



CASLE Golden Jubilee Conference
Thursday 12 September 2019

'The Future of Surveying: Learning from the Past'

Dr Nabeel Goheer



Nabeel is the Assistant Secretary General at the Commonwealth Secretariat in London. He has worked with the ILO/UN, World Bank, UNDP, USAID and the Government of Pakistan.



Programme for 12 September 2019 - 1

- 09.00 **Session 1.** Welcome - Chaired by **Prof. Alan Spedding**, Past President CASLE
- 09.05 **Dr Nabeel Goheer**, Asst. Secretary General, Commonwealth of Nations
- 09.15 **Mr Joseph Segun Ajanlekoko**, CASLE President
- 09.30 **Surv Kwadwo Osei Asante**, Global Chair of the International Cost Engineering Council (ICEC)
- 09.45 **Prof. John Connaughton**, Head of Construction Management, University of Reading
- 10.20 **Ian McRae**, Chadwick McRae, Commercial Property Agents
- 10.55 – 11.25 **Tea/ Coffee Break**

Mr Joseph Segun Ajanlekoko



Joseph is the President of CASLE, Past President of Nigerian Institute of QSs, the Africa Association of QSs and the Association of Professional Bodies of Nigeria; he is the Managing Partner of Construction Economists Partnership Ltd.

Prof Dr Alan Spedding



Alan is a Chartered Surveyor and Chartered Structural Engineer. He is a Past Secretary General and President of CASLE. He joined UWE Bristol in 1972 to open the new Department of Surveying and served as Dean of Faculty and Associate Director. He continues to support CASLE as a member of the Secretary General's Task Force.

Surv. Kwadwo Osei Asante



Kwadwo is the Global Chair of the International Cost Engineering Council, Fellow & Past President of the Ghana Institute of QSs, Fellow of the Chartered Institute of Building and Member of the Chartered Institute of Arbitrators; he is a Works Contract Disputes Facilitator and an Assessor at the Commercial Division of the High Court of Ghana.

**The International Cost Engineering Council
(ICEC)**



ICEC Chair
Kwadwo Osei Asante



2019

1.

What is ICEC?

2019

**Global Cost Management Practices –
The Case of the ICEC**

ICEC

- ICEC is a worldwide confederation of professional cost management associations:
 - Cost Engineering,
 - Quantity Surveying,
 - Project Management, and lately
 - Project Controls
- Provides an international identity for the cost management profession as a distinct professional discipline
- Founded in 1976 by the American, Dutch, British, and Mexican Cost Engineering Societies

2019

Overview

1. What is ICEC?
2. ICEC Services & Activities

16 October 2019

ICEC – Key Purpose

- Collaboration between project cost management professional associations is the key for the global development of the profession
- ICEC provides an over-arching global identity and the vehicle to bring all these associations together
 - **ICEC is not in competition with anyone**
 - **The mission of ICEC is to support the profession and professional associations and bring them together to network, share knowledge and information to raise global standards of project cost management**

2019

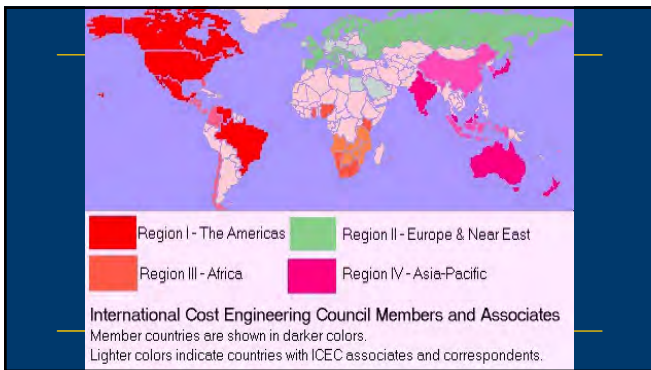
ICEC

- ICEC has now grown to have a membership base of 42 associations representing over 120 cost management professionals throughout the world:
 - 14 cost engineering societies
 - 11 project management societies
 - 17 quantity surveying societies
- An 'umbrella' framework organized into 4 regions:
 - The Americas, 2. Europe & Near East, 3. Africa, 4. Asia-Pacific
- ICEC also collaborates with other regional and industry associations to help develop the profession
 - RICS, FIG, AAQS, PAQS, IPMA, etc.

2019

Region 1 North/South America	Region 2 Europe	Region 3 Africa	Region 4 Asia-Pacific
Brazil (CE)	Austria (PM)	Ghana (QS)	Australia (QS)
Canada (CE)	Cyprus (QS)	Kenya (QS)	Australia (CE)
Canada (QS)	Czech Republic (PM)	Mauritius (QS)	China (CE)
Mexico (CE)	Denmark (PM)	Namibia (QS)	Fiji (QS)
United States (CE)	Finland (PM)	Nigeria (QS)	Hong Kong (QS)
Venezuela (CE)	France (PM)	Nigeria (CE)	India (PM)
Honduras (CE)	Greece (PM)	South Africa (CE)	Japan (CE)
	Hungary (CE)	South Africa (QS)	Malaysia (QS)
	Iceland (PM)	South Africa (PM)	New Zealand (QS)
	Italy (CE)	Tanzania (QS)	Philippines(QS)
	Netherlands (CE)	Uganda (QS)	Singapore (QS)
	Romania (CE)		Sri Lanka (QS)
	Slovakia (PM)		Sri Lanka (PM)
	Slovenia (PM)		Brunei (QS)
	United Kingdom (QS)		Indonesia (QS)
	United Kingdom (CE)		

CE - Cost Engineering Association
 QS - Quantity Surveying Association
 PM - Project Management Association

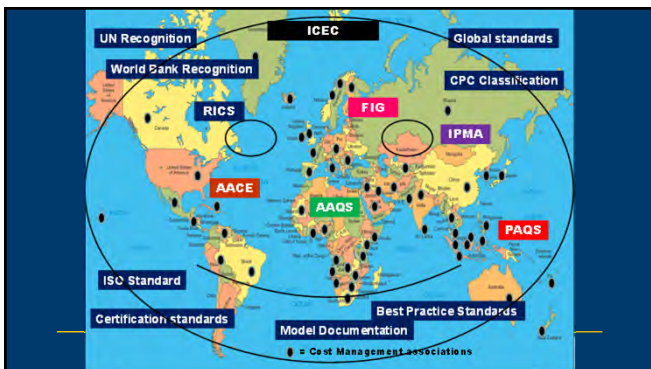


Networking

- ICEC provides considerable opportunities for networking and sharing of information, resources & knowledge amongst member associations
- Tremendous potential for collaboration on:
 - international research projects
 - cost management practices/innovation
 - Mobility of professionals around the world
- Main communication vehicle is ICEC website:

www.icoste.org

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ICEC – Making it More Relevant

- Have developed a new strategic plan
- Includes reaching out to firms and individuals
 - Raise awareness of what ICEC is and how firms and individuals can benefit (and become involved)
- Feedback continues to be sought from member associations and their members
 - Eg. Communication (website, email, "skype", videoconferencing, telephone, etc.)
 - Services/information needed

2019

2.

ICEC Services & Activities

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ICEC Publications

- Roundup Newsletter
- International Cost Management Journal (ICMJ)
 - Selection of the best papers previously published by member associations (congresses, journals, etc.)
 - Focused on papers directly relevant to industry

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Global Identity for the Profession

- Global development of the profession requires:
 - Global leadership
 - Single global professional title
 - Global professional standards & certification
 - Global project cost management standards
 - Engagement with key global organisations
 - Transportability of services

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ICEC World Congresses – Every 2 Yrs

2016 – Rio de Janeiro, Brazil
October 2016

2018 – Sydney, Australia
November 2018

2020 – Accra, Ghana
October, 2020

16 October 2017

ICEC – Sharing Resources & Knowledge

- Sharing of journals, publications, etc.
- International Standards Group
 - Inventory of Best Practice & Standards
 - Contributions from member associations
- Industry Reports/Publications
- Professional Competency Standards
- International Sources of Cost Data
- Links to industry software
- Book/Software Reviews

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Global Recognition – International Construction Measurement Standard (ICMS)

- ICEC is supporting the development of the International Construction Measurement Standard (ICMS)
 - <https://icms-coalition.org/>
 - Over 40 associations have joined the coalition to develop this standard
- Not intended to supplant local standard methods but to provide a global standard that can be used as required
 - Provides global standards for the profession
 - Will assist countries where the profession is emerging

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ICEC – International Recognition

- UN Habitat Initiative (2001)
- Registered as an NGO with UN Habitat (2003) Cooperative Agreements
- Granted Roster Consultative Status with the United Nations Economic and Social Council (ECOSOC) in 2006
- Reciprocal agreements with:
 - International Project Management Association (IPMA)
 - International Federation of Surveyors (FIG)
 - Royal Institution of Chartered Surveyors (RICS)
 - Africa Association of Quantity Surveyors (AAQS)
 - Pacific Association of Quantity Surveyors (PAQS), RICS

16 October 2017

School of the Built Environment
University of Reading

ACTION IN EMERGENCY



Managing construction's use of the world's *material* scarce resources

CALSLE 2019
Connaughton

Professor John

LIMITLESS POTENTIAL | LIMITLESS OPPORTUNITIES | LIMITLESS IMPACT


Thank You

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THE GROWTH PROBLEM

University of Reading

Resource consumption per day in different societies



Exploitation of fossil-based energy is key to industrial growth

Source: Friends of the Earth Europe, 2009

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LIMITLESS POTENTIAL | LIMITLESS OPPORTUNITIES | LIMITLESS IMPACT

Prof. John Connaughton

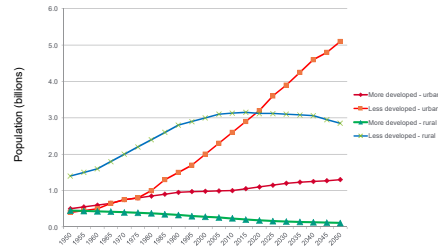


John is Head of Construction Management and Engineering in the School of the Built Environment at the University of Reading and Professor of Sustainable Construction. Chair of the Executive Board of the UK Construction Industry Research and Information Association. Previously Partner in Davis Langdon.

CONTEXT: URBANISATION

University of Reading

Urban and rural populations 1950-2050



United Nations (2012) World Urbanization Prospects: The 2011 Revision, UN, New York

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LIMITLESS POTENTIAL | LIMITLESS OPPORTUNITIES | LIMITLESS IMPACT

CONTEXT: URBANISATION

By 2030, **over 80 billion m2** of buildings will be built new and rebuilt in urban areas worldwide.
This is **≈ 60% of the world's building stock**

This construction activity breaks down as follows:

- 38%** China
- 15%** U.S. / Canada
- 9%** India
- 9%** Latin America
- 9%** Middle East / Africa
- 12%** Other emerging
- 4%** Western Europe
- 4%** Other developed

Source: Architecture 2030, (2014)

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SOME BIGGER PICTURES...

Materials extraction

Materials use

Source: Kraussmann et al, 2018

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LIMITLESS POTENTIAL | LIMITLESS OPPORTUNITIES | LIMITLESS IMPACT

CONSTRUCTION/BUILDINGS RESOURCES AND IMPACTS

% 'Global Impact' (mainly consumption volumes; 'production' in case of Waste and GHG)

Source: United Nations Environment Programme (UNEP), 2014 Sustainable Buildings and Climate Initiative

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RESOURCES IN FOCUS...

Global materials extraction, 1970 to 2017

Source: IRP, UNEP, 2017

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LIMITLESS POTENTIAL | LIMITLESS OPPORTUNITIES | LIMITLESS IMPACT

THE IMPORTANCE OF MATERIALS

- The global building sector consumes 3 billion tonnes of raw materials every year, approximately **40-50% of total world resource consumption**
- Construction and demolition account for almost **one third (30%) of global waste by volume** – the highest for any sector
- One **quarter of global timber** production is used by the construction industry

Source: OECD, UNEP (various)

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LIMITLESS POTENTIAL | LIMITLESS OPPORTUNITIES | LIMITLESS IMPACT

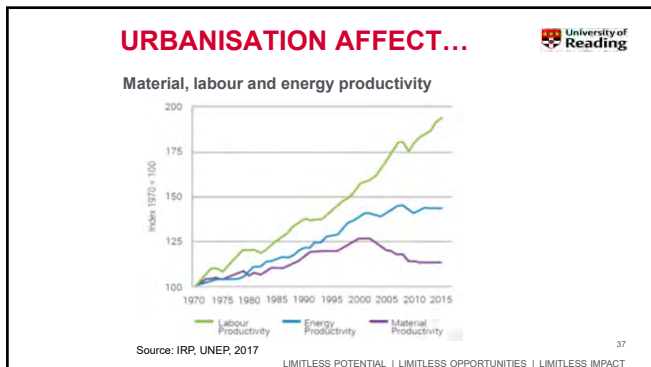
A REGIONAL VIEW...

Regional shares in global materials extraction, 1970 to 2017

Source: IRP, UNEP, 2017

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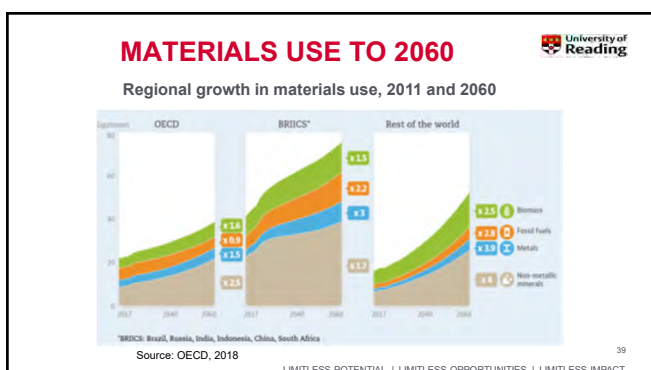
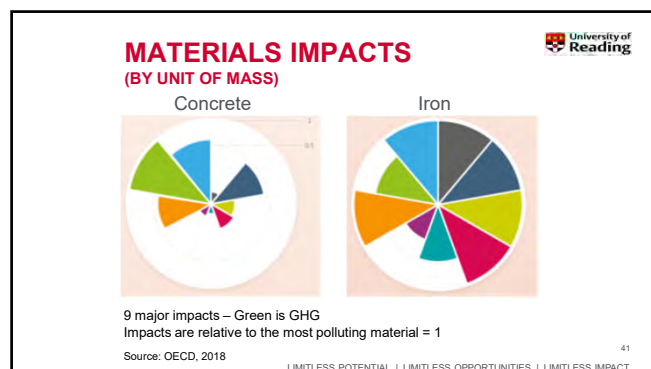
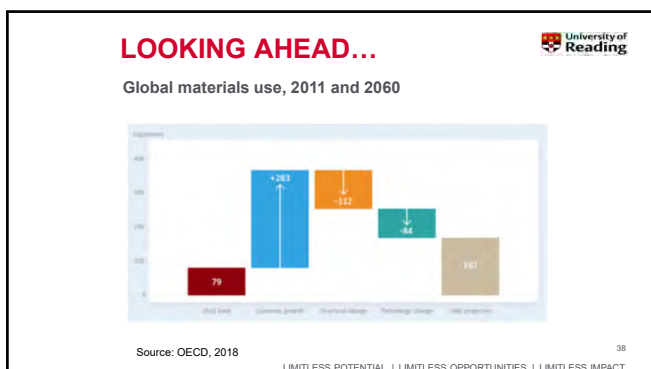


MATERIALS IMPACTS

Materials consumption has a range of impacts...

- Resource depletion
- Energy use and GHG emissions from extraction, manufacturing, transportation, installation, use and disposal
- Water consumption at all stages
- Pollution to air, water and land from processes at all stages
- Waste generation at all stages, including end of life disposal

LIMITLESS POTENTIAL | LIMITLESS OPPORTUNITIES | LIMITLESS IMPACT



MATERIALS IMPACTS (BY USE)

Concrete is responsible for 9% of global GHG emissions

7 key metals (iron, aluminium, copper, zinc, lead, nickel and manganese) are responsible for 7% of global GHG emissions

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SO WHAT'S TO BE DONE?

Circular economy thinking in construction

Diagram source: www.wienerberger.co.uk

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FURTHER READING

1. Allwood, J., and Cullen, J. (2011) *Sustainable Materials: with both eyes open*. UIT Cambridge. Available at: <http://withbotheyesopen.com/>
2. Friends of the Earth Europe (2009) *Overconsumption: Our use of the world's natural resources*, FOEE, SERI and Global 2000, Austria.
3. IRP (2017) *Assessing global resource use: A systems approach to resource efficiency and pollution reduction*. A Report of the International Resource Panel (IRP), United Nations Environment Programme, Nairobi.
4. Kraussmann, F., Lauk, C., Haas, W. and Wiedenhofer, D (2018) 'From resource extraction to outflows of wastes and emissions: The socioeconomic metabolism of the global economy, 1900-2015'. *Global Environmental Change*, 52 (2018), 131-140.
5. OECD (2015) Working party on resource productivity and waste: a policy study on the sustainable use of construction materials. OECD, Paris.
6. OECD (2018) *Global Material Resources Outlook to 2060: Economic drivers and environmental consequences*. OECD, Paris.
7. Thornback, J. and Adams, K. (2017) *Knowledge Resource for Circular Economy in Construction*. Construction Products Association and the Building Research Establishment. Available at http://www.constructionleadershipcouncil.co.uk/wp-content/uploads/2019/06/GBC_Circular_Economy_Jan_17-9.pdf

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MATERIALS RESOURCE EFFICIENCY

- Materials resource efficiency is about **using less**:
 - Smarter design, avoiding over-specification
 - Wastage reduction/management – especially on site
 - Using high recycled content materials/products
- Use materials/products with **low embodied resources** – especially energy/carbon and water
- **Optimise durability** by reducing premature obsolescence and design for de-construction and re-use
- **Reduce resources (energy/water) and waste** during construction

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School of the Built Environment

ACTION IN EMERGENCY

Managing construction's use of the world's **scarce material resources**

Professor John Connaughton

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WHAT COULD THIS MEAN FOR SURVEYING?

Shifting the focus to include **Resource Efficiency** as well as 'financial efficiency'...


- The development of standards for measurement and assessment
- The development of useful, consistent and reliable data
- The development of procurement processes with Circular Economy in mind
- Informing the development of policy and, where appropriate, regulation

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LIMITLESS POTENTIAL | LIMITLESS OPPORTUNITIES | LIMITLESS IMPACT


Ian McRae, FRICS

Ian formed the Commercial Property Agency of Chadwick McRae in 1992, specialising in 'sheds', having started with Richard Ellis, initially in UK, then Kenya. In 2011 he won the Industrial Agents Society Award for Outstanding Contribution to the Industry.




LOGISTICS & WAREHOUSE PROPERTY

Ian M'Rae, FRICS
Chadwick M'Rae




X Dock



DC5 is a new build-to-suit cross dock distribution building up to 492,840 sq ft


- 568 car parking spaces
- 139 HGV parking spaces
- 72 dock levellers
- 8 level access doors
- 15m clear haunch height

	SQ FT	SQ M
Unit	467,900	43,469
2 x 2 storey offices	14,672	1,362
2 x 2 storey 'hub' offices	10,010	930
Gatehouse	258	24
TOTAL	492,840	45,785



Index

- History
- Planning
- Design
- Future
- Case Study
- Africa
- Conclusion




Specification

EXTERNAL Secure service yards up to 55m
Security lighting – office car park and service yard
Up to 568 Car parking spaces
Up to 139 HGV trailer parking spaces
Up to 72 Dock levellers
Up to 8 Level access doors
Covered cycle shelter Secure fenced site


WAREHOUSE Clear internal height 15m
FM2 category floor
50 kN sq m floor loading
15% rooflights

OFFICE Two-storey office
Mechanically ventilated system
Suspended ceilings
Raised access floors



History


Before



Customers driving to shops at their expense, picking up the products and taking them back home.

- Centralised
- Cost effective and convenient for retailers
- Competition had physical borders

Today



Customers buying remotely and having the products delivered at the retailer's cost.

- De-centralised
- Cost effective and convenient for consumers
- Competition is limitless



Design

Bulk Distribution / Big Box



Bulk distribution is the newest and fastest growing industrial segment and ultimately reflects what most investors envision as industrial real estate. These large, single-story structures range in size from 250k to well over 1m sq ft and are primarily used for the storage and distribution of goods across a wide geographic area. Ceiling heights can be up to 25m to accommodate racking and storage systems. "Commerce Fulfillment Centers" also fall into this category.

Light Industrial



This is the most common of the industrial property types and makes up the majority of Henderson's portfolio. These properties are similar in function to larger distribution centres, but are smaller and more easily divisible into smaller spaces to accommodate tenants distributing in a smaller area. Other differentiating factors include lower ceiling heights, and higher office build-outs (up to 25% of the space).

Flex / R&D



Flex is short for "flexible", and covers a broad range of uses. These properties represent ~10% of total inventory and can have a mix of office, warehouse, manufacturing, and showroom space. Flex buildings are popular in technology industries as their hybrid structures allow for various functions in a single location. Flex / R&D parks are often built in desirable campus-like business parks with extensive landscaping and lots of surface parking.

Specialty



Specialty includes manufacturing ("heavy industrial", refrigeration & cold storage, telecom ("Data Centers"), and Truck Terminals. Manufacturing facilities tend to be owned by goods producers. Data centers more closely resemble office in urban areas and industrial in the suburbs. Truck terminals are mostly used for staging and transfer and usually have little storage area.

Design / Market Drivers



- Changing scope of retail driving demand
- Online retail causing a shift in occupier requirements
- Convenience food retail changing demand for warehousing in urban locations

Case Study - Whitley Business Park, Coventry



Design

Drivers of Asset Quality - Location	Drivers of Asset Quality - Physical Characteristics		
<ul style="list-style-type: none"> Distance to airports, seaports, major highways, rail hubs, or manufacturing plants Centralised location for regional distribution Barriers to entry / Higher and better use potential Proximity to a labour pool and to customers (especially important for eCommerce facilities) 	<p>Clear Heights</p> <p>Clear heights represent the distance from the floor to the lowest part of the ceiling that covers a substantial portion of the work area. Clear heights are important because they determine the maximum height of usable space, and thus how much can be stored in the structure. Clear heights are becoming increasingly important as automatic cranes on rails can now work beyond the height limitations of buildings. Higher ceiling heights also enable mezzanine floors.</p>	<p>Bay Depth and Width</p> <p>Bay depth & width is the distance between posts or vertical support beams. Bay size is a key determinant of how a space can be used, what types of goods it can accommodate, and how efficiently those goods can be received and moved. Modern warehouses and distribution facilities need space not just for racks, but conveyors, walkways and picking lanes, receiving and staging areas, employee areas (break areas, lockers, restrooms, etc.) and other custom built-outs.</p>	<p>Truck Court & Trailer Parking</p> <p>Truck courts comprise the loading and manoeuvring areas, the size of which determines the number of dock doors that a building can accommodate. More docks require a superior flow of goods from the warehouse to the trucks. Trailer parking is also desirable for the convenience of onsite trailer storage. For certain types of warehouses that require a large number of workers - like eCommerce facilities, which can be up to five times more labour intensive than traditional distribution facilities - car parking also becomes very important. Chain-docking (i.e. docks on both sides of the building) is also a desirable attribute for certain tenants.</p>
<p>Other Physical Attributes: Age and Expansion Options, Structural Support Capabilities, Fire Suppression System, Power Back-up / Generators</p>			

Whitley





Future

- How Technology is Changing the Future of Logistics
- Artificial intelligence and machine learning
 - The rise of robotics
 - 3D Printing – print or ship?
 - From first to last mile: driverless vehicles, drones and robots
 - Leading through uncertainty

Whitley



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AFRICA





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Item	Area/Average	Rent per sq. ft./acre	Rent per annum sq.
Warehouse	214,000	£ 6.50	£ 1,391,000
Canopy	20,000	£ 1.75	£ 350,000
E.t. Storage	7.50	£ 56,000	£ 420,000
Total Annual Rent			£ 1,860,000

Yield Calculation	
Area	214,000
Rent Per sq. ft.	£6.50
Initial Rent	£1,391,000
Canopy	£40,000
Additional Yard Rent	£40,000
B Rent	£120,000
Net Initial Yield	£1,691,000
	4.53%
Net Price	£41,007,214
Less Rent Free	Months 0
£1,860,000	£0
Total	£41,007,214

Investment/ Acquisition Costs	
Legal Costs	0.50%
Agents Fees	1.00%
Other costs	0.20%
Stamp Duty	3.00%
Purchase Costs	8.76%
Gross Cost	£43,785,326
Price per sq. ft.	Gross £204.58
	Net £191.62





Why better warehouses will be the key to Africa's growth




What a difference it could make.

- Providing a platform for African Manufacturing and 4IR
- Enhancing agricultural value chains & reducing food losses
- Enabling the growth of African SMEs
- Accelerating E-commerce
- Driving economic growth, regional trade & skilled job creation

Case Study - Whitley Business Park, Coventry

Conclusion



- Location, Markets, Transport, Infrastructure, Planning, Labour and Power
- Public Sector and Private Sector together.
- Modern technology.
- Employment, predominantly skilled.

The history of logistics is all about the move from an economy focused on production to one focused on consumption. The future of logistics is about the repatriation of jobless production.



Thank you

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