LUCY HELME PRESS RELEASE

I graduated this year with an MA in Industrial Design Engineering from the Royal College of Art. Before that I completed a PhD in physics, looking at the detailed structures and symmetry in new materials. I love design because of the magic of seeing ideas transformed into three dimensions. I see in design the same concepts and challenges that I saw in physics. I'm still interested in structures, patterns, symmetry, growth – and focussing on design means I can apply my skills to problems relevant to people today, on a human scale rather than a microscopic one. My MA graduation project applied mathematical algorithms to the design process to enable mass-customization of products through computer-aided manufacturing. Science has a lot to offer design, and vice versa. I want to work on more projects where the two cross over: this is what really excites me.

GRADUATION PROJECT SELECTED FOR TALENT ZONE AT TENT LONDON
Project title: a little extra space (generative garden microarchitecture)

Short explanation:

Algorithmically generated garden buildings, which provide a contemporary alternative to the traditional garden shed or summerhouse: a little extra space outside.

The design process allows personalization: people input the size of their garden, and details such as how much sunlight or privacy they want in the space. Structures are then generated to fit their parameters.

The generative design algorithm, combined with computer aided manufacturing techniques, allows mass customization of the final product: every structure is unique.

Longer explanation:

a little extra space is a project on the boundary between product design and architecture. It is a new way of designing mass-customizable and affordable small buildings using generative algorithms. The resulting structures have an exciting aesthetic, and provide a contemporary alternative to the traditional garden shed or summerhouse: a little extra space outside.

The design process allows personalization: people input the size of their garden into the software, and details such as how much sunlight or privacy they want in the space. Structures are then generated to fit their requirements. The generative design algorithm results in beautiful organic forms, far removed from the traditional garden shed.

After further customization of materials and finishes the software generates CAD files to be sent for manufacture. This automated process, combined with the generative design algorithm, allows uniquely customized buildings to be produced at a reasonable cost to the consumer.

a little extra space was presented at the Royal College of Art summer show in July. The brief I set myself was to design small buildings for the domestic garden, with the level of personalization and the exciting aesthetics achievable by employing an architect, but at the cost of a mass-manufactured product. The solution was to exploit computer-aided manufacturing techniques, and to automate the design process, to make the design and manufacture of unique structures affordable.

The generative algorithms were inspired by research into growth, pattern and structures. In this project I was inspired by many designers and architects, but particularly by the work of Cecil Balmond and the Advanced Geometry Unit at ARUP, Aranda/Lasch and Thomas Heatherwick.

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