



Ghana Green Building Summit 2017 Report

***October 18, 2017 Accra, Ghana
Presented by***



EMERALD PROPERTIES

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APPRECIATION

We at Emerald Properties Limited are grateful for the immense support received from all attendees, sponsors and key stakeholders who made the first ever Ghana Green Building Summit a resounding success. We would like to extend a special thank you to Harry Quartey, CEO, Emerald Properties; Sammy Amegayibor, Executive Secretary, GREDA; Kwakye Dopoah Dei, President, GREDA; Samuel Tenkorang, Treasurer, GREDA; Dr. Theresa Tufuor, Deputy Director Housing, Ministry of Works and Housing; Hon. Ibrahim Awal Mohammed, Minister of Business Development, as well as Foster Osaе Akonnor, President, Ghana Green Building Council for their support. Special recognition to the following, in no particular order, for their support in organizing of the Summit:

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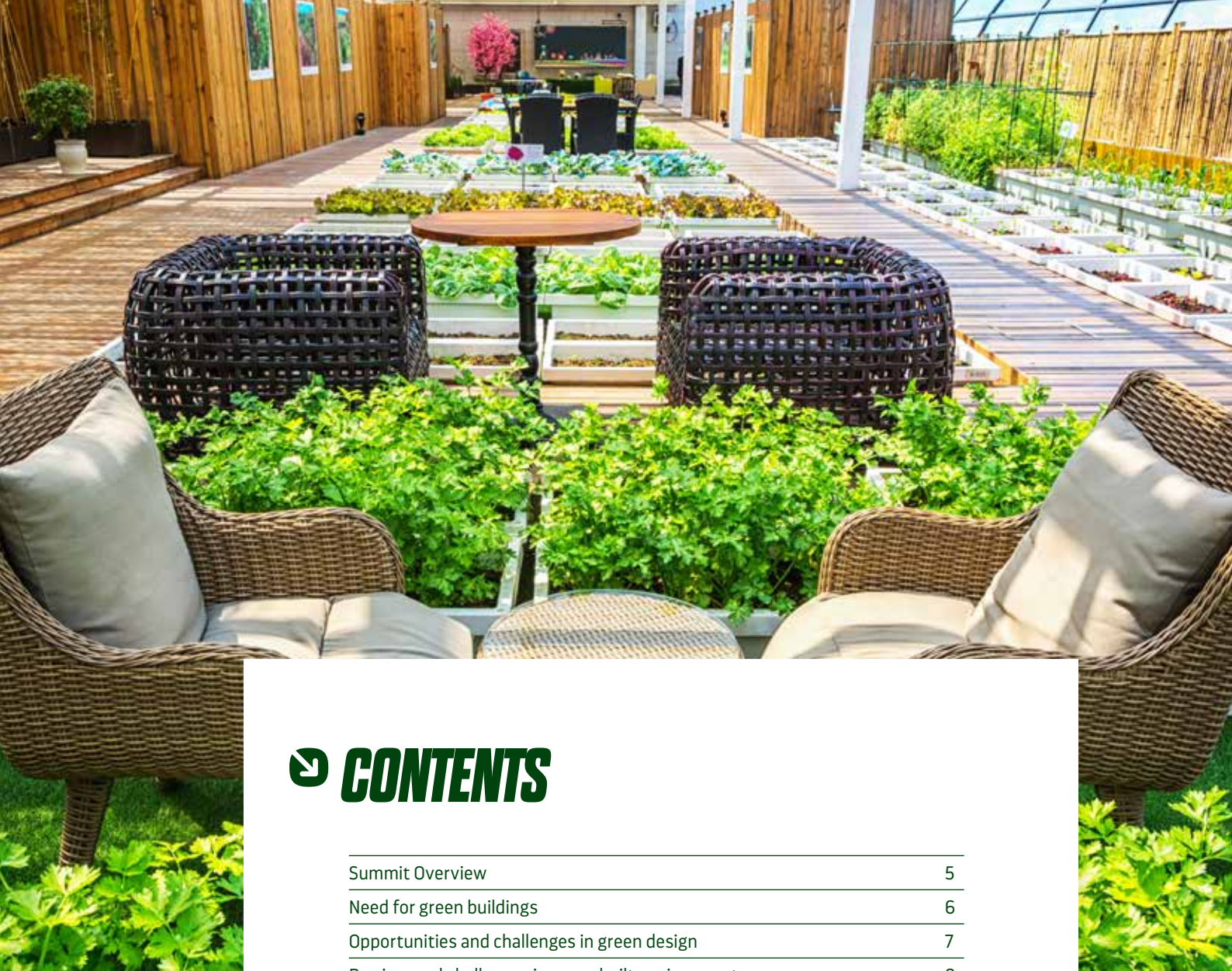
Sylvia Adobea Adaey, GHL Bank

Kojo Biney, GREDA

SUMMIT ORGANIZING TEAM

Cyril Nii Ayitey Tetteh, Team Lead

Bertha Gwumah, Coordinator



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SUMMIT OVERVIEW

The summit convened a total of one hundred and thirty four (134) key stakeholders drawn from the Ministry of Works and Housing, GREDA, Ghana Green Building Council, representatives from Ministry of Business Development Ghana Institute of Architects, Ghana Institute of Planners, International Finance Corporation, IMANI Ghana, University of Ghana Real Estate Club, National Entrepreneurship and Innovation Plan, real estate developers, real estate material suppliers, construction companies, private architects, engineers etc.

Imagine! Imagine that short sickness absences in offices can improve by about 35% with a good indoor air quality. Good indoor air quality can improve productivity by 10%. Imagine that all your sinus issues and headaches can be rid off with improvement of indoor air quality and elimination of volatile organic compounds. Well, you don't have to imagine, these are all attainable with higher adoption

The need to spark this green built conversation on the opportunities and challenges in Ghana's green built environment; sensitize key stakeholders, advocate for a national policy, highlight present and futuristic innovative solutions and create awareness on certification requirements is what inspired Emerald Properties Limited, an Accra based real estate developer to partner the Ghana Real Estate Developers Association (GREDA) and the Ghana Green Building Council in organizing the first ever Ghana Green Building Summit on October 18, 2017 at the African Regent Hotel.

To achieve the above goals, the summit offered key stakeholders an opportunity to educate participants and make recommendations that would create a conducive environment to support green building in Ghana. The sensitization took the shape of presentations, demonstrations, panel discussion and a question and answer segments.

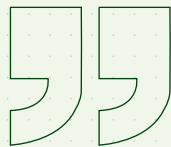
Key areas of discussion included Need for green buildings; Barriers and challenges in green built environment and policy recommendations; Efforts at promotion of green buildings in Ghana and support required; Opportunities and challenges in green design; Role and efforts of the Ministry of Works and Housing in promoting green buildings; Green Certification by International Finance Corporation (IFC) & SGS.

There was also a panel discussion with an interesting discussion topic "Affordable green buildings; is it practicable in Ghana?" Key takeaways at the end of the summit reemphasized the need for higher collaboration between key industry players and a harmonization of various country green housing initiatives into a holistic national green policy; that Metropolitan, Municipal and District Assemblies (MMDA's) should be resourced to promote the use of environmentally friendly local materials in construction; revision of national building codes to include green built technology; that the Ghana Green Building Council should be supported to promote the benefits of green building and resourced to rate/ certify buildings green, as well as a call for change in mindset of the citizenry in adoption of green built methods.





Cyril Nii Ayitey Tetteh, Business Development and Marketing Mgr, Emerald Properties



A 'green' building, according to WorldGBC, is a building that, in its design, construction or operation, reduces or eliminates negative impacts, and can create positive impact on our climate and natural environment. Green buildings preserve precious natural resources and improve our quality of life.

Need For Green Buildings

Cyril Nii Ayitey Tetteh, Business Development and Marketing Manager of Emerald Properties, lead organizers of the summit, opened the Summit by reiterating the need for Ghana to embrace green building methods.

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In as much as it is impressive to see the numerous commercial and housing developments spring up and light up the sky, the construction of these buildings impact greatly on the environment and utility consumption. An IFC Climate Investment Opportunity report provides the following statistics:

- 33% of energy, 40% of water consumed in buildings
- 20% of income of low income households goes toward utilities
- 80% of economically viable energy savings in buildings is untapped.
- 18% of current GHG emissions are building-related

Mr. Tetteh intimated that the green conversation couldn't have been sparked at a better time with increasing signals that a well-developed green built environment prevents environment degradation, relieves stress on the national power grid and also ensures long term energy savings for homeowners. The control and guidance of technical building services can save 10- 20% of a property's energy consumption which would nationally amount to the energy production of 2-3 nuclear power stations. Improved indoor air quality also reduces sinus related illnesses experienced in our homes and offices. In the near future, greenness will rank high on purchase and letting decisions of prospective property hunters.

The fact that 'the future is green' according to Mr. Tetteh could not be overemphasized hence the need to spark the green built conversation to sensitize key stakeholders and also trigger policy reform to promote green buildings.

Key Highlights - Need for Green Buildings

- *Building green lessens environment degradation.*
- *Improved indoor air quality also reduces sinus related illnesses experienced in our homes and offices.*
- *The control and guidance of technical building services can save 10- 20% of a property's energy consumption which would nationally amount to the energy production of 2-3 nuclear power stations.*
- *In the near future, greenness will rank high on purchase and letting decisions of prospective property hunters.*



Madam Laquaye Glover-Tay,
Senior Architect at Incept
Architectural Consult

Opportunities and Challenges In Green Design

Presented by Incept Architectural Consult

Madam Laquaye Glover-Tay, Senior Architect at Incept Architectural Consult made the presentation. For green building to have optimum functioning, it starts with a robust design. The summit thus couldn't have started with any other discussion but that of opportunities and challenges in green design.

A well designed building helps to reduce, or completely avoid depletion of critical resources like energy, water, land, and raw materials; prevent environmental degradation caused by facilities and infrastructure throughout their life cycle; and create built environments that are livable, comfortable, safe, and productive. Mad. Laquaye Glover-Tay noted that majority of construction in Ghana are not done by professionals, which results in accidents, excessive wastage etc.

Adding on green systems to already existing buildings may involve processes that might disturb the structural integrity of these structures, she further intimated. The need to therefore incorporate green methods from design stage could not be overemphasized. She then proceeded to evaluate some of the challenges and opportunities within the Ghanaian design space.

Key Highlights - Opportunities and challenges in green design

Opportunities

Greening should be done immediately, when it is still viewed as an opportunity, rather than later, when it must be done out of dire necessity

Compensate with green roofing and vertical gardens

Public sensitization to explore the options of working and building in different ways, and using techniques, materials and products with which they are unfamiliar

Challenges

Multiple entities working independently of each other until forced to work together due only to project overlaps

Forming synergistic strategies to create benefits greater than the sum of individual design decisions, by being fully integrated

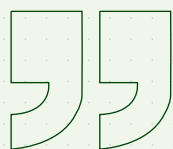
The cost of greening is perceived as expensive since environmental issues are tackled on an as-they-come basis, creating the perception that its just an additional step in building

Building footprints taking up vegetation space and ecosystems

Challenge in getting people to open up and embrace change which involves investment of their capital



Mr. Samuel Tenkorang,
treasurer of GREDA



GREDA identified broadly that, as part of country-led strategies, Ghana has inculcated its commitment to sustainability (directly and indirectly) into a plethora of national and institutional development plans, policy frameworks, strategic, investment and action plans like the Ghana Shared Growth and Development Agenda

Barriers and Challenges In The Green Built Environment

Presented By GREDA

Mr. Samuel Tenkorang, treasurer of GREDA was supported by Mr. Kojo Biney, GREDA council member to make a presentation on the barriers and challenges in Ghana's green built environment.

GREDA identified broadly that, as part of country-led strategies, Ghana has inculcated its commitment to sustainability (directly and indirectly) into a plethora of national and institutional development plans, policy frameworks, strategic, investment and action plans like the Ghana Shared Growth and Development Agenda (GSGDA); Sustainable Development Action Plan (SDAP); National Policy Framework on Climate Change amongst many.

However, the multitude and overlapping nature of some of these country-led strategies makes for a rather difficult and poor implementation, monitoring and evaluation of performance and achievement hence the minimal green built impact.

GREDA acknowledged that efforts had been made by incorporating green/sustainability development in the national housing policy (Objective.5) which is to promote orderly human settlement growth with physical and social infrastructure.

However, GREDA noted that there is still tremendous potential for the country to reduce environmental impacts, increase resource usage efficiency and promote greater health and well-being through conscientious, affordable development practices through a set of proposed action plans.

Key Highlights - GREDA Proposed Action plan

1) Community Education and Outreach

Use education as a top strategy to increase sustainable building practices through leveraging existing regional informational resources. Increase builder and consumer confidence in green development practices through education and examples

2) Incentive-based Programs

Increase sustainable practices, e.g. for single-family residential projects through incentives. Identify and publicize long-term cost savings to residents from green building practices. Develop "Green" certification standards and leverage existing programs for tiered certification/recognition of construction projects

3) City Operations

Reduce long-range maintenance and operational costs to the City. Dedicate a staff position for a sustainability coordinator to work with and increase communication between the city and residents on sustainability issues. Identify long-term cost savings from efficient City infrastructure and buildings

4) Code Requirements

Increase sustainable practices for non-single-family residential projects through building code requirements, such as charging stations (futuristic – electric car ready), waste diversion stations, dual-flush toilets, rideshare boards, on-site rain water harvesting, green roofs, and native and adaptable drought-tolerant plants. Work with state building officials to propose code adoption/application to the state building code Bodies that increase sustainable practices.



Dr. Theresa Tufuor, Deputy Director, Housing; Ministry of Housing

Keynote Address Presented by the Ministry of Works and Housing

Dr. Theresa Tufuor, Deputy Director, Housing who represented the Minister of Works and Housing delivered the key note address.

Dr. Tufuor urged housing developers and professionals in the built environment to use environmentally efficient materials in construction to protect the environment. She also called for support for training centers to be attached to the Building and Road Research Institute (BRRI) and the Department of Rural Housing (DRH) to enable them train artisans and entrepreneurs in the production and use of local building materials, as well as in cost saving construction techniques.

Dr. Tufuor further urged Metropolitan, Municipal and District Assemblies (MMDA's) to endeavor to use local building materials in the construction of their construction projects.

"We hope that through rigorous promotion of research findings and development of high quality local building materials, the cost of building and housing deficit in the country would be reduced" Dr. Tufuor intimated.

Key Highlight - Ministry of Works and Housing Address

Dr. Theresa Tufuor called for support for training centers to be attached to the Building and Road Research Institute (BRRI) and the Department of Rural Housing (DRH) to enable them train artisans and entrepreneurs in the production and use of local building materials, as well as in cost saving construction techniques.



Mr. Foster Osae Akonnor, the president of the Ghana Green Building Council (GHGBC)

Efforts at promotion of green buildings - Presented by the Ghana Green Building Council

Mr. Foster Osae Akonnor, the president of the Ghana Green Building Council (GHGBC) made the presentation on behalf of the council. He shed a bit more light on the formation and functions of the council as well as their efforts in promoting green buildings in Ghana. The GHGBC which is committed to help create sustainable buildings/communities in Ghana using energy savings, water conservation, resource management and cost-efficient techniques was officially launched on 17th August, 2011 in Accra, Ghana. The GHGBC is a member of the World Green Building Council (WGBC) family of the 92 Countries.

Ghana Green Building Council performs three (3) main functions namely Advocacy, Education/Training, Rating Tool Development/Certification.

The GHGBC identified a number of factors that has retarded its efforts at green building promotion. Mr. Akonnor noted the factors as follows: Attitudinal: Business as usual; Perception by Citizenry regarding the Cost of Green Buildings; Lack of Government Policies for Green Building Development; Cultural Change (old ways of doing things); Low interest of Citizenry for Setting up R&D units into sustainable Building Materials for Ghana.

To overcome the challenges and create an enabling environment for the GHGBC for membership of GHGBC; collaborate with Energy Commission to develop Energy Labeling Tool specific to Ghana; support the GHGBC's Emerging Status with World Green Building Council by January 2018.

Key Highlights - GHGBC efforts at promoting green buildings

Advocacy

- Seminar for Ministry of Works and Housing at the British Council, Accra
- Tree Planting @ The Bawaleshi Cluster Of Schools, East Legon, Accra

Education and Training

Green Star Assessor trainings

Rating Tool Development and Certification

Certification of the One Airport Square Building in Accra by collaborating with the South African Green Building Council



Dennis Papa Odenyi Quansah, a consultant, IFC



Benjamin Van der Auwera, GM of Certification & Business Enhancement, SGS

Green Certification

Presented by International Finance Corporation (IFC) & SGS

Dennis Papa Odenyi Quansah, a consultant with the IFC introduced and espoused the benefits of the EDGE Certification Program. For a building to be certified green, it must meet certain minimum standards in order to pass the assessors rating. The free EDGE Program is a software designed to assist developers to determine the most cost-efficient design.

To qualify for EDGE certification, a new building must achieve a 20% reduction in energy, water, and embodied energy in materials compared to a conventional building. The building must achieve reduction in each of the 3 categories. There are no tiers for EDGE certification – just the 20% standard.

Only a CERTIFIED building can prove benefits to consumers, and ensure future resale value. Similarly, only a certified building will be able to access preferential green financing or government incentives, and protect itself from future climate change regulations which are likely to penalize brown construction, as countries increase their climate ambitions.

When the minimum standards are met, IFC works with SGS, a leading inspection, verification, testing and certification company, which undertakes the assessment and subsequently issues EDGE certification. Benjamin Van der Auwera, General Manager of Certification and Business Enhancement provided a brief insight into the certification process and costs as managed by SGS Ghana.

In Ghana, IFC invested \$26 million in loan to the Radisson Blu Hotel – The Exchange alongside CDC and Actis. The hotel was sponsored by Carlson Rezidor, designed by HOK architects, and built by Bouygues Construction, which have all signed on as EDGE Champions and are promoting the EDGE standard in their investments.

Key Highlights - EDGE Green Certification

- Perception: building green costs as much as 30% extra
- Reality: Costs are in 1-3% range, with payback in less than 2 years
- Costs are minimized by incorporating green design into early planning
- Only certified buildings can prove benefits to consumers, ensure resale value, access financing or government incentives, or protect from future climate regulations.
- Increase building marketability and asset value
- Green attracts tenants for higher rents and sales prices
- Building occupants are looking for lowered operating costs
- Risk mitigation vis-a-vis increased focus on climate regulation



Panel Discussion: Affordable green buildings; is it practicable in Ghana?

Composition of Panel

Sammy Amegayibor – Executive Sec. GREDA

Harry Quartey – CEO, Emerald Properties

Arc. Esinam Akyea Djamson – CEO, Cornerstone Properties

Dr. Theresa Tufuor - Dep. Director Housing, Ministry of works and Housing

Cornelius Nii Adjei Odai – Project Manager, Devtraco

Edward Nyarko – Head, Property Services at Ghana Home Loans

One of the highlights of the summit was the panel discussion. The topic for discussion was to explore the practicability of building green affordably in Ghana considering the perception that it is a luxury or can be expensive. The discussion was lively with participants making useful contributions.

The consensus was that it is very practicable to build green in Ghana. Some of the reasons and findings are captured below.

Key Highlights - Requirements for affordable green building in Ghana

- Ghanaians historically have built green with local materials, we need to educate and utilize our local building material. A case of “Sankofa”
- Green housing funds must be set up to make capital accessible to developers who build green
- Tax relief for construction companies, real estate developers and suppliers who adopt green built technologies.
- A shift in mindset from what is considered expensive; as adoption of green built methods are far cheaper in the long term.



**Harry Quartey, CEO of
Emerald Properties**

CLOSING REMARKS

Harry Quartey, CEO of Emerald Properties thanked the main summit partners GREDA and the Ghana Green Building Council for their instrumental role in organization of the summit as well as the sponsors namely MTN Business, BUSAC Fund, Ghana Home Loans, Raincoat Roofing Systems and the Graphic Communications Group. Mr. Quartey called for increased collaboration between the key industry players and implored them to continue the conversation beyond the summit in order to have the desired impact.

Key Takeaways

Key takeaways at the end of the summit are summed as follows:

1. Need for higher collaboration between key industry players and a harmonization of various green initiatives into one holistic green policy.
2. Metropolitan, Municipal and District Assemblies (MMDA's) should be resourced to promote the use environmentally friendly local materials in building construction.
3. Ghana Green Building Council should be supported to promote the benefits of green building and resourced to rate/ certify buildings green.
4. Need for change in mindset of the citizenry from perception of an expensive technology to embracing and adoption of green built methods which have positive impact on personal health, the environment and long term cost savings.
5. Need for rewriting of building codes to include green built technology.

POST-SUMMIT ACTIONS

The general consensus from the Summit was that promotion and sensitization whilst necessary would have little or no impact if it is not backed by a national policy to drive the adoption of green built methods. So, post-summit, key stakeholders would be engaged to find channels to increase sensitization and most importantly push for formulation of a national green policy.

www.ccsenet.org/jsd

Journal of Sustainable Development

Vol.7 No. 1; 2014

Table 2. Highly ranked barriers

Item	Barriers to sustainable construction	Relative Importance Index (RII)	Rank
1	Lack of Demand	0.90	1st
2	Lack of strategy to promote sustainable construction	0.87	2nd
3	Higher final cost	0.82	3rd
4	Lack of Public Awareness	0.79	4th
5	Lack of Government support	0.78	5th
6	Lack of cooperation	0.77	6th
7	Risk of investment	0.76	7th
8	Lack of Building Codes and Regulation	0.74	8th
9	Higher investment cost	0.72	9th
10	Lack of a measurement tool	0.68	10th

The above table is culled from a paper on “Barriers to Sustainable Construction in the Ghanaian Construction Industry: Consultants Perspectives” published in the Journal of Sustainable Development; Vol.7. It highlights the barriers to sustainable construction and key among those barriers is lack of government support.

Governmental intervention by way of policy formulation would create the enabling environment for the mitigation or complete elimination of other identified barriers.

The objectives stated below would guide the recommended post-summit actions.

Post- Summit Objectives	Performance indicators
Formulation of policy to require minimum local or green materials composition in construction of all public infrastructure	Percentage increase in environmentally friendly materials in construction of public infrastructure
Tax relief on green material supply/ green developments	Cheaper or easier access to green materials
Empower Ghana Green Building Council to promote green building and to issue certifications using the Green Star rating tool	Percentage increase in certified green buildings

Key stakeholders to be engaged:

Ministry of Works & Housing

Ministry of Finance

Ministry of Business Development

Ghana Green Building Council

The Energy Commission, Ghana

International Finance Corporation (IFC)

Parliamentary Sub-Committee on Housing (PSCH)

Ghana Real Estate Developers Association (GREDA)

Supported by: BUSAC Fund and Emerald Properties

Proposed timeline of action: Six (6) Months

Activity	Task Owner	Date /Frequency
First Post-Summit meeting with key stakeholders	GREDA & Emerald	
Literature Review - A review of other policies and strategies regarding green buildings or sustainable development.	GREDA & Emerald	DEC 8, 2017
Second Post-Summit meeting with key stakeholders		
Formation of a Steering Committee – (members to include key operational, technical and governmental stakeholders as indicated above)		DEC 15, 2017
Draft Policy - The steering committee to prepare a Draft Policy for presentation to the Government.	Steering Committee	TBD
Government Approval - The Draft Policy is submitted to government for approval and implementation.	Steering Committee	TBD

➤ *Partner Presentations*



Godfred Kwarteng, MTN, presenting on Fibre to the home



Aleksandra Ciurlik, Southern Connect, presenting on behalf of Izodom







Partners Acknowledgements



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