustainable Design Practices in Selected Municipal Assemblies in Ghana. **2018 (Completed)**

Assessing the effect of Procurement Planning on Service Delivery in the Kumasi Metropolitan Assembly (KMA). **2018 (Completed)**

Waste Management Practices on Construction Sites: A Case of Firms in Takoradi and Kumasi Metropolis. **2018 (Completed)**

Investigations into Modern Strategies for Housing Delivery in Ghana. **2018 (Completed)**

