

## Evaluation: **Product Realisation** (started after the evaluation period)

Programme director: Prof. Dr. Ir. W. Poelman

Research staff 2008: 5.91 fte

### QANU Research review Industrial Design TUE & UT

#### Review Committee:

#### *Short description*

1. **André Rotte**, director Design Initiatief, former vice President Philips Design  
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The mission of the programme is to develop and transfer knowledge related to the optimal use of product technology in the industrial design engineering process and to apply this knowledge in product design. The aim is to contribute to the valuable and sustainable application of technology in society.

Four sub-programmes are distinguished within the chair:

2. **Hans Dirken**, emeritus professor Industrial Design Engineering, TU Delft  
[h.m.dirken@io.tudelft.nl](mailto:h.m.dirken@io.tudelft.nl)  
[http://www.leiden.pvda.nl/wie\\_is\\_wie/wijkambassadeurs/wijkambassadeurs\\_medewerker/25/t/hans\\_dirken](http://www.leiden.pvda.nl/wie_is_wie/wijkambassadeurs/wijkambassadeurs_medewerker/25/t/hans_dirken)

- Technology diffusion in design as the core research issue (Poelman and Beusenbergh);

- Mobility, sociality and safety (Poelman);

- Industrial Building Innovation (Poelman);

- Cradle to Cradle (Poelman).

Outside the chair, five sub-programmes are presented as



3. **Sidney Fels**, director Human Communications Technology Laboratory, University of British Columbia [ssfels@ece.ubc.ca](mailto:ssfels@ece.ubc.ca) <http://www.ece.ubc.ca/~ssfels/>



4. **Simon Fraser**, Victoria University of Wellington, Head of the School of Design, director of the programme Industrial Design. [simon.fraser@vuw.ac.nz](mailto:simon.fraser@vuw.ac.nz) <http://www.vuw.ac.nz/design/index.php>



5. **Chris McMahon**, Professor of Engineering Design and Director of the Engineering Innovative Manufacturing Research Centre at the University of Bath, [c.a.mcmahon@bath.ac.uk](mailto:c.a.mcmahon@bath.ac.uk) <http://staff.bath.ac.uk/enscam/>

part of this research programme:

- Transformable Green Buildings (Durmisevic);
- Materials Engineering (Akkerman);
- Biomedical Product Development (Koopman);
- Sound Design and Perception (De Boer);
- Friction and Tactility in Product-User Interactions (Schipper).

Since the period of the review terminated at the end of 2008 and the Product Realisation Programme was founded in December 2008, the Review Committee decided it would be unreasonable to score the programme after such a short period. However, the self-assessment report did provide valuable insights into the structure and vision for the new programme and the Committee felt it would be appropriate and constructive to respond to this information with written feedback.

### **Quality**

The research projects and publications currently in progress or emerging from the programme are heavily influenced by the collaborative partners in the Faculty of Engineering Technology; to the point that the focus of the research and the methodologies used do not distinguish themselves significantly from Mechanical or Civil Engineering research. While this is in line with the current broad mission of the programme, the Committee agrees with the suggestion in the SWOT-analysis that consolidation is necessary in order to achieve a clearer design identity.

There is very sound strategic value for the Faculty in leveraging the product technologies emerging from its many research programmes, however in order to engage these technologies to their full potential with new and innovative applications (including aesthetic innovation) there is a need to develop research that is specific for Industrial Design Engineering. Not only will this achieve greater marketability and consumer acceptance for these technologies (i.e. value)



6. **Michael Tovey**, director for Design, Coventry University, [m.tovey@coventry.ac.uk](mailto:m.tovey@coventry.ac.uk)  
<http://www.coventry.ac.uk/cu/schoolofartanddesign/industrialdesign/staff/a/3276>



7. **Surya Vanka**, Design and Usability Training Manager, Microsoft USA  
[surya.vanka@microsoft.com](mailto:surya.vanka@microsoft.com)  
<http://www.microsoft.com/design/article.aspx?type=people&key=suryavanka>



it will also help to establish a clearer research capability and identity for the programme.

### ***Productivity***

It is difficult to assess productivity since most of the publications and outputs predate the formation of the PR programme and are largely co-authored by researchers outside the programme. While this strong multidisciplinary collaborative network is an efficient strategy for kick starting a new programme it will need to be carefully managed in order to guarantee commitment from the collaborative partners in other departments. There is also a concern that with so many 0.01 FTE appointments there is a risk of setting up a 'virtual' research group which lacks cohesion and focus.

### ***Relevance***

The programme is well positioned to have very significant relevance on a number of levels:

- o It serves as a model to inform the design professions and other disciplines on the role design can play as a catalyst or integrator mediating between technologies, industry and the user.
- o The general areas of research focus, i.e. technology diffusion, sustainability, mobility and safety, all have significant relevance to society.
- o The emphasis on the entrepreneurial aspects of design promises to reach an audience beyond academic circles in the form of start-ups and manufactured products.

These considerations form a strong foundation for the programme, however the challenge will be to realise that potential as the programme grows.

The Committee noted that most of the publications are in engineering or scientific journals and conferences. There is a

need to enhance the design relevance of the programme and to disseminate it through accredited design research journals and conferences.

**Research groups in this assessment:**

TUE:

[Designed Intelligence Group](#) (DI), Prof. Matthias Rauterberg

[User Centered Engineering Group](#) (UCE), Prof. Berry Eggen

[Designing Quality in Interaction Group](#) (DQI), Prof. Kees Overbeeke

[Business Process Design Group](#) (BPD), Prof. Brombacher

UT:

Design Engineering (OPM-DE), Prof. Fred van Houten

Product Design (OPM-PD), Prof. Arthur Eger

The Committee noted the good contribution the Chair for Product Realisation (Poelman) in collaboration with the Chair for Product Design (Eger) is making to Industrial Design on a national level as editors of the professional magazine 'Product'. These activities serve as a model for expansion into a wider international arena.

### ***Viability***

The PR programme clearly supports the whole Faculty as a product developer with a clear strategy of technology diffusion and product realisation while calling on the behavioural sciences to connect technology to users and vice versa. In this respect the Committee believes the viability of the programme is high. However, the combination of a wide range of collaborative partners and very diverse research areas risks dissipating efforts to build a strong and cohesive research programme.

There is an urgent need to distinguish the programme from its partner disciplines of Civil and Mechanical Engineering with a clear design research agenda. The programme should not see itself, nor be seen, as just a support group for other disciplines. It needs to develop a unique identity with its own design specific methodologies and approaches to research which complement rather than duplicate engineering research. To achieve this goal the current core expertise described as "presenting potentialities to designers" could appropriately be expanded to "capitalising on potentialities by design research" and the creation of new knowledge out of this scenario.

### **Conclusion**

The Committee acknowledges Product Realisation as an ambitious new programme which promises to play an important integrative role in the Faculty of Engineering Technology. In order to leverage this potential two main

challenges need to be addressed: resources and identity.

### ***Resources***

There is a concern that with a total of 1.44 FTE tenured research staff in 2009 (made up of a majority who are 0.10 FTE) the programme is under-resourced. While there are significant numbers of PhD students to call on for teaching and research, more depth in permanent staff is required in order to maintain continuity. Given the pending retirement of the Chair the Committee recommends that a high level appointment with the necessary design expertise and international reputation be made sooner rather than later.

### ***Identity***

In view of the collaborative interdisciplinary nature of the programme the Committee feels it is important to maintain a balance between diversity and focus and to consolidate the programme with a clear design identity. There is already awareness within the programme of the need for consolidation but greater emphasis also needs to be given to establishing a more evident design focus to the research agenda. It should be noted that this does not infer greater emphasis on styling as an approach to design.

With these two aspects in mind the Committee supports the need to undertake an 'inventory' of research activities (see 'Analysis' p149 Self Review Report) in order to focus the programme and to gain full commitment and resources from the Faculty of Engineering Technology.