

Composites UK: Construction Sector Group

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 What Industry needs from Duracomp – future outlook? 	



Formed in Summer 2015

- Offspring of the 'Network Group for Composites in Construction'
- Committee comprises Manufacturers, Designers, Contractors

Group Actions

- Reinvigorating NGCC Case Studies and Technical Sheets
- Development of the Bridge Design Guide (led by Toby Mottram)

Involvement with Industry Leadership – CLF

- Inputting into delivery UK Composites Strategy (Large Structures Cluster Group) input and action plan for Low Volume / Large Structures)
- Ability to influence government/other CLF members (UKTI/BIS/EPSRC/Innovate) UK)

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Knowledge Support Network

Composites Leadership Forum

- **History** CLF born out of the UK Composites Strategy 2009 together ${ \bullet }$ with HVM Catapult (National Composites Centre)
- **Remit** "Voice of UK Composites Industry"
- **CLF Stakeholders/Partners** BIS, TSB, EPSRC, UKTI, DSTL, KTN, Composites UK, NCC/HVM Catapult, British Composites Society, IMechE and CIMComp
- **Industry Sector Groups** Aerospace Growth Partnership, Automotive Council, Construction Sector Group, Large Structures Cluster Group plus many others.....

COMPOSITES LEADERSHIP FORUM Lightening the Load ivering UK growth ough the multi-secto plication of composites The 2016 UK Composites Strategy

Growth

<u>UK Composites Strategy 2016</u>

- Implementation Phase of Strategy
- Action Plans from Cluster Groups being developed
- Outcome Growing market with proposed 6% CAGR increasing to 15% CAGR
- Market Value of £2.3bn (current) with a potential £12.5bn (2030)



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Knowledge Network Support Growth **CLF Large Structures – Action Plan** Carbon reduction possibilities **Action Plan** Tech

- New cluster group
- Need develop membership

	carbon reduction possibilities	
ology	Automation 3D printing	
	Nano	
	Existing Tech	







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Knowledge Support Network Growth

Construction Differentiators

How does the Construction Industry differ to existing Composites **Industries?**

- Existing Supply Chains.....predominantly "Non Structural"
- Durability and WLC fundamental aspects
- Thick Composites Designs
- Design for typically 60 to 120 years
- Limited Knowledge

Major growth potential possible in "LARGE/LOW VOLUME"	applications
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- Durability one of the key selling points! When and what will maintenance be required during a 120 years design life. Information needed for robust 'Whole Life Costing' exercises. How can we create <u>zero</u> maintenance structures (akin weathering steel)?
- Standards Lack of standards (still in development and maturing) / how robust are the 'Material Factors' used in design, how economical are they? Are the high factors making composites uneconomical?
- Procurement Challenges no OEM's. In construction Contractors are 'Fabricators/Builders' unfamiliar with composites, need to consider 'Robustness' in design. Costs can also be highly variable, need performance specification for lightweight composites and thick composites

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Growth

Knowledge | Support | Network

Designer Requirements

- **Standards** Need robust standards, Eurocode under development
- **Guides and Best Practise** Need guides and examples, Bridge Design Guide being drafted
- Which Materials Materials selection advice? Numerous products How best to combine for different circumstances? Economical use of Carbon? Bio composites to reduce C02 footprint. Durability information will help make materials decisions
- Levels of Liability This is a going concern for the



industry: How can Duracomp help to reduce uncertainties and bring about more widespread acceptance?

• Life Cycle Assessment - Need to understand lifecycle assessment and maintenance costs and requirements to permit valid comparisons to be made with traditional materials

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- Scope Contractors may well be the next OEM's
- Costs Lowest price always wins, hence for cost comparisons to traditional need to understand buildability savings and designs need to be economical
- **Materials** Need guides and examples including handling, storage and installation workmanship standards
- **Skills** different skills needed to that of traditional contractor/builder. Cross sector involvement or upskilling?
- Training need to train industry and find new people
- Levels of Liability Going concern, as earlier discussed: How can Duracomp help?



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Knowledge Support Network Growth **CEPUTION CONTRUMENTS OF CONTRUCTIONS** • Model Life Cost - Determination of WLC/maintenance requirements • Sustainability - Energy Information required including CO² footprints • Service Life (120 year design life) – how do we succinctly prove life span is possible • Network • Crowth

 Section Design (Thick Sections) – design and fabrications issues/WLC/deterioration mechanisms knowledge





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Company pages on Facebook, Google+, and LinkedIn – search for Composites UK.

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