

Textile Researchers Develop Patent

According to Anne Jørgensen, chief designer in the textile company Kvadrat, there is scientific documentation that pleasant physical surroundings speed up recovery for hospitalised patients. In the framework of the Textile Consortium, Kvadrat cooperates with textile researchers at Kolding School of Design to develop products for the new hospitals that are currently being planned in Denmark. The company has recently taken out a patent for a three-dimensional material that researchers have created through experiments focused on aesthetics, function and sustainability.

By Hans Emborg Bünemann

Since Kolding School of Design launched the Textile Consortium in 2005, the design school has brought together researchers and textile companies on several occasions for workshops and seminars to present the results of textile research and offer a forum for dialogue about these new insights. The textile company Kvadrat is one of the companies that take part in these events.

The CEO of Kvadrat, Anders Byriel, is excited about the research that Vibeke Riisberg and Joy Boutrup, both associate professors at Kolding School of Design, are responsible for.

“I am impressed by the textile research and the exciting solutions that the researchers are coming up with,” says Anders Byriel. “It’s obvious that they know what they’re doing. They have a good grasp of materials, methods, and real-world conditions.”

Research Promotes Product Development

Kvadrat is involved in two of the research projects undertaken by Kolding School of Design – *Regulering af dagslys* (Adjusting daylight) and *Tekstiler til fremtidens sygehuse* (Textiles for future hospitals). The latter project is part of a larger effort that receives support from the programme for user-driven innovation under the Danish Enterprise and Construction Authority.

Part of Kvadrat’s motivation to work with the textile researchers is that the company intends to develop products that are better at managing the influx of daylight. Anne Jørgensen, chief designer at Kvadrat, explains:

“On the one hand, daylight should reach far into the room, but



As part of the project *Tekstiler til fremtidens sygehuse* (Textiles for future hospitals) the textile researchers' field studies – here at the laundry service Syddanske Vaskerier – found that maintenance and hygiene are key parameters in the development of interior design textiles.
Photo: Vibeke Riisberg

on the other hand it shouldn't bother anyone in the room. Textiles are our material, and the knowledge that the researchers provide offers important input to our product development."

Patent With Potential

At one of the textile consortium's seminars in relation to the research projects, the researchers' presentation of the idea for a new type of light screening captured Anders Byriel's attention in particular. Kvadrat has now taken out a patent for one of the smart ways of using textiles that the researchers derived through experimentation. The key is to allow the daylight in at a particular angle, says Anne Jørgensen.

"The textile researchers' experiments with the materials led to a sort of honey-comb," she says, "a three-dimensional entity that projects the sunlight into the ceiling to avoid glare. At the same time, the solution does not block the view through the window. That presents a future potential to us, not least in the hospital sec-

tor, which represents an important market to Kvadrat. The challenge lies in product-developing the patent and, not least, finding someone capable of manufacturing it."

Healing Architecture

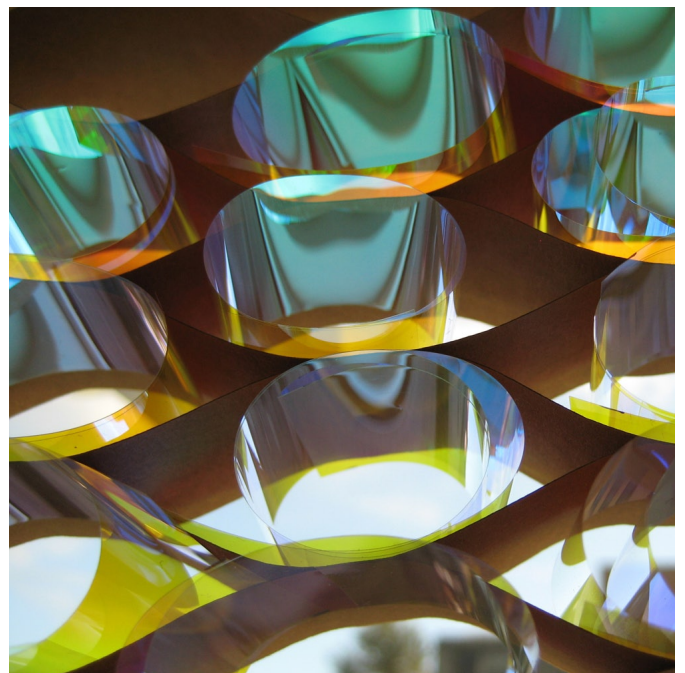
According to Anne Jørgensen, the discipline of healing architecture has provided scientific evidence that patients who are in a physically calm and pleasant environment recover faster and are released sooner. This knowledge motivates Kvadrat's desire to be involved in the development of new hospitals in Denmark.

"It would be great to be able to help make future hospitals both better and cheaper," she says. "The path from theory to practice can be long, but that's okay as long as the theoretical effort leads to a useful result in the end."

Equipping Salespeople with Knowledge

"With the research-based knowledge from the Textile Consor-

Adjusting daylight– Experiment 2. Experiments with materials form a key part of the research project *Regulering af dagslys i offentligt miljø* (Adjusting daylight in the public space). Here, a honeycomb structure: paper combined with a reflecting polymer foil that changes colour when viewed from different angles. Under certain light conditions, the foil is transparent – almost colourless – in others, it is intensely colourful. The material is interesting in relation to environmental concerns, since the colours are produced entirely through light refraction without any use of pigments.
Photo: Vibeke Riisberg



tium, for example, we're able to equip our salespeople to dialogue with architects and purchasing departments in charge of decisions about interior design and the choice of materials for the large new hospital complexes," she adds.

The purpose of the research project *Tekstiler til fremtidens sygehuse* (Textiles for future hospitals) is to map the use of interior design textiles in hospitals and to consider them in relation to other textile categories such as linen, uniforms and patient clothing. Vibeke Riisberg, who is the coordinator for the project at Kolding School of Design, explains,

"We aim to achieve a common understanding of the context that the textiles enter into, shared by the many stakeholders who are involved – buyers, nurses, doctors, cleaning staff, laundry managers, architects and representatives of the project organisation for hospital construction in the Region of Southern Denmark. For example, in a co-creation process at a workshop we had the groups identify and motivate both functional and emotional needs."

Enhancing awareness of the users' emotional and aesthetic needs is a crucial aspect of the project, says Vibeke Riisberg.

"Traditionally, the emotional and aesthetic aspects receive less attention than the functional requirements that the laundries, decision-makers and hospital staff have for the products. On a general level, the project is helping to develop a common language across the stakeholders' various professional points of view," she says.

The Consortium as a Platform for Cooperation

In 2005, the Textile Consortium was established by Kolding School of Design with support from the Danish Centre for Design Research as a forum for knowledge sharing, where the encounter of the various players in the textile area creates a basis for synergy. According to Vibeke Riisberg, who was a key driving force in the consortium from the outset, offering companies a means of bringing research-based knowledge into their product development departments was a corner stone of the consortium efforts.

"In the research environment we examine and analyse aesthetic factors, new materials and technologies, among other things – and do experiments based on principles of sustainability that have to accommodate both functional and aesthetic properties of textile products. We are keen to pass on the knowledge that this produces in the form of well-founded input for the companies' designers and management," she says, adding,

"With the Textile Consortium we have created a platform that brings together knowledge and research in textile design to the benefit of companies and researchers both in Denmark and in an international context. The goal of the consortium is to unfold visions and to promote the interaction of materials, aesthetics and technology as well as interaction between the research environment and the textile companies. Kvadrat's patent is an example of this interaction."

DANISH CENTRE FOR DESIGN RESEARCH

The Danish Centre for Design Research DCDR comprises the design researchers at the Aarhus School of Architecture, The Danish Design School, Designskolen Kolding and the Royal Danish Academy of Fine Arts, School of Architecture. The DCDR aims to contribute to establishing a strong design research environment in Denmark and to strengthen the exchange of knowledge about design research and facilitate the identification of potential areas of collaboration for researchers, schools and enterprises, on a national as well as an international level.

Regulering af dagslys i offentligt miljø (Adjusting daylight in the public space)

is a research project at Kolding School of Design. The project aims to combine functional and decorative aspects, because both the amount of daylight and the aesthetic appearance of the environment are key for our physical well-being in the workplace. The purpose is to promote the use of daylight in order to save energy and create a pleasant influx of light that can be regulated to match office workers' individual needs. The project has received support from the Danish Centre for Design Research, the research funds under the Danish Ministry of Culture, and Kvadrat.

Textiles for future hospitals

is a research project involving Kolding School of Design, The Danish Design School, the Technical University of Denmark, and the textile companies Kvadrat and Trevira-Neckelmann. The project is co-funded by the programme for user-driven innovation under the Danish Enterprise and Construction Authority.

The Textile Consortium

is a professional forum for the development of the textile field. The consortium offers a platform for collaboration between the design schools, research institutions, and private companies. The purpose is to enhance the quality of education, research, production, and the use of textiles in a broad context. The consortium also aims to visualise the potentials of textile design unfolded as a visionary interaction of materials, aesthetics, techniques and technology. The consortium is headed by Mathilde Aggebo, head of Institute for Product Design at Kolding School of Design.

The Textile Consortium was established around a study of the potentials of the textile area carries out by Kirsten Nissen and Anne Louise Bang, both currently Ph.D. scholars at Kolding School of Design. The study, which was funded by the Danish Centre for Design Research, produced the report *Forskning i tekstildesign – en undersøgelse af potentialer* (Research into textile design – a study of potentials).

Read about consortiums under the Danish Centre for Design Research (in Danish).

Read about industrial Ph.D. scholar Anne Louise Bang's research project in collaboration with the textile company Gabriel: *Like Being Inside a Kaleidoscope*, Mind Design #12.

Cover photo: Adjusting daylight - Experiment 1.
Photo: Vibeke Riisberg.

MIND DESIGN

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