

Soft Garniture: Developing hybrid materials between academia and industry.

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Abstract

This paper analyses the development of a hybrid material: Girli Concrete. The material has evolved out of a cross-disciplinary, funded research project involving a textile designer, an architect and a concrete manufacturing firm. The project brings together concrete and textile technologies, testing ideas of concrete as textile and textile as structure. Architecture and Textiles have an odd, somewhat unresolved relationship. Confined to a subservient role in architecture, textiles exist chiefly within the categories of soft furnishings and interior design. This project aims to mainstream tactility in the built environment, by raising the human interface to the same specification level as the technical. This paper will briefly chart the background and wider theoretical concerns to the project; more particularly, the paper will examine the role of collaborative processes in creating innovative hybrid outcomes. This is innovation based not on new knowledge/ technique but rather the application of 'old' knowledge to new contexts, materials and scales. It is a plea for architects and researchers to occupy the ground of designing new materials and products for the built environment, in an acknowledgement that space is determined not just by how materials are used but also by the nature of the materials/ built environment products themselves. The paper will argue that architects, in collaboration with universities and other disciplines, should seek to create space for creativity and experimentation, not only through an engineering but also a user-centred model of artistic practice and product development.

Keywords: concrete, textiles, building products, collaboration, innovation, user-centred, creative practice, hybrid materials

1 Background

Girli Concrete is a collaboration between a textile designer and an architect. Conceptually it sets the utopian challenge of bringing together hard and soft materials; and the technologies of two diverse but traditional Northern Irish industries: construction and textiles. Practically, the project has secured funding from Higher Education Innovation Funding, Arts and Humanities Research Council Funding, Arts Council of Northern Ireland Funding, Private Commissions, Integrated Art and Design Commissions (Big Lottery) and more recently the project has received significant matched funding from the University of Ulster's Technology and Knowledge Transfer Company to begin a spin out company. A leading producer of concrete products technically supports the project and descriptive details about the process and the products of Girli Concrete can be found on the project blog (<http://girliconcrete.blogspot.com>). Whilst the list of financial and technical support implies 'success', it is also a project that has raised questions about the wider context of working in this way in academia. To that end this paper intends to focus on two questions:

- How can we fruitfully marry a practical project to an academic context?
- How does the resultant project and process differ by being in an academic context?

2 Intellectual Framework

Although this is new territory for both project partners, they naturally bring experiences, skills and some unresolved ideas from previous work. In Practice there is typically more drive to progress projects as quickly as possible but in Academia there is an obligation to reveal and examine the context for activity, not least because with a background in architectural pedagogy one of the project partners has a longstanding commitment to the interrelationship between creativity and representation. So, as the practical elements of the project have evolved so too has representation and contextualisation of the work, revealing new conjunctions of knowledge and principles of practice.

Hands-on Influence. The Textile Designer has over 20 years experience in industry, successfully designing textiles for the fashion industry. She brings to the project:

- A sense of expediency when it comes to product development in order to track or where possible lead market trends
- The need to be Hands-On and in control of the technical development of the aesthetic; trialling, testing and ultimately crafting each technical move.
- An understanding of tactility as the result of appropriate technology.

Overall such working methods/ skills offer a challenge to contemporary architectural practice, but if we focus on the issue of tactility, we can reflect on Architecture's (particularly in UK culture) expression and celebration of technology to the point where it can and often does dominate, becoming the first

and the last interface that the user has with the building. In contrast, interacting with a textile is a personal and unique *cosy, cuddly, slippy, scratchy, warm* encounter. Simultaneously, one experiences an intimate physical and aesthetic reaction. Behind this emotive experience of textiles lies a world of technical expertise. It is the remarkable achievement of textile designers to take ‘hard-core’ technologies and transform them into something that evokes such responses. The girli concrete project learns from this and finds resonance in the words of Peter Rice, “...*make real the presence of the material in use in the building, so that people warm to them, want to touch them, feel a sense of the material itself and of the people who made and designed it.*” (Rice [1994])

Inclusive/ Feminist.

The architect/ academic had worked previously with inclusive design (evolving from disability studies) and feminist concerns around the built environment. The girli concrete project draws on this by

- Developing a user centred model of artistic practice and product development;
- Raising the human interface, i.e. the aesthetic and in particular the tactile aesthetic, to same level of specification as the technical.
- Demystifying the process through dissemination (included in Woman’s Design Service’s Database on Gender and the Built Environment) and using a blog to recount the development of the project.
- Provocatively titling the project ‘girli concrete’ to openly signal an unconventional, non-mainstream approach.

Historical. As we work practically on the project we are at the same time developing academic papers. Defining and researching contexts for the work has allowed us to understand the work within a range of historical and theoretical contexts:

- The architectural legacy for material sense of space as characterised by the work of Pallasmaa, Rasmussen, Holl, Franke, Bachelard etc
- The shifting relationship between architecture and textiles – from the Kurgan tombs in the High Altai (Hann 2007) with some of the earliest remaining textiles to the recent developments of nano and smart ‘architextiles’ (Garcia 2006).

Through this process of contextualising, analysing and describing we have begun to realise that architecture uses textiles both literally and conceptually. When used literally, textiles are typically framed and strictly regulated; taut, stretched and controlled; they are the ‘smart’ petrochemical constituents of lightweight, space age structures, seen but not touched. And where there are used conceptually it is their characteristics of ‘lightness, surface, complexity and movement’ that mirrors ‘architecture’s shifts towards a more fluid state’ (Garcia 2006). Overall the result is architecture that may **look like** and indeed may even appropriate textile technologies, but rarely **feels like** textiles. (There are of course some interesting exceptions)

Such Intellectual Frameworks lead us to advance girli concrete as a project that **aims to mainstream tactility in the built environment.** Whilst it may sound

utopian it helps guide and formulate the project even within the scope of a business plan.

3 Hybrid Processes and Opportunities

Although it is utopian and theoretically situated, girli concrete is neither an art nor an applied art project. It is also not traditional product development, since it is neither driven by an identifiable market nor an existing problem. Pragmatists struggle with the practicalities of it, questioning why one would deliberately place soft, delicate substances into a harsh alkaline environment. But the project persists, driven mostly through a strong sense of fun, a set of principles and a process of visual and theoretical critique. The project moves forward by a process of play, research, craft, and real life deadlines. PLAY to generate unlikely outcomes; RESEARCH to solve technical issues, define the territory and identify supportive partnerships; CRAFT to trial, rework, perfect and humanize the product and process; and REAL WORLD DEADLINES to inject Pace and Meaning (in an academic context!). The project works across a range of networking and funding opportunities within and beyond the university. It is understood as research, experimental design practice and entrepreneurial activity and is presented across a range of platforms such as exhibitions, craft events, business forums etc. Such hybrid opportunities would seem to map against many design based activities situated within academia

4 Reflection

Hybridity however challenges the language and culture of most disciplines and requires a high degree of flexibility and persistence. Working between the interfaces of industry and academia, practice and theory, exposes the prejudices of both and their miss-match. Universities talk about practice-led research but have simultaneously degraded their technical provision and dis-enfranchised the associated technical staff. Administrative mechanisms do little to match external time/ cost lines and accountability procedures overload small, fast-moving projects in ways that are simply unsustainable.

Despite that, as academics we are in a privileged position. We do not have to, nor indeed should we, replicate traditional practices / processes. We have time (it's relative!) and intellectual space to work in creative and challenging hybrid arenas; we are able to access a wide range of advice, funding and resources to support such activities and we can do so at no personal financial risk. None of these conditions (especially the latter) should be underestimated.

Finally we have come to understand that girli concrete is as much about creating a product as refining a process. We now recognise it as the pilot project in an ongoing, larger and systematic interaction between textiles and construction.

5 References:

Franck K, Lepori, B, *Architecture from the Inside Out: From the Body, the Senses, the Site and the Community* John Wiley & Sons 2007

Garcia, M. *Architextiles_AD*; Wiley Publication Nov 2006

Hann, M. The Great Pazyrk Felt: a stylistic analysis of a deep frozen treasure from kurgan 5 in the High Altai, *Proc. of Ars Textrina International Textiles Conference*, University of Ulster, Sept 2007

Holl S, Pallasmaa J, Perez-Gomez A. *Questions of Perception: Phenomenology of Architecture*, - Architecture – A + U publication 1994

Textile: The Journal of Cloth and Culture; special Issue Shaping Space: textiles and Architecture Vo, 4 Issue 3 Fall 06

Pallasmaa, J. *The Eyes of the Skin: Architecture and the Senses*, John Wiley & Sons, 2005

Rice P. *An Engineer Imagines*. Artemis, Zurich 1994