Building Design & Construction

Industry Opportunities Viewpoint from Contracting Perspective

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Bouygues Energies & Services, Scotland
Introduction: Charlie McKenzie

- Regional Development Manager for Bouygues Energies & Services Contracting, which is part of the BYes Industry Division, based in the Scotland Office at Eurocentral
- Over 20 years Construction Industry experience including Project Management, Consultant Design and Technical Sales
- Services Design, Build and Co-ordination within Critical Environments
- Chartered Engineer
- Executive MBA Court Medal Winner
- Accredited CIBSE Low Carbon Consultant, Low Carbon Energy Assessor, Air Conditioning Inspector & ESOS Lead Assessor
- ASHRAE Scotland President
- CIBSE Scotland Committee Member
Introduction: Bouygues Energies & Services

Bouygues Energies & Services are a member of Bouygues Construction, a global leader in the building, mechanical and electrical contracting & maintenance sectors.

52,200 employees in 80 countries worldwide.

In 2017, Bouygues Construction generated sales of €11.7 billion
Opportunities for Growth
Contractor Viewpoint

- Current View of Industry Market Condition
- Possible Future Market Condition
- Potential Opportunities for Growth
- Methods for Taking Advantage of Opportunities
Scottish Economy as a whole appears to be growing:

“The outlook for the Scottish economy is similar to that presented in June with independent forecasts indicating growth of around 1% in 2017 and 2018. Brexit remains the key risk to Scotland's economy...”

Current View of Industry Market Condition

Scottish Construction Industry appears to be in decline:

"Output in the construction sector has been falling now for 7 consecutive quarters."

https://fraserofallander.org/2018/01/18/q3-scottish-gdp-data-show-continued-fragile-growth/
Current View of Industry Market Condition

Scottish Construction Industry appears to have been in continual decline with spikes in growth supported from large infrastructure projects now coming to an end.

“Scottish Government statisticians believe that the sharp increase in the series was driven by large transport and industrial infrastructure developments such as the Forth Replacement Crossing, Borders railway, M8 missing link and the Shetland Gas Plant. The downturn has come as these projects have ended’

https://fraserofallander.org/2018/01/18/q3-scottish-gdp-data-show-continued-fragile-growth/
Current View of Industry Market Condition

The impact of BREXIT is uncertain and this uncertainty appears to having an impact on investment in the UK and Scotland

“Industrial and commercial building Firms with exposure to the EU in terms of sales, or international firms that had used the UK as a means to access the EU, will potentially reconsider their investment strategies, in terms of pace and scale, until the UK’s future relationship with the EU is clear. This will most likely be the case for industrial projects…..”

“Around $75bn worth of major ($50mn+) commercial and industrial construction projects in the UK are yet to enter construction..."

“The European Investment Bank invested over €7 billion in the UK in 2015 and has emerged as a major sponsor of UK infrastructure projects. There is now a great deal of uncertainty over the relationship between the bank and a post-Brexit UK.”

“Timetric’s Construction Risk Index and international ratings agencies have also downgraded the UK’s sovereign credit ratings. Standard & Poor’s, for example, cut the UK’s rating from AAA to AA, and warned that further downgrades could be forthcoming, with significant potential impact on access to funding.”

Willis Towers Watson ‘UK construction industry in a post-Brexit context’ October, 2016
Potential for growth does not appear to be improving anytime soon (maybe we should move to Wales !!)

Source: CSN, Experian. Ref: CSN Explained
Possible Future Market Condition

There is some Growth indicated within housing sector but other sectors in particular infrastructure could be extremely challenging.
Possible Future Market Condition

Overall Scottish Construction Industry appears to have potential for negative growth and reduction in employment challenges forecast.

<table>
<thead>
<tr>
<th>Regional Comparison 2017-2021</th>
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<tbody>
<tr>
<td>Annual average % change in output</td>
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<tr>
<td>North East</td>
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<tr>
<td>Yorkshire and Humber</td>
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<td>East Midlands</td>
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<td>Scotland</td>
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<td><strong>UK</strong></td>
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</tbody>
</table>

Source: CSN, Experian.
Ref: CSN Explained.
Is BREXIT an Opportunity or Economic Suicide?

Liam Fox “This Bill will ensure that we protect and grow Scotland’s position as a major trading nation, reaching out to new international markets while supporting its existing trade partners.”


Professor Sir Tom Devine “deciding to leave the biggest single trade bloc in the world as the result of a narrow majority in a referendum has to be seen as a collective act of potential economic suicide.”

http://www.heraldscotland.com/opinion/15470115.Tom_Devine__Brexit_is_an_act_of_economic_suicide_but_it_is_not_inevitable/
As BREXIT approaches some analyst sources are reducing their projections for growth for the Scottish Construction Industry.

“The CIC now expects construction output to contract by 0.2% in real terms compared to the pre-Brexit projection of 3.4% growth.”

Willis Towers Watson 'UK construction industry in a post-Brexit context' October, 2016

“analysis by the Scottish Government suggests that by 2030, Scottish GDP could be between £1.7 billion and £11.2 billion lower than if the UK remained in the EU.”

http://policyscotland.gla.ac.uk/eu-membership-and-scotlands-long-term-growth-2/
Possible Future Market Condition

A possible ‘Scottish Independence Referendum 2’ adds to the BREXIT uncertainty

“A ‘no deal’ Brexit could also be a strong trigger for a second Scottish independence referendum”

https://www.scer.scot/database/ident-3545

"There has arguably never been a time in recent history where the range of key fundamental economic policy questions facing Scotland have been so uncertain."

Fraser of Allander Institute Economic Commentary, March 2017

The Scottish Construction Industry appears to have potentially seriously challenging and uncertain times ahead
Potential Opportunities for Growth

- **Energy & Compliance** “2030 Targets... The equivalent of 50% of the energy for Scotland's heat, transport and electricity consumption to be supplied from renewable sources.... An increase by 30% in the productivity of energy use across the Scottish economy”

- **New Markets (Efw, Ibio, Accelerated Plant Growth, etc. and potential trade deals with China, India, US, etc.)** “Enable businesses to realise opportunities in new markets such as China and India”

- **Research and Development** “the First Minister announced our objective to double expenditure by businesses on research and development (R&D) in Scotland from £871 million, in 2015, to £1.75 billion in 2025”

- **Healthcare & Public Sector** “recommended that the Scottish Government should develop long-term funding plans”

- **Infrastructure** “We are pleased to see the Scottish Government's continued commitment to make broadband available throughout Scotland and to have the next generation of broadband accessible to all by 2020”
Potential Opportunities for Growth

- **Technology / IoT** “Scotland’s digital technology sector has experienced strong growth in recent years, with business and political leaders confident the upward trend will continue in the long-term” https://www.scotsman.com/future-scotland/tech/as-scotland-s-tech-sector-grows-what-will-the-jobs-of-2020-be-1-4665148

- **Space** “the space sector is now the largest of the three industries in Scotland with an annual turnover of £2.5bn, compared to £2bn for aerospace and £1.9bn for defence” http://www.heraldscotland.com/news/15779989.Scotland__39_s_space_race_brings_billions_to_economy

- **Housing** “Housing sector in particular should be boosted by the Scottish Government’s aspiration for 50,000 new affordable homes by 2020/21” https://www.citb.co.uk/documents/research/csn%202017-2021/csn-scotland-2017

- **Innovation & Creativity (creative, efficient, resilience thinking)** “construction contracting industry in particular is perceived to have low levels of innovation, measured by R&D, compared with other sectors; innovation, however, is vital to increasing productivity, delivering value throughout the supply chain and ensuring future competitiveness.” Willis Towers Watson 'UK construction industry in a post-Brexit context' October, 2016
Methods for Taking advantage of Opportunities

Contractors need to be prepared to exploit potential opportunities in the Construction Industry including:

• Health and Safety (Policies and Procedures, Equipment, PPE, CDM, PC/PD, Training, Tool Box Talks, modular, pre-fab, etc.)
• Skilled, Innovative and Creative Staff (Apprenticeships, Investors in People, training, qualifications, accreditations, etc.)
• Embrace Innovation and Creativity (Smart working, Building Information Modelling (becoming more prevalent), VR, etc.)
• Financial Stability (Sound Financial Controls to avoid Carillion repeat, BIM Blockchain Contracts, etc.)
• Equal Opportunities Employer (gender equality, race, religion inclusion, etc.)
Methods for Taking advantage of Opportunities

BYes Example: **Health and Safety**

- **HEALTH & SAFETY COMES FIRST** – *integrated* Quality Health, Safety & Environmental Management Systems – Safety management systems policed and audited by our corporate health and safety professionals who regularly attend and raise the awareness of safety issues on site

- **ROSPA – Gold Award** - Bouygues E&S Contracting UK Ltd is delighted to announce that it has achieved the prestigious RoSPA Gold Award at the RoSPA Health and Safety Awards 2017
Methods for Taking advantage of Opportunities

Byes Example: **Innovative Working**

- **CFD Modelling – Environmental Analysis** – using Computational Fluid Dynamic modelling the performance of services ensures efficient design proven in the ‘virtual environment’ prior to installation

- **BIM – Point Cloud Survey and BIM** – use of ‘Point Cloud’ scanning technology to provide safer, more accurate survey information and using BIM software to provide efficient co-ordinated solutions
Methods for Taking advantage of Opportunities

BYes Example: New Technologies

- ENERGY – **Battery Storage** - behind-the-meter grid scale Battery Energy Storage Solutions (BESS), for both the public and private sectors

- ENERGY - **Smart Energy Grids** - combine renewable technology and energy storage with smart metering, with the centrally controlled smart energy grid system
Methods for Taking advantage of Opportunities

BYes Example: **New Technologies**

- **ENERGY – Solar PV Farms** - PV is fast becoming one of the most competitive technologies for electricity generation. To date, BYes have installed 1 GW of solar technology globally.

- **ENERGY – Energy from Waste** – BYes waste-to-energy plant has a production capacity of 60 MW and will treat more than 150,000 tonnes of commercial and industrial waste.
Methods for Taking advantage of Opportunities

BYes Example: **Dijon: France’s first Smart City**

Byes have utilised advances in technology and innovation to create a ‘Smart City’ utilising the Urban Hypervisor, a solution that is connected to the city’s public infrastructure and equipment.

It gives a full overview of all assets, thereby making it possible to optimise their management and improve coordination between services. The result is more efficiency for the benefit of inhabitants and their quality of life alongside a 65% reduction in energy consumption.
Methods for Taking advantage of Opportunities

BYes Example: **Dijon: France’s first Smart City**

- Broadband and radio networks connect up all municipal infrastructure
- An urban hypervisor monitors and controls equipment and services 24/7 and in real time
- Smart systems enhance safety and security: CCTV with image analysis, abnormal event detection, automatic bollards, fire detection, signalling, traffic monitoring, city-centre access control
- Citybox transforms the power grid into a high-speed data network that supports new services: Wi-Fi hotspots, CCTV, sound systems, real-time information
- CityBox provides LED, fully remote-controlled street lighting capable of adjusting in real time to the presence of pedestrians and vehicle
- Public buildings and equipment can be managed more efficiently with optimised works and maintenance
- Control and optimisation of energy consumption via an Energy Performance Contract
- Mobility is improved, as traffic lights give priority to buses and smart parking systems guide drivers to empty spaces
- User-friendly managed electric mobility services with Alizé charge points and app
- Real-time communication between the municipality and local residents via social apps. Inhabitants are now real players in the life of their own city!
Summary - Contractor Viewpoint

• Current and Future Market conditions appears to be extremely challenging with limited opportunities for Growth

• With Opportunities being limited Contractors will have to be prepared, innovative, creative, efficient and make controlled financial decisions in order to be competitive and exploit the potentially limited opportunities

• People are Organisation’s greatest assets and staff development and training will maximise potential for innovation and creativity implementation
Please submit questions to a CIBSE Committee member for discussion during the Panel Debate.