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The sustainable design network

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REPOSITORY RECORD

Lofthouse, V.A., and T.A. Bhamra. 2019. "The Sustainable Design Network". figshare.
<https://hdl.handle.net/2134/1017>.

The Sustainable Design Network

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ABSTRACT

The UK based Sustainable Design Network set up in November 2001 by funding from the EPSRC/DTI Link as part of the Sustainable Technologies Initiative, is a forum which brings together people from industry, public and government bodies, and academia who have an interest in Sustainable Design.

This paper introduces the Sustainable Design Network. It outlines the network's unique membership which draws from fields as diverse as textiles, architecture, engineering, furniture, packaging and product design, and attracts membership from students to senior academics, managing directors, and councillors, and outlines the services it provides, noting a few interesting observations about initiatives which were not successful. Drawing on qualitative findings obtained from the membership, the paper then considers the ways in which the network has been successful. It then reflects on how the network has morphed away from being an academic network to one which meets the needs of all of its members.

1 INTRODUCTION

The mission of the Sustainable Design Network (SDN) is to: "Provide an exchange of knowledge and experience in the field of Sustainable Design between industry and academia, via the collaboration, structured discussion and dissemination of key research topics and industry needs". This UK based network was set up in November 2001 with 2 years funding from EPSRC/DTI Link as part of the Sustainable Technologies Initiative, with the intention that it become self funding at the end of this period. The SDN is currently run by staff in the Department of Design and Technology at Loughborough University and has developed into a successful forum which brings together over 190 people from industry, public/ government bodies and all levels of academia who have an interest in sustainable design. It has run successfully for 18 months on a self funding basis. Though the network is still free to join, members are charged a nominal fee on a pay-per-meeting basis to cover the costs of running the events.

This paper describes the unique nature of the membership of the network which was set up to stimulate debate, encourage research definition and execution, co-ordinate and add value to existing research, and ensure effective dissemination of sustainable design issues to industry. It provides an insight into the networking activities which it coordinates and reflects on how they have benefited the membership.

2 METHODOLOGY

At the end of the initial two year period of funding an evaluation of the network was carried out to establish a more detailed understanding of how beneficial the network was proving to be for the members. To support his evaluation qualitative data was collected via a number of different mechanisms. An initial email was sent to all the members on the database asking them to state whether they would like to be removed from the mailing list. No negative responses were received. A short evaluative questionnaire was then sent out to identify members who would be willing to talk about their experiences in more detail. These were followed up with semi structured interviews. The findings which emerged were combined with those which arose from more informal discussions held with members at each of the last four meetings.

One of the specific aims of the data collection was to identify some of the collaborations which have emerged from interactions occurring as a result of the network. Although a number of collaborations were identified (see section 6) it was recognised that these only served to represent the types of collaborations made, as the data collection was being carried out retrospectively and there was not a process in place to capture this information. In addition to this, it was recognised that new relationships often take a long period of time to establish and tangible outputs even longer to come to fruition.

3 MEMBERSHIP

Over the last three and a half years the membership base of the network has grown rapidly from the original twelve individuals and institutions which expressed an interest in joining the proposed network, to our current international membership of 197 individuals. One of the most interesting aspects of the membership is its diversity.

Although when it was initially conceived it was felt that a network in Sustainable Design would mainly attract members from the fields of industrial, product and engineering design, the membership base has spread far wider than this. Table 1 illustrates the 26 different areas of expertise represented by the membership of the network and demonstrates the unique flavour created by focusing on a subject as wide reaching as Sustainable Design.

Table 1 Areas of expertise represented by SDN members

Area of expertise	No.	Area of expertise	No.
Packaging & Packaging Technology	19	End-of Life Recovery & Recycling	1
Textiles & Clothing	7	Environmental Consultants	8
Automotive	2	Utilities	2
Advisory Bodies	21	Business & Management	9
Permaculture	1	Healthcare & Pharmaceutical	4
Industrial & Product Design	36	Charities	3
Engineering Design	12	Individuals	32
Civil and Building Engineering	23	Education	6
Energy	3	Textiles	3
Network co-ordinators	5		

At first glance this diverse range of interested parties may seem unusual. However if one reflects that,

Sustainable Design is design which takes into consideration social, environmental and economic issues in addition to the other design considerations of a given discipline

it becomes much clearer as to why the network has attracted a much broader range of people. Sustainable Design issues have the potential to affect everyone working in design, whether that is in the field of textiles, architecture, graphics, product, industrial, engineering or packaging design. The result is a network which combines an eclectic mix of expertise, experiences and attitudes which has served to be of great benefit to the broad range of members. The diversity of the membership basis is not only expressed through the wide range of interest areas illustrated in Table 1, but also through the levels of expertise held by the individual members. The network attracts individuals at all different stages of their careers from final year undergraduates to senior academics, trainee designers to managing directors. The environment that these mixed levels of expertise creates appears to provide a novel opportunity for those at different career levels to learn from one another, whether it's the postgraduate presenting their research to a tame audience and obtaining valuable feedback or the design manager learning about a new approach that they feel could benefit their operations. This type of collaborative approach which encourages "the active exchange of ideas within small groups not only increases interest among the participants but also promotes critical thinking" [1]. The shared learning gives the members the opportunity to engage in discussion and enhance their own learning [2].

Another valuable attribute of the SDN is that the membership cuts across industry, academia, the public sectors and not for profit organisations, thus providing a truly diverse range of backgrounds and ideas. Currently, forty percent of the members come from Industry which highlights the timeliness of this network and the increasing importance of Sustainable Design.

4 COMMUNICATION MECHANISMS

4.1 The SDN website

The SDN website www.sustainabledesignnet.org.uk is a useful communication medium for new and existing members. It provides a user friendly interface for attracting new members and informing them about the origins of the network, 'Our aims', interest areas, 'The benefits' of being involved and how to 'Join the network'. For our existing members it acts as a portal through which they can access a wide range of information. In the 'What's new' section visitors can find details on up and coming events being promoted and distributed by the network. Existing members can sign up to the on-line discussion forum which enables them to contact each other and discuss any arising issues. Through the 'Meetings' and 'Minutes' pages members can download the agenda and directions for the next meeting and download presentations from previous meetings. This dramatically reduces the administration time and costs associated with organising the network meetings. There is a section which provides detailed information on the different 'Workshops' available through the network and how to access these. There is a page where members can submit 'Ideas for future projects' to inform others about their interest and source partners to work with. The 'Members' pages provide contact information and details about projects that individuals and organisations are involved

in. There is a section which provides a list of ‘Key Publications’ for the Sustainable Design sector, a page of useful ‘Web links’ and details of future ‘Sustainable Design conferences’. There is also a link to ‘Definition Search’ [3] an academic web tool which provides scientific definitions.

4.2 Network meetings

Network meetings are a key element of the SDN. Since being set up in November 2001 the SDN has held eight meetings on a range of different Sustainable Design focused subjects, at different locations around the country, as illustrated in Figure 1.

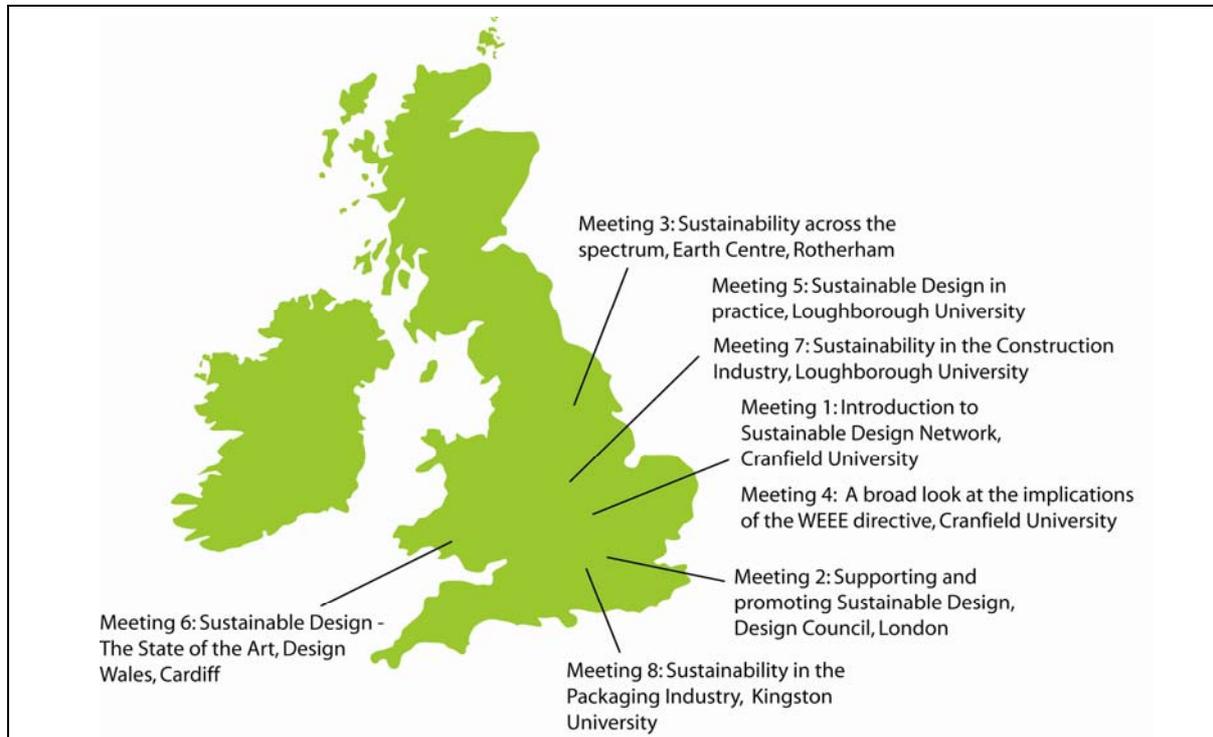


Figure 1 Demographic overview of the different SDN meetings held since November 2001

4.2.1 Format

SDN meetings tend to take to the format of a mini conference with around 30 delegates. There is a recognised benefit to limiting the numbers as this provides an intimate environment in which everyone feels encouraged to participate. They are informal events with a pre selected theme such as ‘Sustainability in the Packaging Industry’, with invited speakers which members pre book on to. The events, which are informal in nature, focus on a pre-selected theme such as ‘sustainability in the packaging industry’. The meeting structure which has evolved consists of six to eight presentations from a range of different perspectives, which might include any of the following; research students, established academics, industrialists and public sector workers. The content tends to demonstrate state of the art thinking, report on research projects, outline practical challenges or report successful case studies. Speakers to date include representatives from; Panasonic, Bangor University, ITDG, CDN International, Tempo, The Metropolitan Water Company, and the DTI. Additional activities which have been built into the format of the day have included brainstorming activities and short informal presentations to interesting events and funding opportunities. Alongside the formal presentations there is plenty of time for informal discussions over coffee and at lunch.

In addition to this and depending on the location, there is often an opportunity for the delegates to have an expert tour of any interesting and appropriate facilities.

4.2.2 Themes

All of the meetings have been organised around a pre-determined theme. It has been important to recognise the breadth of our membership when establishing meeting themes to ensure that they cover key issues relevant to the membership. The first three meetings took a broad view of Sustainable Design. The next two meetings focused on issues related to product design. The final two focused very specifically on issues concerning the construction and packaging industries respectively, to ensure that all areas of the membership were given the opportunity to meet up.

There have been benefits to having both wide ranging themes as well as sector specific themes. Both have encouraged a broad and varied range of speakers and delegates, with the former encouraging more cross sectoral discussion and the latter encouraging more in depth discussions about sector specific issues.

4.3 Sustainable Design Conference

In September 2004 the Sustainable Design Network sponsored the 3rd International Conference on Design and Manufacture for Sustainable Development at Loughborough University, which was dedicated to the holistic study and interchange of theory, practice, tools and methodology for the entire life cycle of products within the framework of sustainable development [4]. In recognition of the importance of disseminating knowledge about Sustainable Design this was a key requirement of the network funding awarded by the STI and proved to be an excellent event attracting prestigious keynote speakers and delegates from around the globe. As with network meetings the conference had a diverse attendance, attracting delegates from industry, academia and the public sector.

4.4 Other activities

The network has also supported a number of other activities, in addition to those outlined above. These have included the organisation and running of an 'Introduction to ecodesign strategies' workshop carried out on-site for Huntleigh Technology as part of their Technical co-ordination meeting at Bosworth Hall in Leicestershire in September 2002, and the sponsorship of a number of events focussing on Sustainable Design including the Sustainable Design lecture programme at Kingston University in October 2003 and the launch of CEDAR programme an ecodesign training and consultancy initiative at Loughborough University in March 2004. Sponsorship and involvement in other activities organised by other groups in provides a number of benefit for the network in the form of informal advertising and dissemination.

5 INTERESTING OBSERVATIONS

Over the last three and half years the network has developed in a rather amorphous way which has provided us with an excellent opportunity to be flexible and quickly make changes to approaches that do not appear to be working. A number of interesting observations have arisen.

5.1 Mailing List

In response to requests from the membership a JISCMail mailing list was set up and joining information was provided on the website. The idea was to provide a facility through which members could speak directly to one another. However this facility is very rarely used and only 30 members have signed up. On the few occasions that it has been used it was only to circulate job advertisements or conference calls. There are a number of possible suggestions for this. This might be because people belong to their own sector specific networks to which they can propose subject specific questions, and they are aware that the network membership is cross-sectoral and hence possibly too broad. Another linked reason is that although members are interested in Sustainable Design they choose to commit a day to learning more rather than lots of bits of time every day. It could be to do with the fact that we all have too many emails anyway and are not looking for more work. It could also be to do with the fact that when the members meet, they have a lot of opportunity to discuss their interest areas and exchange business cards, and hence are able to speak directly to new contacts. Certainly the meeting attendance goes from strength to strength and does not at all reflect the apathy that might be suggested were one to just look at the mailing list.

5.2 New Projects

In an attempt to encourage networking and the development of joint collaborations, there is a section on the SDN website called, "Ideas for new projects" which allows members to submit ideas that they have for research projects so that others with similar interests can link up with them and talk about collaboration. This idea was adapted from an approach used at the launch of the 5th call for research proposals by the Sustainable Technologies Initiative, where participants were encouraged to write up ideas for projects on large notice boards so that other delegates could identify people with similar interests to themselves. However although all members were made aware of the facility and there have been a good number of new collaborations as a result of the network, the notice board has never been used. This may be due to an inertia effect in starting the notice board off, it may be that individuals feel protective towards their ideas and don't want to share them with the world at large until they have funding, or it may be that members prefer to work with people that they have met and know.

5.3 Workshops

The provision but lack of interest in Sustainable Design workshops, is a third area of interest. An original requirement of the network was to provide members with a range of workshops to complement the meetings, as outlined in Table 2.

Table 2 Workshops offered by SDN to members

• What is Sustainable Design?	• Creativity techniques for ecodesign
• Introduction to ecodesign strategies	• Eco-packaging - what do you need to know?
• Strategies for tackling ecodesign	• Design for the Environment - understanding the implications of the WEEE directive

Despite initial interest in the availability of these workshops and offers from other members to run additional activities, the uptake of this opportunity was minimal. One probable reason for this might be that in joining the network, members are likely (and do appear to) already

have a good understanding or healthy interest in Sustainable Design and consequently there is too much expertise within the network to make workshops of this nature relevant.

6 SUCCESS FACTORS

There is very little information available in the literature regarding how to measure the success of networks, however it seems appropriate to measure the success of the SDN on how well it has met the original aims which were: to encourage and support an increase in the provision of knowledge on sustainable design issues; to provide the opportunity for like minded people to share their experiences of trying to implement sustainability into a company structure; to provide a facility that can offer advice and support in the field of Sustainable Design; and to provide the opportunity for members to test out approaches and ideas in a supportive environment.

To encourage and support an increase in the provision of knowledge on sustainable design issues

The more formal part of the meetings, provided through the structured presentations, have allowed members to gain a deeper understanding of the work that their colleagues are involved in. This is further enhanced by the fact that the presentations from the meeting are made available on the website.

To complement this, the informal nature of the meetings and actively limiting the numbers attending the meetings has encouraged members to build up contacts with people working in similar or overlapping areas, and develop new and potentially valuable contacts for future collaboration. Although the generation of new collaborations has not been carried out in a formal way, and the web site facility intended to enhance this has not been used, networking at the meetings, which has been in part aided by the regularity of these meetings (every 4 months) have allowed common interests to be nurtured and future partnerships to be developed. These new partnerships include emerging collaborations between:

- Kingston University and Design Wales.
- Loughborough University and Sheffield Hallam University - sustainable packaging.
- Anglian Water and Cranfield University - sponsored an MSc student.
- De Montfort University and Cranfield University - Product life Extension.
- Wolfson School of Mechanical & Manufacturing Engineering and Design and Technology, Loughborough University - Life Cycle Costing.

Collaborations via the Sustainable Design Network have led to the writing of a collaborative proposal for a research cluster on Sustainable Consumption between Loughborough University, Cranfield University and Kingston University with support from a range of public sector bodies.

To provide the opportunity for like minded people to share their experiences of trying to implement sustainability into a company structure

The meetings have provided members with an excellent opportunity to meet people with similar interests, working in similar or adjacent areas, both formally, through the presentations and informally through networking time.

To provide a facility that can offer advice and support in the field of Sustainable Design

This has been provided through the informal nature of the meetings, the provision of a mailing list and the information provided on the website.

To provide the opportunity for members to test out approaches and ideas in a supportive environment.

This has been achieved through the availability of short slots for students to present ideas, and time for brainstorming and workshop activities within the meeting framework.

In addition to meeting the aims as outlined above, the data collected from the members identified a range of additional success factors.

6.1 Meetings

The network meetings have been a key element in the success of the SDN. They have always been well attended by a wide range of academics, industrialists and public sector workers, with new faces at every event continually helping to bring fresh opinions and ideas to the debates which occur throughout the day. The qualitative data collected from the members has highlighted a range of specific benefits that are attained as a result of attending these meetings either as a speaker or a delegate.

6.1.1 Information and creative output

A number of the members identified that one of the greatest benefits of the network meetings is that they provide the opportunity for members to have time out from their normal working environment which not only gives them time to think differently, but also encourages them to think outside the box, and gain creative input from people working in different but related areas to their own. This was seen to provide food for thought, for their own projects.

6.1.2 A broader perspective

The feedback from the members identified that the eclectic mix of backgrounds and interests of the SDN members is a key benefit, as it provides members with the creative opportunity [5] to meet people with similar interests to themselves, but who work outside their specific fields and investigate how new alliances which combined their areas of expertise can be established. A number of the members recognised that useful lessons could be learned from other disciplines, and a broader perspective could be gained. One member commented,

“...it is extremely useful and rewarding because you get a broader cross section of companies and individuals attending. I have made some very useful contacts from the packaging event and learnt a lot from the others.”

“I found [the SDN] meeting very useful, especially in terms of networking and the stimulus of listening to different perspectives”

6.1.3 Keep up to date

The meetings have also provided a great opportunity for old acquaintances to get together and for new alliances to be made. They provide a useful forum for discussing relevant issues and provide a mechanism for people interested in Sustainable Design to stay up to date with current thinking and current academic research in the UK.

Design Wales found the SDN meetings to be a great source of networking, and an opportunity to stay up-to-date with current thinking. The meetings have enabled us to build and strengthen our relationships with the members and investigate possible research collaborations.

6.2 Networking with Networks

The SDN itself has made many links with other Networks both within and outside the UK (see Table 3) which has benefited the membership in that they have had the opportunity to hear about relevant, interesting events being run by others with similar interests. It has also provided additional avenues for reaching interested parties who might want to join the SDN and proved to be a useful route for advertising SDN events.

Table 3 Networks that SDN has made links with

• O2 UK	• The BEST Network
• EPSRC Network on Product Life Spans, Sheffield Hallam University	• Change Design Student Network, Sydney
• TEMPO: a sustainable design network	• Environmental Industries Forum
• BIONIS - The Biomimetics Network for Industrial Sustainability	• The Institute for Sustainable Development in Business, Nottingham Trent University

6.3 Informing education

A third success of the network is that the findings, lessons, case studies and learnings from the network are now being fed into many UK engineering, design and management undergraduate and postgraduate courses. These include:

- MSc in Manufacturing: Sustainability & Design at Cranfield University.
- MA in Sustainable Futures at Kingston University.
- BSc, BA and MSc programmes in Industrial Design and Technology, MSc in Manufacturing Management and the MSc in Engineering Design at Loughborough University.
- MEng in Mechanical Engineering at Bristol University.

They may reach even further, with the links made with other networks and the development of the 'Toolbox for Sustainable Design Education', recently developed at Loughborough University with funding from LTSN and launched in January to 40 academics from as many higher education institutions.

7 CONCLUSIONS

Over the last three and a half years the Sustainable Design Network has emerged into a well regarded, useful mechanism for enabling like minded people to meet up and share ideas and thoughts on the subject of Sustainable Design. Although all of the original aims of the network have been met by the current approach, it would appear that they have been achieved

in a less formal way than might have been anticipated. As the network has developed it has moved away from having a purely academic focus and emerged into something which is useful and appropriate to industry, the public sector and academia. It is believed that this makes it a unique set up which effectively meets the needs of the members. It is a model which is cost and time effective and to maintain, and brings considerable benefits to its membership.

To join the network please visit the website at www.sustainabledesignnet.org.uk and follow the links.

8 REFERENCES

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