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The future of Engineering Degrees – a perspective from the RAEng

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EPC Congress, Edinburgh, April 2009



Background

- ▶ *Educating Engineers for the 21st Century* – June 2007
- ▶ London Engineering Project → STEM initiative
- ▶ *The Race to the Top* – Lord Sainsbury's Review of Government Science & Innovation Policies – Oct 2007 → “Experience-led Engineering Degrees”
- ▶ *Engineers for Enterprise Study*



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The Race to the Top

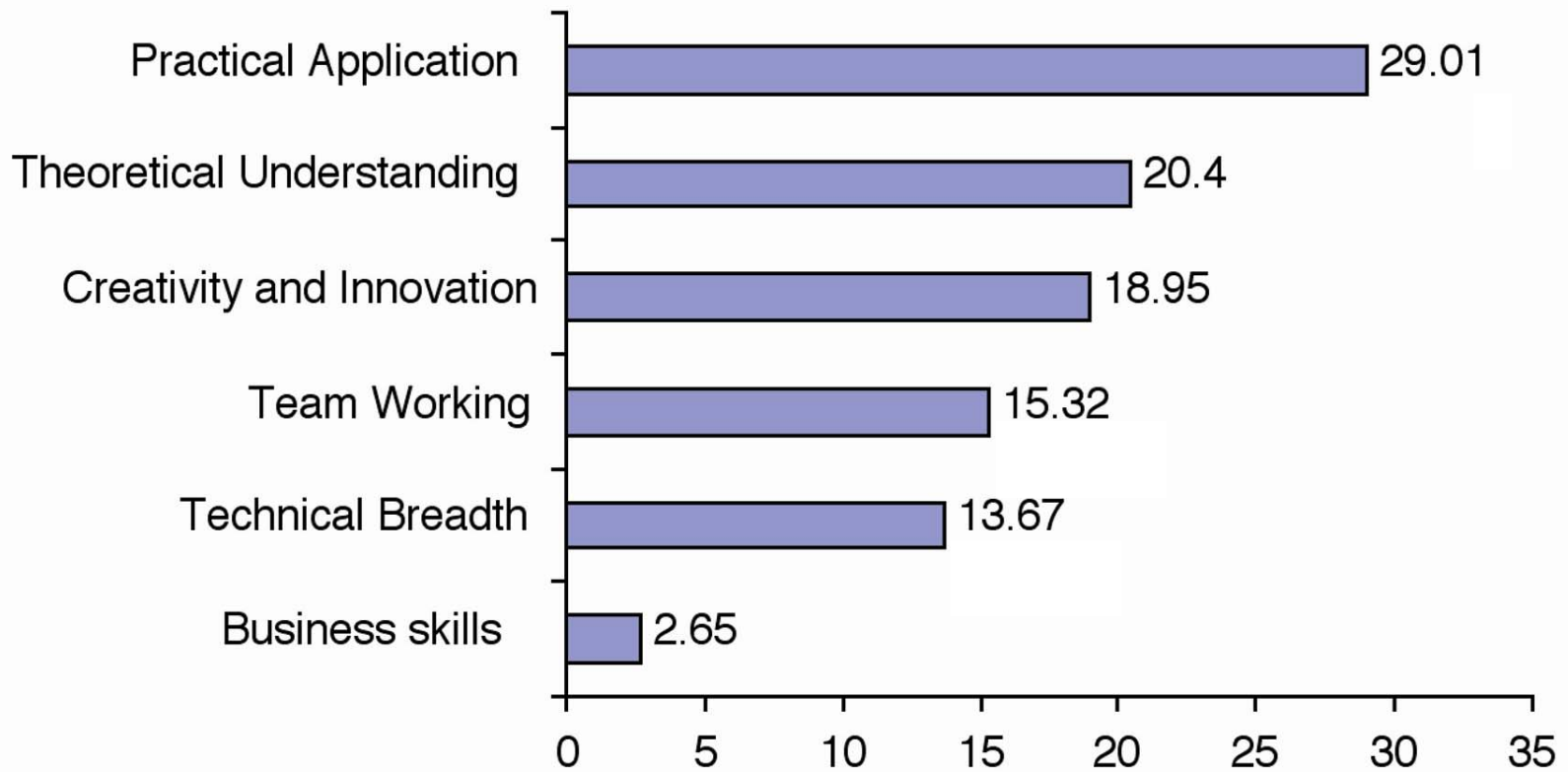
*Need for **experience-led engineering degree(s) (ELED)***

- ▶ Integrates technical, operation and business skills
- ▶ Meets the constantly evolving requirements of industry
- ▶ Attracts the most able students to study engineering
- ▶ Motivates them to become engineers on graduation




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Industry priorities for engineering graduates





A portfolio of possibilities

- ▶ Enhancement of Traditional Lecture & Laboratory Teaching
- ▶ Active/Experiential Learning 
- ▶ CDIO Implementation 
- ▶ Problem-Based, Scenario-Based and Enquiry-Based Learning Approaches
- ▶ Sandwich Placement
- ▶ Industry Sponsored Bespoke Courses
- ▶ Blended (e-learning and face to face) Learning



A set of desirable outcomes

(Academy evidence to the IUSS Select Committee)

- ▶ A-levels which prepare and discriminate
- ▶ A proper Diploma pathway
- ▶ Increase in women and ethnic minorities
- ▶ Increased recognition of excellent teachers
- ▶ Reduced distortion from impact of RAE / REF
- ▶ Increased (real) involvement of industry
- ▶ Increased amount of active learning (eg CDIO)
- ▶ Increased unit of resource

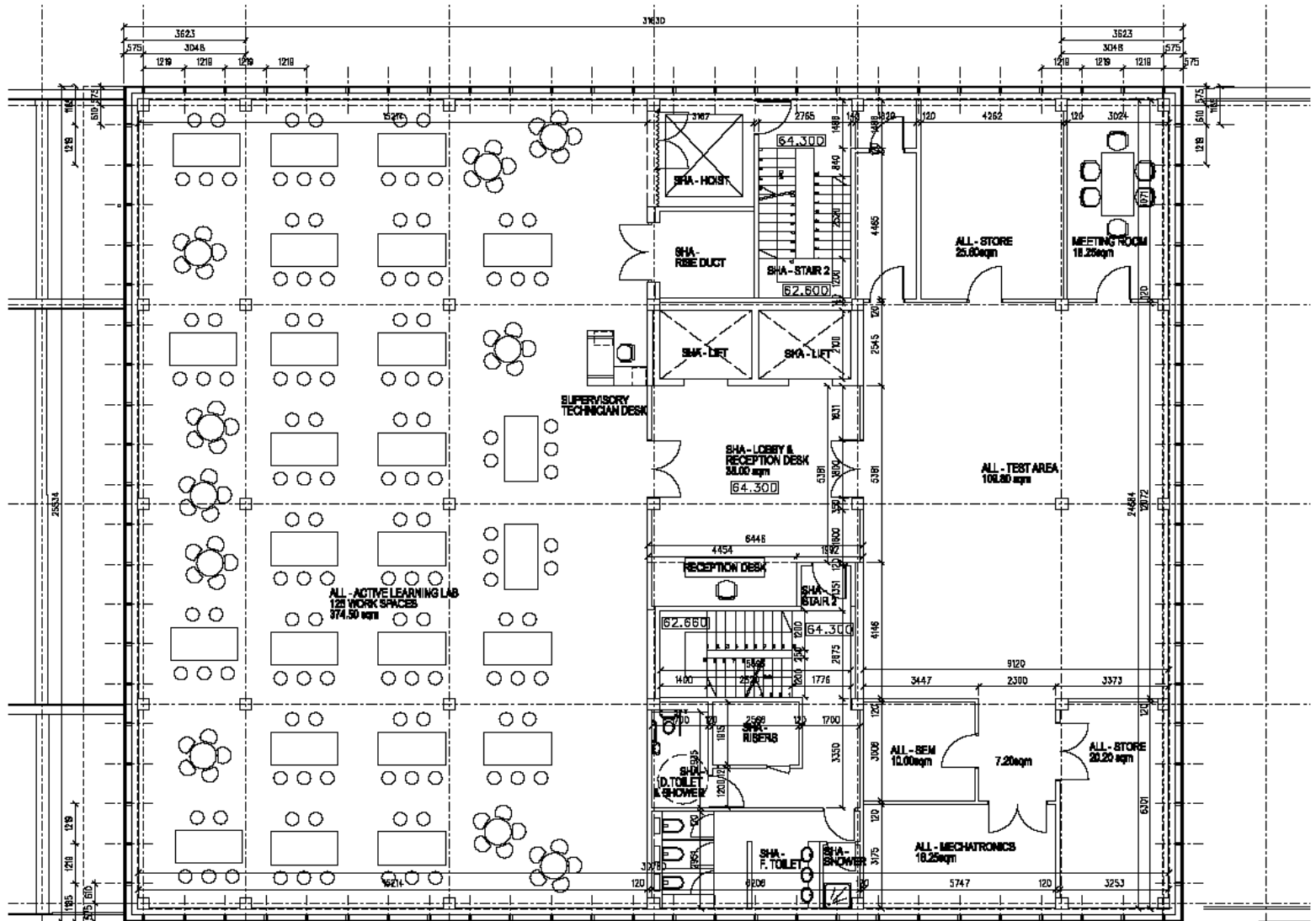


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Thank you for your attention



The Liverpool Active Learning Labs





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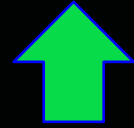
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CDIO



Conceive – Design – Implement – Operate

- ▶ MIT-led international collaboration
- ▶ 35 members across the world
- ▶ UK-Ireland region led by Liverpool and QUB
- ▶ Context for active/experiential learning
- ▶ Systems approach / teamwork / professional values
- ▶ www.cdio.org