3RD GHANA GREEN BUILDING SUMMIT 2020

REPORT | 23 - 24 JULY 2020

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“

If you think the economy is more important than the environment, try holding your breath whilst you count your money

”

Dr. Guy McPherson

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OVERVIEW

To all the attendees, partners, stakeholders and sponsors, we at the Ghana Green Building Summit wish to extend our sincerest appreciation for making the Summit an overwhelming success. Whilst I am excited to share highlights of the Summit with you, I will first like to share a little story of faith and perseverance with you.

It was mid-march, we were buzzing, ready to go, with speakers and sponsors lined-up for the in-person event of the 3rd Ghana Green Building Summit, originally penciled for June 25-26, 2020, and then COVID-19 Struck! Our worst fears had come to pass, but like the rest of the world, we were united by a common purpose and commitment to fight what has now become a global pandemic.

Subsequent events indicated that, COVID-19 was not going to disappear in the immediate term, and after a couple of months and deliberations, we decided to take the Summit online, turning it into a 2-Day virtual summit from July 23-24, 2020. In a little bit, I will conclude the story, but only after sharing a few highlights from the Summit.

Whilst COVID-19 may have brought in its wake physical and social restrictions, we also saw a window of opportunity to expand the stakeholder base by roping in speakers and participants the world over, who hitherto would have been impeded by travel and accommodation arrangements.

What we set out to be a Ghanaian Summit, really and truly evolved beyond the name into a global summit, attracting 34 speakers from 7 different countries and 478 session participants from 25 different countries from Australia through Bangladesh to Ukraine and South Africa amongst many others.

With an expert panel and an international audience, we set out to carve a theme that will be relevant and relatable. The COVID-19 pandemic offered us an opportunity to rethink the design of our living, work and public spaces and this influenced the carving out of the main theme; BEYOND COVID-19 – Is a pandemic proof architecture a reality?

With agenda drawn, speakers confirmed, we needed a venue where the virtual summit could be transmitted from, a venue that fit with the ethos of the Summit. Enter CalBank Head office at Ridge, an iconic green building, was the perfect setting to host the Summit.

Some of the key takeaways from the discussions included revelations that upon review of the current Ghana Building Regulations LI 1630 (1996) and subsequent approved by parliament, a whole part will be dedicated to green building requirements; existence of incentive packages from state agencies and international development agencies to promote uptake of green buildings; Accra Metropolitan Assembly to incentivize developers to build green by offering rebates on property rates and building permits (30 -50% off) amongst others.

Special thank you to the Ministry of Works and Housing, Accra Metropolitan Authority and their leaders, Hon. Samuel Atta Akyea and Hon. Mohammed Adjei Sowah who delivered the keynote addresses respectively. Appreciation also goes to our major partners IFC EDGE Program, the Royal Danish Embassy of Denmark and CalBank.

We intend to continue to forge strong alliances and partnerships by sustaining a virtual presence through exciting thought leadership platforms to be launched soon. Special thank you also goes to Ama Ofeibea Amponsah, the chief Summit Producer for her tireless efforts in pulling off this event.

Before I sign off, please remember that wellness, in these times and beyond, is absolutely non-negotiable and for you and I to sustain our health, boost our immune system, we need to dwell within buildings that are green and sustainable; the refrain remains true - green buildings are “a must have’, not a “nice to have”.

Together we can realize our sustainability goals, if we do look out for each other, whether we are based in Austria or Zanzibar, we are all connected and affected by each other.

Let’s continue to engage and continue the conversation till we reconvene, hopefully in-person, and that will be in keeping with the story of faith and adaptation, values that made the 3rd Ghana Green Building Summit, a virtual reality.

Cyril Nii Ayitey Tetteh
Executive Director - Yecham Property Consult
Summit Organizer

Naja Møller Jørgensen

OPENING REMARKS

Presented by Naja Møller Jørgensen, Head of Trade Council at the Embassy of Denmark in Accra Ghana

Naja made the opening remarks in which she recounted the Embassy's longstanding support for the Summit and their collaborative efforts with the Government of Ghana to promote green and sustainable development. Highlights of her speech are presented below.

The Government of Denmark has an ambitious green agenda, which is a common thread in practically everything we do. In 2030, it is the aim of the Danish government to have reduced carbon emissions by 70% compared to 1990. The Ministry of Foreign Affairs has further put this green agenda into action by doing a complete reorganisation of the ministry to enhance the green agenda and by appointing a "Climate Ambassador" to take the lead in the international push for green solutions.

"The Embassy of Denmark has been part of Green Building Summit for the past couple of years and this year, we are very pleased to contribute with an even stronger presence through our two Danish keynote speakers. Mr. Rasmus Pedersen, Director of the energy management company Vitani, who will be speaking about innovations in energy efficiency solutions and the Danish approach to energy efficiency. And Mr. Rasmus Frisk, the CEO of ArkiLab design studio, who will introduce us to their take on democratic and inclusive sustainable city planning.

The Government of Denmark has an ambitious green agenda, which is a common thread in practically everything we do. In 2030, it is the aim of the Danish government to have reduced carbon emissions by 70% compared to 1990. The Ministry of Foreign Affairs has further put this green agenda into action by doing a complete reorganisation of the ministry to enhance the green agenda and by appointing a "Climate Ambassador" to take the lead in the international push for green solutions.

Ghana and Denmark enjoy a longstanding close relationship. For many years, our focus has been on development cooperation, but after Ghana achieved middle-income status in 2011 and in line with the Government of Ghana's call for investments and trade, we are building up our commercial activities and focusing on sector collaboration between Ghana and Denmark.

We have a lot to share when it comes to building green, energy efficiency and sustainable city planning, and the Embassy has a particular focus on the water sector with leading companies such as Grundfos providing access to clean drinking water and Kamstrup supplying intelligent water meters to combat the problem of non-revenue water.

The Embassy is also engaged in a long-term collaboration on urban water solutions, which are crucial for sustainable city planning. Water and sanitation are essential factors in the efforts to establish pandemic-proof cities, which is also a theme of this summit. The core of the project is a collaboration between Tema Municipality in Ghana and Aarhus Municipality in Denmark, who work together in areas like wastewater management and access to clean drinking water.

Cities are important drivers in the green transition, and we are happy to see more of these joint projects where cities team up to solve a challenge. We are also pleased that Ghana is taking such a proactive approach in the C40-network of cities, with the Honourable Mayor of Accra (who will be speaking later today) playing an important role as part of the steering committee.

We at the Embassy of Denmark thank you for the opportunity to take part in the Ghana Green Building Summit 2020 and wish you all inspiring and constructive discussions over the coming two days. We hope to see many green projects materialise in Ghana as a result of the summit and of the joint efforts of the stakeholders present at this event. Thank you.

OVERVIEW IN NUMBERS

PARTNERS, SPEAKERS AND ATTENDEES

34 SPEAKERS

7 DIFFERENT COUNTRIES

478 SESSION PARTICIPANTS

25 PARTICIPANT COUNTRIES

12 PARTNER ORGANIZATIONS

SECTOR BREAKDOWN

OVERVIEW IN NUMBERS

ONLINE HITS

25th June - 25th July

2,169

Total Sessions

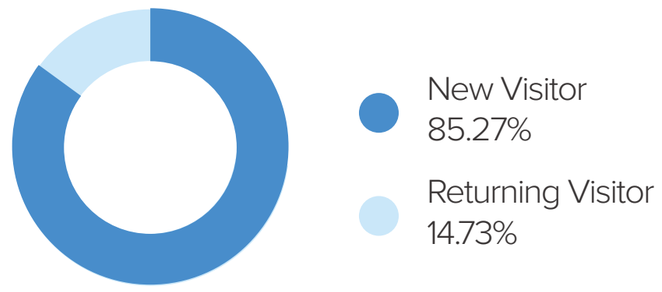
▲ 117%

1,412

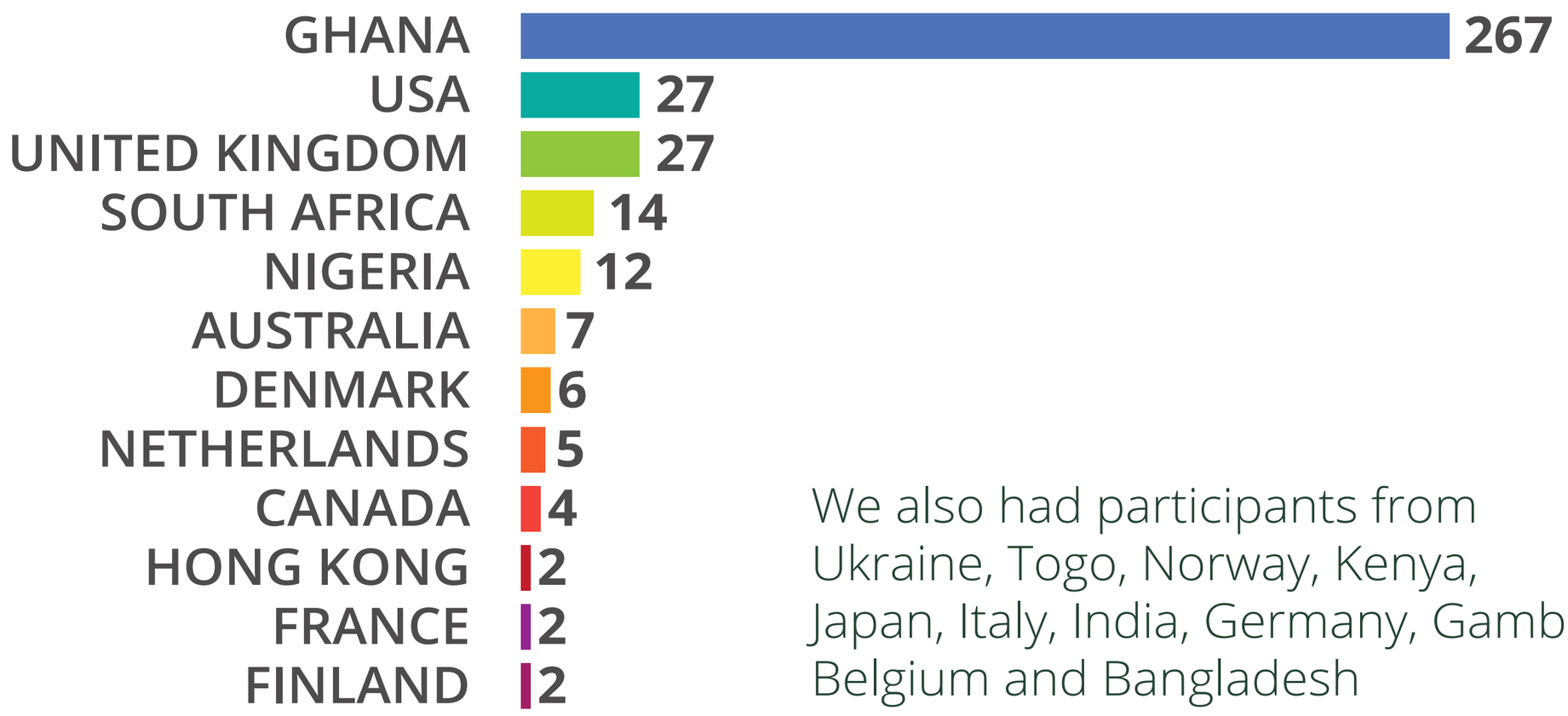
unique Visitors

▲ 108%

Visitor Retention



ATTENDEES BY COUNTRY



We also had participants from Ukraine, Togo, Norway, Kenya, Japan, Italy, India, Germany, Gambia, Belgium and Bangladesh

SAMPLE MEDIA CLIPPINGS

Hon. Samuel Atta - Akyea

KEYNOTE ADDRESS

Presented by Hon. Samuel Atta - Akyea (MP) Minister of Works and Housing

The keynote address was delivered by the Minister of Works and Housing, Hon. Samuel Atta Akyea who crucially disclosed that the Ministry has reviewed the LI 1630 building regulations, which has been amended to align with the new building code and currently domiciled at the Attorney Generals for review. Highlights, culled from of his address presented below.

> “In a bid to efficiently operationalise the Building Code, it became necessary to review the current Building Regulations LI 1630 (1996) to reflect all aspects of the Building Code. Significantly, the current Building Regulations is about 24 years old and long overdue for review. I am happy to announce that the Ministry has concluded the review of the document and has since submitted it to the Ministry of Justice and Attorney-General’s Department for consideration and drafting. The new Building Regulations when approved by parliament will have a whole Part dedicated to Green Building Requirements.”

Distinguished Ladies and Gentlemen, I believe there is no better time to ask ourselves, **“BEYOND COVID–19 – Is a pandemic proof architecture a reality?”** Undoubtedly, the theme and sub-themes for this year’s summit is very apposite at this point in our lives where the living environment has become crucial in our quest to overcome this pandemic as a nation. It offers all of us a unique opportunity to share knowledge and experience on issues not only relating to Architecture but also within the context of our Urban and Spatial Planning landscape.

Distinguished Invited Guests, Ladies and Gentlemen, in a bid to efficiently operationalise the Building Code, it became necessary to review the current Building Regulations LI 1630 (1996) to reflect all aspects of the Building Code. Significantly, the current Building Regulations is about 24 years old and long overdue for review. I am happy to announce that the Ministry has concluded the review of the document and has since submitted it to the Ministry of Justice and Attorney-General’s Department for consideration and drafting.

The new Building Regulations when approved by parliament will have a whole Part dedicated to Green Building Requirements. I wish to stress that before the document is submitted to Parliament for approval, all the key stakeholders and partners will be consulted on the provisions to make it a better document.

Ladies and Gentlemen, it is instructive to note that enacting laws and formulating policies are as good as ensuring that they are implemented to achieve the intended impact for which they were enacted or formulated. However, our governance structure within the built environment is such that while my Ministry leads in the formulation of these laws to control developments, ensuring implementation in the form of development controls are carried out by the Local Government Ministry acting through the Metropolitan, Municipal and District Assemblies (MMDAs). The question that needs to be addressed is how best the MMDA’s are engaged, resourced and positioned to meet the challenges of enforcing the provisions in the law to achieve its set objectives.

To conclude, housing and for that matter, our living spaces are divine and the nation cannot ignore its importance in our development. I cannot overemphasise the fact that investing in the widespread construction of decent and affordable living spaces needs to be a top priority and must be a foundational part of any post-COVID-19 economic recovery plan. Indeed, our surest future frontline defence against any pandemic is hinged on a safe and sanitary home with running water, clean energy and enough green spaces within a sustainable environment.

Our present generation owes a duty to future generations to leave the earth and its environment in an even better condition than we met it. The Ministry is, thus, keen to cease every opportunity presented to it towards pursuing this agenda for national development.

On this note, Distinguished Invited Guests, Ladies and Gentlemen, I wish to extend my sincere appreciation to the organisers for extending this invitation to me and providing the platform to address your wonderful participants.

I all participants and stakeholders, very fruitful deliberations and a wonderful summit.

Thank you and May God continue to bless us all.

Leslie Nsakie-Kassim

DESIGN - THE FUTURE OF OUR WORK SPACES

Presented by Leslie Nsakie-Kassim, CEO of Builnergy

Leslie presented on the future of our work spaces by focusing of 4 themes: health and wellbeing, space planning, flexible working and technology.

“Technology will be the driver of a lot of the new work space changes and hence fibre cabling is going to be the norm instead of the normal copper cables. This will be needed to power different devices which will be interconnected with proper building management systems.”

SESSION NOTES

• Entrances in to office buildings will have disinfection tunnels, automated temperature checks and hand sanitising stations.

Increased touchless sensor devices including use automatic faucets to make sure you don’t touch taps before washing hands; we are going to have increased use of automatic opening doors (sliding doors, revolving doors, motion detectors, voice activated doors) and automatic flushing WC.

• Use of antibacterial materials like copper, bronze, brass for door handles and materials that can be cleaned and disinfected.

Ensuring air within that space has a relative humidity of between 40% and 60% since if allowed to drop below 40%, droplets can actually suspend in the air and easily breathed in.

• Air Conditioner systems will see decentralising to reduce our zoning sizes in order to ensure that each floor or each zone has its own system, so that if there is any infection it can be controlled within that zone.

Technology will be the driver of a lot of the new work space changes and hence fibre cabling is going to be the norm instead of the normal copper cables. This will be needed to power different devices which will be interconnected with proper building management systems.

DESIGN - THE FUTURE OF OUR LIVING SPACES

Presented by Ruth-Anne Richardson, Founder of lenvisage

Ruth-Anne Richardson

Ruth- Anne Richardson made an enlightening presentation, by first, taking attendees through an architectural journey; the past, the present and then provided an insight into how the future of our living spaces will look by focusing on 3 main ideas; Modularity, Materiality and Verticality.

> The future of our living space will lean towards modularity in an attempt to make living activities work, hence the future of our spaces will be 6.6 metres X 6.6 metres.

SESSION NOTES

Modularity

Using the Speculative Plug House as a basis, Ruth-Anne revealed that the future of our living space will lean towards modularity in an attempt to make living activities work, hence the future of our spaces will be 6.6 metres X 6.6 metres.

Materiality

In a bid to harness and use more affordable materials, Expanded Polystyrene (EPS) Panels will become common place as it is largely cheaper than conventional building materials. She mentioned that it is being tested to confirm it's suitability for mass housing. EPS is 3-D panel consisting of a 3-dimensional welded wire space frame provided with the polystyrene insulation core and surrounded with shotcrete on both sides.

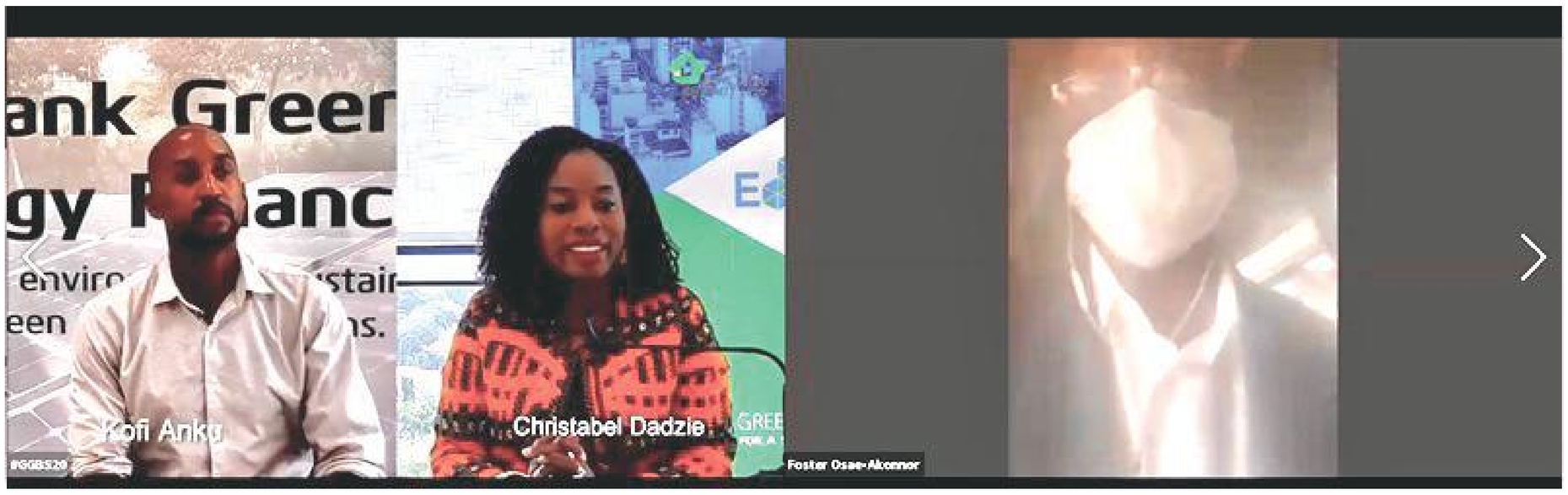
Verticality

With this particular idea, Ruth-Anne made reference to the Ghanaian context where about 200,000 housing units are needed over the next 10 years to make up for the housing deficit. The way to go, according to her is to build up or build vertical by condensing mass housing into one, as against just one unit in a particular space.

She also explored the need to rethink external linkages by seeing the stair area as not just one's personal area, but a point of convergence. This will allow us to dissolve the idea of straight circulation and consider more fluid activity and social processing within that space.

PANEL DISCUSSION

Functional Living Spaces



Kofi Anku **Christabel Dadzie** **Foster Osae-Akonnor**

THE PANEL **KOFI ANKU,** Real Estate Investor & Partner At Ayi Mensah Park, Ghana

FOSTER OSAE-AKONNOR, Board Chair, Ghana Green Building Council

MODERATOR **CHRISTABEL DADZIE,** Social Protection Specialist and Founder, Ahaspora

Purpose: To provide perspectives on:

Why buyers or builders fall into the beauty trap; where the form of a building takes precedence over function. What causes the gap from paper to site?; are developers more focused on financial gains as opposed to adoption of a human focused approach in residential design; find a middle ground, where form and function can be interwoven to create a win-win for both developer and homeowner.

SESSION NOTES

Yard and community spaces

With space becoming an expensive commodity, yet top of buyers' lists, Kofi Anku provided insight into a trade-off measure employed at Ayi Mensah Park. What they did was to make some of the private areas like the garden space within the actual house units smaller in trade for a bigger communal park area limited to the 200 residents in the community. "The benefits of the trade-off were clear in the sense that assuming you wanted to entertain 20 people, 40 people, you didn't necessarily have to do it in your home but rather at the communal club house which gives you access to bigger space. You could even hold wedding receptions and family events ensuring that you even make savings on transportation and other rental fees" Kofi added.

Lighting

The panellists also reemphasized the importance of daylighting. Foster expanded on the concept of passive design strategies. According to him, plans should always be devised to draw in natural light, even for small area buildings. "90% of homes in Ghana are small and as soon as you enter the living room you have to turn on the light, the spaces are crammed because you don't have what we call visual continuity"

Design (Square V Angular Shapes)

Foster further expanded the concept of design economics to drive the home the point that there wasn't a straightforward choice between the two. "The square shaped building doesn't have a lot of cutting so in terms of construction there is flexibility as well as reduced of material usage.

One of the disadvantages having a square shape is that, if the building's windows are not protected or not shaded, then you tend to admit more heat into the building and that has an effect on the energy usage in the building."

The primary driving factor for choice of square designs are the initial cost element but then because your windows may be exposed directly to the sun you end up using a lot of energy which then increases your bills, affects the environment negatively by draining the national grid and thus becomes more expensive in the long term.

Windows and Ventilation

• Both speakers gave useful tips on how to achieve cross ventilation. Kofi shed light on their fused approach whereby they shaded the front porch which then opens right out onto the living space with a nice sliding glass door but with windows that have magnetic mosquito nets that can be lift opened inside and then push the windows out.

• Foster advised a fusion of the two by looking out for the orientation, prevailing wind direction before installing windows accordingly to achieve cross ventilation so that even louvre blades can be used at any point of the house to draw in and circulate fresh air.

Scents and the Kitchen

In these localities, where we cook a lot with different kinds of strong aromas, having a kitchen that offers good space as well as good ventilation goes a long way to make time spent in the kitchen comfortable. For Kofi, this was a key decision to design each home with two separate kitchens. An open kitchen for light meals and one that opens to the backyard for heavy cooking and more traditional meals.

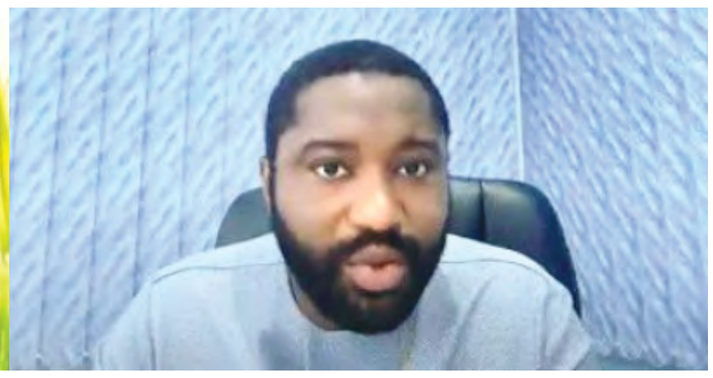
Foster also mentioned that extractor fan can be utilized to sap out strong scents especially where there are open plan kitchens. He encouraged all home owners to consider these fans and not be intimidated by cost or other perceptions of it being luxurious.

GREEN TO GOLD

Why Certification Will Be the New Marketing Gold

Dennis Papa Odenyi Quansah

Dr. Adolf Acquaye



Emmanuel Martey Korle

SPEAKERS **DENNIS PAPA ODENYI QUANSAH ,** Green Building Lead Ghana, IFC EDGE Program

DR. ADOLF ACQUAYE, Associate Professor in Sustainability, University of Kent, UK

MODERATOR **EMMANUEL MARTEY KORLE,** Construction and Infrastructure Lawyer, M & O Law Consult

SESSION NOTES

Dr. Adolf Acquaye's Presentation

"A life cycle thinking perspective" - Dr. Acquaye in his presentation on why Certification will be the new marketing gold made a remark that was quite poignant and set the discussion in proper context- Dr. Acquaye noted that, to have a profound discussion, Certification should be looked at from the angle of the life cycle of buildings -a life cycle thinking perspective. The life cycle of buildings is not just the building structure which would be built on site but it involves other processes including designing, planning, material selection and all the other processes within the value chain.
Other key highlights of his presentation are captured below:

Drivers of Certification

• Finite Resources - Resources which are required for construction are enormous and hence must be managed to preserve source elements as abuse results in depletion and harm to the environment.

• Cement - A key building resource particularly in developing countries contributes massively to CO2 emissions. For instance, total consumption in 2015 was about 4.2 billion which equates according to the IPCC to about 5.2 billion tons of C02.

Evolution of Certification Systems

The evolution of how building rating systems started off with BREEAM in 1990 through LEED from the USA in 2000 and in Ghana's case, The Green Star.

Ghana worked with South Africa in order to incorporate the Green Star into a Green Star SA-Ghana Certification system. One Airport Square in Accra was the first building to be certified under the cooperation.

Types of Certifications

1. Building Standards - these are set of guidelines and criteria created through stakeholder consensus against which the performance of buildings can be judged, an example will be the LEED, BREEAM or the Green Star.

2. Green Building Codes - these are mandatory and go beyond minimum code requirements, raising the bar for energy efficiency and pushing the standard of building design and construction to new levels of sustainability and performance.

3. Green Product Certifications - these are intended to outline and confirm that a product meets a particular standard and offers an environmental benefit, an example being timber.

Benefits of Certification

• Valuable educational and marketable tool not just for owners and property managers of buildings.
• Ensures standards that when applied leads to long term energy, water and material efficiency
• Enhanced profile or brand reputation in the entire chain, from the owner to architectural firms and constructional firms who engaged in the entire process until building was certified green.

GREEN TO GOLD

Why Certification Will Be the New Marketing Gold

Excellence In Design For Greater Efficiencies

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SESSION NOTES

Dennis Papa Odenyi Quansah's Presentation

Dennis provided an overview of the push and pull factors for going green before delving into his the crux of his presentation which focused on EDGE Program and the benefits of adopting green build concepts as well as addressing the cost benefit conundrum. Highlights of his presentation are outlined below.

The Cost Factor

By going green, there is the perception that build costs increased by about 12%, but the reality however is that averagely, it only increased by between 0% and 3%. The critical consideration for cost savings depends on how one initiates the project, by incorporating green considerations right from the start, at the design stage.

The Simplicity of the EDGE Software for Certification

EDGE (EXCELLENCE IN DESIGN FOR GREATER EFFICIENCIES) is a global innovation by the World Bank Group and its subsidiary, the IFC. EDGE offers a faster, easier, and more affordable way to build and brand green. It includes a software that helps to identify the most practical ways to build green.

A developer can see, online, the extra cost to build green and the time it takes to pay back through lowered utility bills. Another key differentiator of EDGE is that, it seeks to obtain or achieve a minimum base line performance of 20% for three (3) standards of material, water and energy as compared to Green Star for instance, which has about nine standards and very robust processes. Once the project is inspected and it meets the minimum EDGE standards, it gets the certification.

Key Benefits

The business case for going green include but not limited to; lower operational costs, increased revenue, reduced utility bills, access to funding, increased market value.

Case Studies - Bankable Projects

In South Africa, IHS (International Housing Solutions) analyzed and compared projects that had been built green versus those built with conventional technology and realized an interesting pattern; those built green saved their tenants a minimum of one month's rent over the year from reduced utility bills. Absa has introduced up with a new facility called Absa Eco Loan to support purchases of buildings that are certified green.

In October 2019, a Kenyan developer launched and raised $50 million though a green bond to build about 40,000 accommodation units, which will be EDGE certified, across various universities. The government is also providing free land for affordable housing projects once it meets the EDGE standard.

In Nigeria, the government partnered a private developer to build 100,000 homes within 5 years, all of which have been certified. That certification has positioned the developer to access more lands from the government for new developments.

In Ghana, the Takoradi Mayor has granted an incentive for buildings that will be built green in the city to enjoy 30% off their utility bills.

Certified Projects in Ghana

1. Tema Port – Terminal 3
2. CalBank Head Office
3. Takoradi Mall
4. Atlantic Tower
5. Pullman Hotel Accra
6. World Bank Office
7. PWC Tower
8. Komfo Anokye Hospital

It is important to note another advantage of EDGE patronage. Upon EDGE certification, IFC endorses and market that certified project by branding its marketing materials with the World Bank Logo, as well as assisting with development of promotional videos. This done all with the support of the EDGE Program which is actually donor supported, with SECO and the UK government being the main donors.

Hon. Mohammed Adjei Sowah

SUSTAINABLE CITIES - THE CASE OF ACCRA

Presented by Hon. Mohammed Adjei Sowah, Mayor of Accra

Hon. Mohammed Adjei Sowah provided a clear picture of the strategic thinking approach to making Accra a resilient city. The Mayor provided a snap shot of Accra's profile; 2 million commuters into the city; High population growth rate of 5.3% per year; 25% of the urban population live in informal housing; after which he shared some of their key efforts in making Accra a resilient city, excerpts of which are captured below.

> The Assembly has introduced an incentive package to incentivise developers to build green by offering rebates on property rates and building permits (30 -50% off).

SESSION NOTES

History of Resilience Thinking and Planning

From 2018 when a comprehensive study on the City's vulnerability to flooding was completed till 2020 with a planned Climate Action Plan and Accra's GPC-compliant GHG inventory Review in 2021, Accra is positioning itself to become resilient and sustainable. Under the Climate Action Plan and air quality management plan, there will be intense monitoring to identify sources and concentration of bad air.

Baseline Indicators

To strategically position itself, there are certain baseline indicators that will inform the strategic actions. Some of the relevant indicators include:

- 26% of Accra's total GHG emissions in 2015 comprised of Stationary energy of which buildings form a part, the subject matter of the Summit. (Transport: 30% and Waste 44% make up the others)
- Residential (13%) and industrial (10%) energy drive emissions from stationary energy
- From stationary energy, residential buildings are the main energy emissions source, contributing to about 50% of the emissions.

The Mayor also noted that Accra emits 15% of Ghana's total residential fuel combustion and having determined the locally determined contributions, it is aligned to the NDCs (National Determined Contributions) because ultimately it is Ghana that will be showcased.

Accra's Resilience Goals

These were created with the aim to make the city robust and mitigate the stress and shocks that come with the size of a city like Accra as well as control the unplanned growth and sprawl of the city by developing a compact city that will offer efficient services in all the communities. The goals are summarized as follows:

- Create a City that is poised to anticipate, mitigate and respond to whatever acute or chronic challenges that we may face now, and in the future
- A city that is capable of transforming the challenges with which we have long grappled with, into new opportunities to achieve inclusive development
- Developing Compact Cities

Tools for promoting "Green Accra"

The key highlight amongst several interventions designed to "Green Accra", the Mayor revealed that the Assembly has introduced an incentive package to incentivise developers to build green by offering rebates on property rates and building permits (30 -50% off) and as well as a set up of an Energy Efficiency Revolving Fund.

Rasmus Frisk

DESIGNING CITIES WITH PEOPLE

Presented by Rasmus Frisk, CEO and Partner at Arki_Lab – Denmark

Rasmus made an insightful presentation on their unique approach of involving citizens in the design of their cities. This citizen involvement model creates a feeling of ownership in the eventual project delivery and this also meant the projects have a higher success rate. Summary highlights of his presentation captured below:

> This citizen involvement model creates a feeling of ownership in the eventual project delivery and this also meant the projects have a higher success rate.

SESSION NOTES

3 legs of Sustainability

Rasmus identified 3 elements that are key to developing sustainable cities. He called them the legs of sustainability.

1. Financial Sustainability
2. Environmental sustainability
3. Social Sustainability (With people)

It is the last leg that of social sustainability that Rasmus believes is key to designing and delivering successful projects with people. He mentioned that they saw themselves more as change agents who do not just design buildings but build communities. The key strategy employed is engagement

Engagement

This model heavily involves citizens from inception of project to delivery. This model is best explained by the engagement ladder which has the element of manipulation at the bottom, consultation in the middle and citizen control at the apex.

If a project operates at the apex there is then a higher chance for successful project delivery. Some of the tools or methods used in engagement included gamification, workshops, competitions, focus groups etc.

Rasmus outlined some of the reasons behind engagement as acquisition of ideas, information, collaborations as well as developing a sense of ownership and legitimization. And while engagement is highly recommended, some developers, city authorities and states shy away from engagement for fear of rejection of ideas or new citizen requests that they may not be able to fulfill.

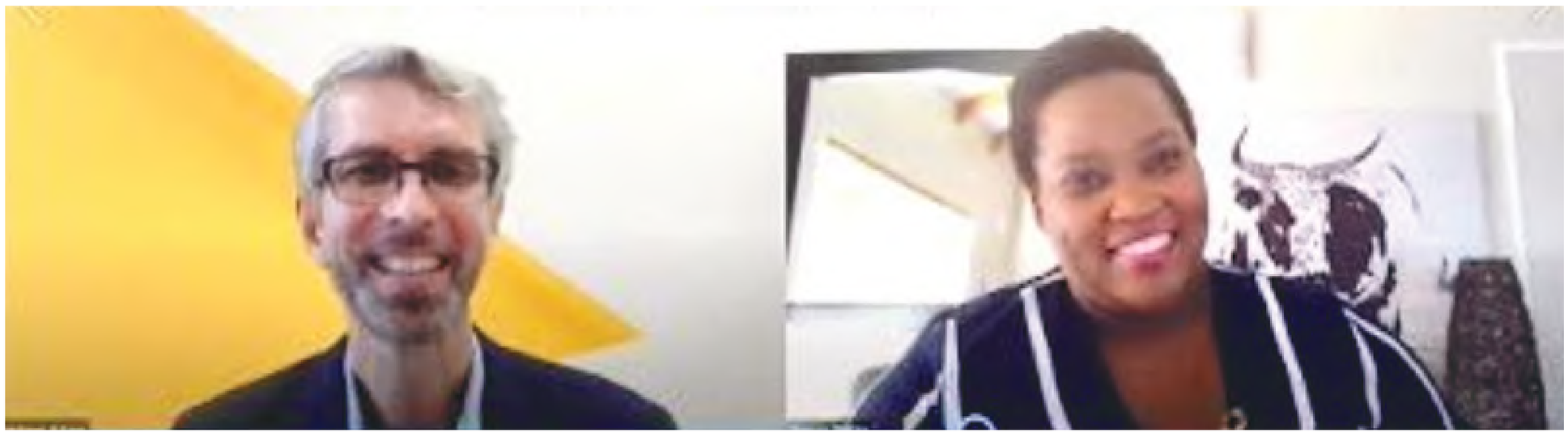
Asnaes Case Study

To illustrate his points, Rasmus provided a case study using the town of Asnaes (8,000 people) to further demonstrate how citizen involvement benefit the final outcome and ensure a successful delivery after a series of engagements including but not limited to; an extensive steering committee including politicians; embedding the project locally through events; open studio in the local shopping mall etc.

PANEL DISCUSSION

Creation of Pandemic Resilient Cities

Hon. Mohammed Adjei Sowah **Enock Yeboah Agyepong** **Rasmus Frisk**



Holger Adam **Songo Didiza**

THE PANEL

HON. MOHAMMED A. SOWAH, Mayor of Accra, Ghana

HOLGER ADAM , Head Real Estate Development of Clifton Homes, Ghana

SONGO DIDIZA, Green economy expert, Founder Green Building Design Group (GreenBDG) – South Africa

RASMUS FRISK, CEO and Partner at Arki_Lab - Denmark

MODERATOR

ENOCH YEBOAH AGYEPONG, Sustainable Dev't Cons. & Mechanical Engineer (Director, REAG -Ghana)

SESSION NOTES

Hon. Mohammed Adjei Sowah, in his opening remarks, identified with a key point his co-panelist, Rasmus Frisk had made in an earlier presentation on designing cities with people. Hon. Sowah likened it to the 5th element in Accra's resilient strategy, which seeks to promote resilience of the city of Accra. This 5th element is focused on working with the city folk; having an informed society, working with them, and continually informing them of progress. He further revealed that they have formed and developed strong partnerships because they follow a development plan which provides strategic direction.

Hon. Sowah also mentioned that having a solid governance structure in place fosters coordination and cooperation with other state and regional governments, especially, since Accra is the capital and generates interest at all levels of governance. To succeed at running a city sustainably and making it resilient, strong leadership is required to drive the strategy and operation of local authorities and assemblies the Mayor concluded.

Holger Adam introduced the element of urban fabric into the conversation. According to Holger, for cities to thrive in a sustainable manner, there was a need to look at the urban fabric, which in essence informs how our cities are planned, built, charged with activities and other elements that make the city livable and enjoyable.

Rasmus Frisk urged a rethink of city design by recommending a flipping of our mindsets about urban planning and about urban fabric as recommended by Holger, his co-panelist earlier.

According to Rasmus, in their approach to rethinking urban planning, they focused on 5 main elements; infrastructure; culture and history, space, life and the building itself. He also recommended focusing on small communities which then dovetail into a bigger masterplan.

Songo Didza reiterated that for a city to be fully sustainable, the Sustainable Development Goals (SDGs) must be the overarching guide to development. She also mentioned how the SDG framework is designed in a way to track the progress of each country. Being South African, she recalled how her country started their sustainability journey borne out of an electricity crisis in 2007.

The crises jolted their entire industry, resulting in a focus on energy efficiency and green initiatives and thereafter, the introduction of the mandatory energy efficiency code in 2008 and the establishment of the South African Green Building Council. She also recommended that cities interact by sharing data and tracking their progress through the innovative open source data.

PANEL DISCUSSION

Healthy Spaces- The Role of Retrofitting in Transforming Buildings

Enoch Yeboah Agyepong | **Devaksha Maharaj** | **Kgalalelo Mosime**

THE PANEL **DEVAKSHA MAHARAJ,** MD, Ikigai Engineering - South Africa

ENOCH YEBOAH AGYEPONG, Sustainable Dev't Cons. & Mechanical Engineer (Director, REAG -Ghana)

MODERATOR **KGALALELO MOSIME,** Director of Hive Design Studios (Pty) Ltd - South Africa

SESSION NOTES

Devaksha Maharaj provided a comprehensive breakdown of the concept of Retrofitting which she said in essence is a systematic process developed to improve an existing building's performance.

When applied to an existing building, commissioning them identifies deficiencies, uncovers problems and offers recommendations for some correction. To reach optimal retrofit goals many factors must be considered.

Energy and water systems should be upgraded to minimize consumption, during the retrofit, there should be constant evaluation as well as use of daylight maximized based on the task and the functions of that occupied space. A few suggestions are as follows:

Consider solar shading devices for windows that could help reduce energy consumption. Introducing a cool green roof could be cost effective and help with runoff, a cool roof's surface is painted with material that reflects part of solar radiation, as it can also reflect solar reflection in winter, heat energy consumption is then decreased.

Position your hand washing infrastructure strategically to clear space between sinks limiting the touchpoints and thereby reduce the opportunities for pathogen transfer.

Consider a green roof, which is one covered by soil. This kind of roof significantly improves heat insulation performance. The concept of the green roof is known as the biophilic design and has been proven to have a positive effect on mental health.

Enoch Yeboah Agyepong in his presentation on Retrofitting for Healthy, Inclusive, and Smart Spaces noted that for him, key consideration in the larger retrofitting conversation was that, there isn't a one-size fits all approach, but rather to question one's self and one's space in order to come up with tailored and unique solutions.

He recommended that thoughts should be allowed to cascade into questions like, what are you thinking? How are you expecting to make sure that your space is in itself optimized?

How do you ensure you are able to allow for different types of engagements to make sure that the space that you are in is optimized?

How much of energy are you consuming, how much water are you wasting? etc. These questions, he reckons will inform how you tailor your retrofitting needs to suit your unique space so as to save on energy and utility bills as well as make cost savings.

He recommended simple changes in fittings and fixtures to improve personal wellness and also make cost savings on utility bills. Some of the recommendations included:

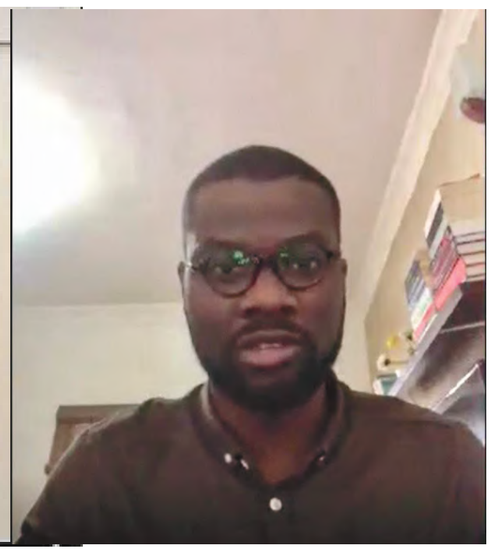
- Replace incandescent light bulbs with to LEDs preferably the ones with luminance.
- Open up to let daylighting into dark spaces.
- Ensure good ventilation by allowing for good air circulation in interior spaces to make it habitable and interesting.

PANEL DISCUSSION

Green Finance - The Business Case for Green Buildings

Justina Laing

Anele Makhwaza



Dr. Jubril Adeojo

SPEAKERS **DR. JUBRIL ADEOJO,** Co-founder/MD, SMEFUNDS Capital Limited – Nigeria
JUSTINA LAING, Group Head, Corporate at CalBank Ltd - Ghana

MODERATOR **ANELE MAKHWAZA,** Founder & CEO, Igugu Global - South Africa

SESSION NOTES

Anele set the tone for the conversation by noting that it was important to delineate the two conversations that play in the green finance space. There is the greening of finance- what finance is doing to support the transition of society to a more sustainable life and metrics that measure sustainability versus the financing of green buildings.

She intimated that all these activities play out in a USD $24 trillion dollar market as defined the IFC for emerging markets, a good 5 of it apportioned to sub-Saharan Africa. Her key question was to understand what the biggest missing piece was between coordinating the opportunity and the rate of execution of building green on the ground.

Missing Piece

Justina, in response to disclosing what the missing piece was, alluded to knowledge gap, lack of certification as well as lack of bankable projects as key contributors. "There is a knowledge gap in the green market in Ghana, in terms of certification and understanding of what green actually means.

The knowledge gap in the whole value chain includes financiers and developers, which affects development of project pipelines in the green market".

Plugging the gap

In making going green more attractive, incentives are key according to Justina. She reiterated CalBank's commitment to provide incentives like lowered interest rates for green specific projects by lending at a special rate, a few basis points, below the standard rate CalBank usually offers.

Demystifying climate or green finance

Jubril made the point that green finance didn't relate to just the physical building but the entire construction supply chain with the aim to decarbonize the entire process.

'It is not just about the building but about the entire value chain of the construction process.

There is a need to simplify what green is so people can easily buy into the idea of joining the green movement. Green building ecosystems is not only about the buildings but involves decarbonizing the construction chain to involve climate friendlier materials. Generally, the use of proceeds qualifies a project to be green."

Build Green Innovators

According to Jubril, developers are usually climate builders and not climate innovators. Therefore, there is a need to fund climate innovators to work on a larger scale than they have available to them to meet the demand of developers and users of green projects in the market.

Jubril made a passionate appeal to finance houses to assist by funding and building green champions who can develop innovative ideas and new technology that will spur growth of new business and develop new project pipelines.

DESIGN - THE FUTURE OF OUR PUBLIC SPACES

Presented by Engr. Dr. Kwabena Abrokwa Gyimah - Environmental Designer, Consultant - Green Haus Consult

Engr. Dr. Kwabena Abrokwa Gyimah

Kobby Azu

MODERATOR **KOBBY AZU,** Health Economist within the workplace health and safety industry

Kobby set the tone for Dr. Gyimah's presentation by emphasizing that the future of design is already here and designing of healthy spaces has been high of the agenda of many international bodies and that the advent of COVID-19 has only placed a spotlight on it.

Can the design of our public buildings and spaces like retail outlets & malls, hospitals, hotels & restaurants, schools, and churches etc. be such that it can adapt or mitigate the effect of such pandemics? For instance, air changes per hour or the level of air within a particular space should remain constant or at an equilibrium so as not to compromise ones state of health or make them susceptible to infectious diseases.

Answers to the above are found in the highlights of Engr. Dr. Kwabena Abrokwa Gyimah's presentation captured below.

SESSION NOTES

Air Change Rates

Air changes per hour or air change rate which is a measure of the air volume added to or removed from a space (usually a room or house) divided by the volume of the space, is a crucial influencer of ones state of health.

To achieve good ventilation in our public spaces, the air change rates in our public space should be of a minimum of 6. Air change rate that is below 6 will compromise your health.

Correlation between Air Change Rate and Pandemics

A patent by Gary G Kolleth established that aerosols or droplets suspended in the air as with the current COVID-19, are propelled by CO2. With more CO2 in our spaces, there is more aerosol propagation, which will in effect facilitate transfer of viruses.

If you are within an environment where you cannot achieve that air change rate naturally then you will have to resort air conditioning but air conditioning has its drawbacks as a bad filter can rather have an opposite effect.

Reduction of CO2

Plants and Greenery

Plants and greenery reduce CO2s as it absorbs all the surplus CO2s in the environment and then supplies us the oxygen we need. Plants thus offer more than just aesthetic value as it also absorbs all the pollutants. Common examples of such plants are Snake Plant, Aloe Vera and the Spider Plant.

Good Day Lighting

Sunlight in our indoor spaces has helped in curbing viral infections such as pneumonia, scarlet fever, meningitis and tuberculosis in the past. It is thus highly advisable to allow sunlight into our buildings by employing solar passive designs; atriums, sky lights, light walls, can be applied to a building depending on the unique dynamic.

Humidity Levels

Research has established that viruses cannot thrive within the humidity levels of 40 to 60. To manage pandemics, we must always maintain a humidity level, ranging from 40 to 60 by for instance, installing water fountains in our public spaces.

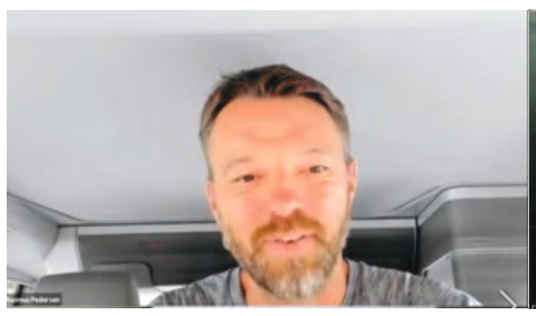
Technology

Technology will very much become a common feature whereby sanitization entrances will be installed in public spaces and adapted such that, when you go through it, viruses or bacteria on your clothes will be killed by UV rays as you go through that tunnel.

These UV rays in the tunnel will only kill the viruses for the minute or two that you go through the tunnel, which is just enough time not to harm your person but effectively kill off viruses making the public space virus and bacteria infectious free.

INNOVATION

What Will the New Normal Look Like?



Rasmus Pedersen

Chilufya Lombe

Chineyenwa Okoro Onu

Kweku Essien

SPEAKERS **RASMUS PEDERSEN,** Director, Board member-Energy Management company, Vitani – Denmark

CHILUFYA LOMBE, Partner, Solid Green - South Africa

CHINEYENWA OKORO ONU, Social Entrepreneur, Environmentalist & MD, Waste or Create Hub

MODERATOR **KWEKU ESSIEN ,** VP of Partnerships for Seso Global

> "Buildings as Batteries" The concept is rooted on the basis that immense thermal energy of large buildings can be used as theoretical battery packs. The aim is to be able to alternate between a national grid as well as renewable energy sources, such as wind and solar.

SESSION NOTES

Energy Efficiency Solutions for a Global Transition

Presented by Rasmus Pedersen

Rasmus presented a model used in Denmark to ensure energy efficiency solutions and the global transition from fossil based fuels to fossil free fuels. He highlighted his organization's adoption of modern technology reliant on AI and data to manage building and projects which increasingly are becoming interdependent and interact with other.

He cited an example of his company, Vitani's recognition for their internet server initiative which enables their customers to collect data from buildings using small sensors. He adduced such innovations to the enabling environment created in Denmark where the government set goals to reduce 70% of their carbon emissions in 2013 and achieve net zero by 2050.

Buildings as Batteries

Rasmus also provided a case study to support his company's technology or artificial intelligence (AI) approach. He cited the project called Pekive. This is an innovative project based on the concept of "Buildings as Batteries"

The concept is rooted on the basis that immense thermal energy of large buildings can be used as theoretical battery packs.

The aim is to be able to alternate between a national grid as well as renewable energy sources, such as wind and solar.

This is on the understanding that peak solar generation occurs during the day, while peak electricity demand occurs in the evening.

So in order not to waste a building powered by solar energy which is at its peak in the day, power generated from both sources are controlled by making use of the building as a big battery where energy is dumped in and pulled out seamlessly in order to match demand and supply and also avoid waste and unpredictability especially from renewable resources.

This is what informs the Pekive project which harnesses Artificial Intelligence (AI) for energy flexibility and efficiency related to heating and cooling under the - Danish-German Storage Of Renewable Energy (DGSTORE) program.

In Denmark, they harness a great deal of wind energy and with artificial intelligence (AI) this concept can employ green energy to warm up the buildings at night then cease that energy in the morning when everyone is using less energy Rasmus intimated.

He further reiterated that technology can reduce our energy consumption significantly without the necessity of direct human intervention while going a long way in managing buildings in a sustainable way.

INNOVATION

What Will the New Normal Look Like?

What Will the New Normal Look Like?
Presented by Chilufya Lombe

Chilufya Lombe reminded attendees that global response to COVID-19 isn't necessarily witnessing innovations, but a shift of focus by going back to the type of building fundamentals that we needed to be looking at in the first place. He made reference to indoor air quality for instance, "we have known about it for years, we have known the value of indoor air quality and building occupants' health, but now it's sort of becoming something that cannot be ignored".

"In the future, there are a number of things we look forward to seeing. These include a number of companies providing little pods for home office (4x2m). This solution helps with controlling your own indoor environment, providing energy security, providing the kind of IT infrastructure that you want and we seeing more sort of the corporate, commercial clients actually willing to offset the cost for some kind of home office or place for the person to work" Chilu reaffirmed.

The Virus Index

This new normal is going to bring about new metrics and new ways of validating buildings. Previously, buildings were looked at in terms of energy, carbon reduction and all of that making it an interesting metric to come across. Now however, there is an indoor air quality monitor called the virus index and what this virus index does is that, it creates a calculation from the conditions that are in the space and gives you a measure of how susceptible your space is to pathogens that spread diseases, be it air borne or through touch surfaces.

Key part of that calculation is ventilation; how much carbon dioxide versus how much fresh air is in your space. This has a direct effect on how quickly pathogens filter out to prevent spread of diseases. The safe levels are indexed from 1-10 with 1 being the safest and ideal.

"There is an indoor air quality monitor called the virus index and what this virus index does is that, it creates a calculation from the conditions that are in the space and gives you a measure of how susceptible your space is to pathogens that spread diseases, be it air borne or through touch surfaces."

The Great Sustainable Reset
Presented by Chineyenwa Okoro Onu

Chineyenwa disclosed that a new concept of human mobility will emerge - if people can't relocate for work, work will relocate for people. In essence, work will come to you whichever continent or country you find yourself in. You can access jobs and work remotely without travelling out or constrained by physical borders.

It is important that we think about the new concept of human mobility, a lot of new companies have had to look at their strategies and the huge budgets for fancy work spaces are now rethinking their models. The future of work post COVID will definitely not be defined by structure, but will be defined by flexibility, mobility and collaboration.

Innovative Work Spaces

Chineyenwa opined that work spaces will evolve and we will start having open air spaces with the conventional desk arrangement structure giving way. We will see more wall strip lighting instead of the harsh overhead lights, smart meeting rooms optimized with smart cameras, window cloaking treatments which will allow for laptop screens not to be seen from outside, private lounge chairs and work stations, lounge areas for refreshments, huddle rooms paired with development rooms to allow two person rooms to allow for creativity etc.

There could also be standing desks which can help in the promotion of health and exercise as a result work will start moving virtually. Citing the study of Cisco Webex System, an amazing architecture design model adopted by many organizations, Chineyenwa urged its adoption which then enables a sustainable or a proper green structural work place setting.

"work spaces will evolve and we will start having open air spaces with the conventional desk arrangement structure giving way. We will see more wall strip lighting instead of the harsh overhead lights, smart meeting rooms optimized with smart cameras, window cloaking treatments which will allow for laptop screens not to be seen from outside, private lounge chairs and work stations, lounge areas for refreshments, huddle rooms paired with development rooms to allow two person rooms to allow for creativity etc."

PANEL DISCUSSION

Is a Green Indigenous Architecture Attainable?

Hector Nanaka Bruce | Kuukuwa Manful

William Evans Halm | Ben Adarkwa, RIBA

SPEAKERS **BEN ADARKWA, RIBA ,** Architect and Partner, Benson Architects - Denmark

HECTOR NANKA BRUCE , Architect and Principal of NankaBRUCE Inc - Ghana

KUUKUWA MANFUL , Architecture Researcher and Co-founder, Sociarchi - Ghana

MODERATOR **WILLIAM EVANS HALM,** Architect, CEO, Spektra Global - Ghana

One of the striking cultural elements of many a society is their building architecture; a personality carved deliberately with indigenous material, colour, motifs and other symbolic accents. Until the influence of western design, indigenous design leveraged the immediate natural environment to provide quality indoor air, cooling and other functional spaces. In our quest for healthier and functional spaces, we re-open this much need conversation on indigenous architecture.

Purpose: To provide perspectives on:

- The level of existence or not of indigenous architecture.
- Identify the reasons for the low uptake, adoption and supposed unattractiveness of Indigenous architecture and proffer solutions thereof.
- Is this indigenous architecture inherently green or sustainable?

SESSION NOTES

What is Indigenous Architecture?

According to **Hector Nanka Bruce**, the construction, design and use of specific building materials that are common or local to a particular area or region is what constitutes Indigenous Architecture.

A Historical Perspective

Kuukuwa Manful provided a historical account of how green indigenous architecture had always been present in our society but faded over time due to a number of factors. She mentioned colonialism as one of the factors, whereby the British colonialists ensured that building permits for buildings made out of earth, thatch and timber were rejected by the Accra Town Council as far back as 1894 and were rather told to replace earth with concrete or metal. Changes in social tastes, trends as well as capitalists mode of consumption all contributed to indigenous architecture fading over the years.

A 21st Century Model

Hector Nanka Bruce used his house that he is currently building with 80% local materials to illustrate his point that one can still, in these modern times, consume and build green with local materials.

According to him, he is currently using concrete for the columns and beams, stone for exterior walls, clay bricks for the interior, raffia palm sticks for decorative materials including balustrades and Braapa (woven bamboo material originally used for drying cocoa beans) for his ceiling.

Concerns about Durability and Material Integrity

Concerns were expressed about the durability and general material integrity of recommended local materials like stone, compressed or rammed earth, laterite, burnt clay blocks, wood and thatch to last a building's life cycle or withstand fire and other forms of pressure.

For instance, Ben reminded all that hydrafoam which is a block made out of laterite is hydroscopic, meaning it absorbs a lot of moisture from the air, which eventually weakens it and loses its integrity. Kuukuwa, in response, mentioned that there exists additives, which can be applied to counter the hydroscopic elements.

Hector also intimated that retardants can be sprayed on wood to prevent fire and for roofs made out of thatch, area or siting for building should be studied carefully to ensure it isn't fire prone as thatch is susceptible to catching fire easily. He further stated that, it is poignant to note that no matter what kind of material used, the key to long term sustenance and durability is maintenance.

For compressed earth in particular, Kuukuwa allayed fears concerning its load bearing properties and provided examples to buttress her point. She indicated that as far back between the 16th-17th century, earth was used for high rise buildings in Kumasi, Ghana, where the British discovered to their amazement, the existence of upstairs toilets, when even, the whole of UK, at the time, had only 2 upstairs toilets.

She also mentioned that earth is still used in high rise buildings, in Yemen for instance, where there are eight (8) storey high buildings, even as of today.

PANEL DISCUSSION

Is a Green Indigenous Architecture Attainable?

Variability

A critical note was made that beyond the physical structure being green, consideration should also be given to the construction process itself, which can also influence the project being green or otherwise.

For instance, if you transported laterite material a long distance off the construction site, that transportation would have contributed to carbon emissions which also make the environment worse off and thus cancels out any sustainable material usage. The net off effect is negative and you may be better off using sandcrete if that is the material that is local and immediately available.

Recommendations to Make Indigenous Architecture Attractive

-Increased promotion and funding for Research and Development projects

-Ensure high profiled national and iconic projects adopt indigenous architecture.

-In marketing, go beyond word of mouth to showing clear tangible benefits and cost savings.

-Need to go beyond communicating financial or economic sustainability to communicate lifecycle sustainability which ensures long term benefits, borne out of low maintenance costs, far outweighing the initial startup costs.

-Incorporate indigenous architecture into school curricular of local architectural institutions as against the heavy laden euro-centric curricular.

-Move from 'the helicopter approach' of planting wholesale, euro-centric concepts unto the local environment without regard for our unique climatic conditions. Architects to be more nuanced in the application of ideas and concepts by adapting it to suit our climate.

Inspiration from Termite Mound

Ben Adarkwa in a quest to assert that a green indigenous architecture is attainable, proceeded to use the termite mound concept to back his answer by highlighting 3 areas of interest:

1. The mound is built out of a mixture of clay, termites' saliva and dung. It is known to have better thermal resistance properties (called U-value) than most building materials.

2. The conical shape of the mound offers only half the surface area to sunlight while the other half remains in shade. This condition reverses between the mornings and evenings to ensure minimum heat transfer into the mound.

3. The 3rd wonder of these creatures is their ability to sense, and harness the drop in night temperature to regulate internal temperatures. Through the use of thermal imagery cameras and heat sensors, they are observed to open the holes to allow cool night air to flush the mound and remove stale air. During the daytime, they plug the holes back leaving only the central tunnel to the top, to provide stack effect for the mound.

Termite Design Concept

This design concept is based on the true termite's tradition using natural ventilation to achieve cooling and no air-conditioning (AC) required. This Ben calls it the Sustainable, Affordable and 'Self-cooling' Homes, (SASCH for short).

'Self-cooling' is a relatively new concept applicable only to termite mounds which can be adapted to suit our present needs without compromising that of future generation and that is true sustainability. This concept is based on the following elements:

1. The high pitch roof and overhangs helps to combat the overheating of the interior and also allows bedrooms to be concealed in the loft spaces.

2. The use of environmentally friendly materials, clay bricks and clay roofing tiles backed up by modern cavity wall construction would increase the 'lag time' and delay heat transfer to the inside, which is key to keeping the building cool.

3. The natural ventilation rely on the buoyancy of hot air to rise. During the day the heated roof draws air upwards through the ducts and loft spaces and escape through the roof vent, forcing internal air circulation and producing the 'stack effect'.

4. At night the reverse happens when temperatures drop. Adjustable louvres in the bedroom balcony walls can be opened to flush the spaces below with cool night air and shut during the daytime to keep the coolness inside same as the termites do.

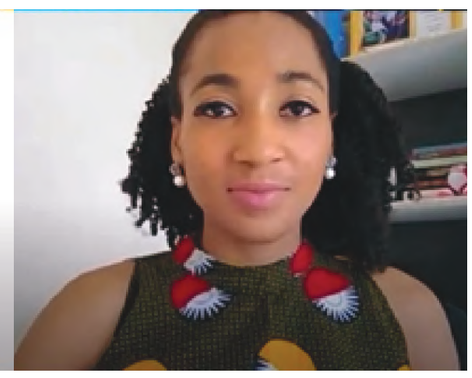
PANEL DISCUSSION

Green Finance -The Business Case for Green Buildings (2)

Frank Oppong-Yeboah

Bernard Gyebi

Vera Shaba



Ujunwa Ojemeni

SPEAKERS **VERE SHABA,** Founder & CEO of Greendesign – South Africa

FRANK OPPONG-YEBOAH, Manager, Mortgage Business, Republic Bank Ghana Limited

BERNARD GYEBI, General Manager, Risk Management, Republic Bank Ghana Limited

MODERATOR **UJUNWA OJEMENI,** Office of the Commissioner for Energy & Mineral Resources Lagos State - Nigeria

Ujunwa kicked off the session by providing a quick overview of what green buildings are and the opportunities within the sector. According to her, there exists within this sector, business opportunities to the size of USD$24 trillion which fed into the subject of the discussion; whether there is a business case, opportunities for funding and whether the numbers make sense in going green.

Having set the tone, the speakers proceeded to make their presentations. Highlights are captured below.

SESSION NOTES

Importance of a Green Recovery in Africa Post-Pandemic
Presented by Vere Shaba

What is a Green Recovery?

Vere recounted how the recent coronavirus pandemic exposed our fragile social, economic and environmental fabric as business and thousands of jobs were lost worldwide. More than ever, the realization dawned that sustainability should not be just about the environment but about economic and social sustainability as well. This is what informed world leaders who met at the UN General Council to fashion a response, called the green recovery, in a bid to rebuild the global economy.

To do so, we have to incorporate green concepts, including money and projects. Hence green and sustainable development is now integral to how we do business, develop portfolios and projects. When they looked at the S&P 500, they realized Stocks that considered Environmental Social Governance (ESG) requirements still thrived during this pandemic and performed better than stocks that didn't consider ESG. Green is not a nice thing to have, it is a must- to be integrated in every economic, social and environmental decision.

What does it mean for Africa?

Climate resilience should be Africa's top priority when it comes to buildings because it is most at risk compared to other continents. We are gradually moving to Net-Zero buildings, a step ahead of green buildings and two steps ahead of contemporary buildings, so this is the time to jump on the green movement or be left behind.

Africa should also embrace measurable actions to improve efficiency especially since green buildings are now measurable with three minimal performance requirements of 20% each of water, energy and materials for certification according to the World Bank.

Next Steps Post-Pandemic

-Set measurable standards in terms of EDGE Certifications
-Develop a green recovery roadmap
-Put in place a climate adaptation and mitigation strategy
-Define clearly your green building savings in order to access green finance

Republic Bank's financing Options- Bridging the Gap in Building Sustainable
Presented by Bernard Gyebi and Frank Oppong-Yeboah

Bernard Gyebi, Speaking on behalf of Mr. Farid Antar, the MD of Republic Bank, indicated that one of the lasting effects of COVID-19 will be the 'new normal' of physical and social distancing which eats into the fiber of our African society which is communal living. He intimated that, this new trend will spur a rise in quest for accommodation and while this is good for real-estate and mortgage businesses, it also means that building infrastructure will be competing more with nature.

He therefore proposed 'Green Mortgage' loan products which will enable members of the public to access affordable mortgage facilities subsidized by government to buy properties that are approved as environmentally friendly, utilize clean energy and nurture the green environment. "Just as government has partnered banks to offer affordable mortgage rates to public sector workers, I believe in its effort to promote SDGs, government should partner the banks by providing subsidies on loans to finance houses which qualify to be green or nature-friendly." Bernard opined.

Frank Oppong-Yeboah, also made a strong case for the issuance of a green bond by government or through Public-Private Partnership to raise long-term financing for green buildings as well as development of green loan products. According to him, on the international scene, Green Bond issuance accumulated US$161billion worth of investments worldwide according to International Rating Agency Moody's. Frank also revealed that they are designing a new product to

GALLERY

Dennis Papa Odenyi Quansah, Green Building Lead Ghana, IFC EDGE Program, delivering the Closing Remarks

NETWORKING

Networking Session with Linda Owusu, Summit Coordinator & Media Relations

FEEDBACK

We got great feedback, here we present not only endorsements, but recommendations as well as the constructive critique.

The virtual summit was amazing even after the pandemic season let's continue to have it.

7/24/2020 4:32 PM

I enjoyed the summit and learned a lot. Kudos to the team!

7/27/2020 12:44 PM

I'd suggest a forum to allow folks to engage with the guest speakers and investors. For more insight and deeper level of conversation.

7/25/2020 3:26 PM

I appreciate the calibre of panelists however I think to be beneficial to Ghana and Ghanaian architecture there should be more experts from our tropics. So people from Mexico/Central America, India, Singapore who deal with climate challenges more similar to Ghana than what Europe or South Africa experience.

7/24/2020 1:44 PM

I would like students doing projects on green building to be given a slot.

7/25/2020 9:16 AM

More engagement time would be beneficial at least 20 minutes after every panel discussion /presentation.

7/24/2020 3:14 PM

Please provide virtual elements in all summits moving forward. I've learned a great deal of information which will guide me and my team in completing an amazing green project. Thank you.

7/24/2020 4:41 PM

Wonderful summit!! I am elated to be a part of this experience. Please continue to share this content virtually every year, even post-COVID.

7/24/2020 3:02 PM

This has been a very successful summit - kudos to the team. For future summit be it online, kindly share the programme's agenda for participants to know the flow of events.

7/24/2020 12:23 PM

Training sessions should be organized for participants who would like to receive further insights at a small fee.

7/27/2020 1:16 PM

I will suggest the organisers to look into Circular Economy into next event, targeting circular design and innovation. My suggestion is based on the fact that, without integrating of circular economy concept and principle into our design and thinking, economic, social and environmental sustainability would be impossible to achieve as nation.

7/24/2020 12:23 PM

It would be nice to have the presentations the same day of the session to take better notes. Other than this, the virtual summit was a great opportunity to participate where I might not have been able to do so. Please keep a virtual option moving forward.

7/24/2020 12:11 PM

Going forward, It'll be great if participants are allowed to make few inputs by speaking to the mic.

7/26/2020 12:45 AM

Create a directory of organisations or professionals that want to partner or do collaboration. Easy access to find.

7/24/2020 5:58 PM

Good programme. I wish we can have a way of getting the government to buy into green building initiative.

7/24/2020 4:45 PM

Well organised & executed,

7/25/2020 2:53 PM

Kindly collaborate with the Project Management Institute to help you select the presenters for the program and you will love it. Thanks very much, you are doing a great job.

8/11/2020 9:10 AM

Unfortunately I was unable to access any of the presentations even after I had registered. Is there any way to view the recordings now? I was very excited to listen in on these topics. If the next GGBS is done virtually (which is a great idea and inclusive for everyone), then I think the kinks need to be smoothed out before that.

7/27/2020 8:09 AM

The overall program must be structured to reduce the length per each day's session. This will help us in grasping everything since there are no break session or other activities to refresh us for the subsequent sessions. Overall, it a good approach and impressive effort showcased in the organisation of this summit. Thank you.

7/24/2020 12:59 PM

More time should be devoted to energy efficient equipment for the benefit of electromechanical engineers who work on green buildings.

7/24/2020 4:39 PM

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