Inspiring the Next Generation

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Abstract

This paper presents a hands on approach to inspiring more young students to consider careers in the industry through creative, interactive workshops with a real design challenge.

Keywords: Creative design, Community outreach, Pavilion, Students

1 Who are the next designers?

Each year the UK fails to produce enough engineering graduates to fill the roles available; the estimated shortfall is as much as 55,000 per annum [1]. This skills gap presents a risk to the UK economy [1]; Architecture and structural engineering currently draw professionals from a predominantly white, male and middle class subset of society [2-4]. This leads to an unrepresentative demographic taking decisions on our built environment. It also exacerbates the skills shortage by reducing the pool of available graduates.

To address these issues positive action needs to taken. This can be tackled at a national scale by large institutions [5-8], but also at a local scale by small groups of self-organising young professionals.

This paper presents a series of projects completed in London between 2015 and 2017 by Scale Rule, a collective of engineers and architects. The project aimed to inspire key stage 4 and 5 students (14 - 18 years old) from demographics currently underrepresented in the built environment industry to consider careers in engineering and architecture.

By placing an emphasis on the creative aspects of built environment design, students who have no prior knowledge of the industry can develop an understanding of design and the profession. By liaising with schools pre-selected by educational charities including teach first and the access project we engage with students from lower income families and/or black or minority ethnic backgrounds.

2 The Pavilion Projects

The best way to learn is to do. The premise of the Pavilion Projects is for teams of students to learn about the design process by developing a real brief over two days of workshops, culminating in each team presenting their final design to a panel from industry and academia. Teams of between 2 and 6 students are each mentored by an architect or structural engineer to help them through the design process by challenging them to think about relevant design constraints - such as access, buildability, stability, user interaction - and teaching them about how to communicate their
ideas - through sketching, model making and presenting. By employing a collective approach to tutoring, many participating professionals commit a small amount of time to introduce students to the industry, reducing the time commitment to something manageable for busy professionals.

In parallel to the design development runs a seminar stream on the fundamentals of architecture, structural engineering, construction, and sustainability - with a focus on the career route as well as the work.

A crucial component of any Pavilion Project is the imminent reality of the brief. On the first morning of the workshops the students are taken to the site where the pavilion will be located, and it is explained that the selected student design from the crit will be developed into a scheme which will be realised in less than 4 months. The tangibility of the project, and the desire to see one’s design developed to construction galvanises student engagement.

Scale Rule have run the Pavilion Project three times since 2015, with 75 students from 13 schools contributing to the design and build of pavilions showcased in Clapton, Clerkenwell and Croatia. The workshops are only completed with the volunteer assistance of over 40 dedicated industry professionals who help organise, lecture, tutor and critique over the weekend, and design and build the pavilion afterwards.

Lastly, but by far the most important, we’d like to thank all of the wonderful and dedicated helpers we’ve had the pleasure in working with over the years.

3 Conclusions
The Pavilion Projects are now in their third year, and continue to develop, engaging more students, tutors, companies and institutions. The premise is simple: inviting students over a weekend to learn about architecture, structural engineering and design through a real brief; and over a second weekend to learn about design development and construction by building it. This has proven an effective and repeatable way to engage young people from underrepresented demographics in architecture and structural engineering.

Scale Rule are constantly on the lookout for new people to get involved and new collaborations so get in touch if you like what you’ve seen www.scalerule.org

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5 References
[4] https://www.theguardian.com/education/2016/may/03/engineering-apprenticeships-courses-women-engineers-education-degrees