WHY DESIGN:LABS?

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For some years I have together with my colleagues used the design:lab as a shorthand description of open collaborations between many stakeholders sharing a mutual interest in design research in a particular field. The design:lab is to us as acoherent format for design research organized as participatory inquiry. Initially we did not put too much thought into calling this format a laboratory. Many colleagues have reacted to the label as foreign and awkward to design, but in this paper I will develop how I see the laboratory metaphor as both suitable and useful, as it puts emphasis on a transparent, delimited process that is potentially scaleable.

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INTRODUCTION

Research is becoming more dominant in design as many clients approach designers with an open agenda for change whatever this is preparing a new built environment, scouting for new product opportunities or planning branding or other corporate identity measures. As opportunities in the market are getting more diverse, technology more easily accessible and the internal organization more plastic, the search for what to design is becoming an integral part of designing. In academic design research is it becoming more common to explore new approaches and new directions for design by engaging in research driven by case studies and design experiments. An experimental design research that aims at developing and exploring possible new design programs through concept design and prototype experiments is gaining ground both in design studios and in the research of design universities. (for more on this issue see Binder & Redström, 2006)
The focus of such research is today often user-centered combining different kinds of user studies with explorations of scenarios and prototyping of design options. Traditional human factors studies are complemented or even substituted with more anthropologically oriented studies of potential users in their everyday environment, and various approaches to dialogue and participation with future users is also becoming part of the repertoire of design researchers (Sanders 2006). The open agenda of the client organizations is typically followed by an interest in getting the organization involved in the research, and internally many design research clients show a willingness to adapt their organization to the results. Furthermore it is not uncommon that new design opportunities must be sought for across organizational and institutional boundaries, and thus involves a broad specter of internal and external stakeholders.
This has led to literature that address the ways design research can be organized to involve designer and clients and how findings and results can be produced and represented to inform design. Many have discussed how

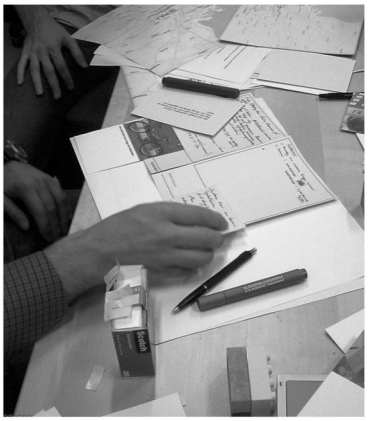
results of ethnographic field studies can become useful starting points for design considerations and representations such as personas, use patterns or scenarios are among the suggestions that are now in wider use (Laurel (ed.) 2003). Open tools for collecting and presenting data that allow designers and clients to take part in the analysis, such as video sketches (Buur et al. 2000), probing kits (Gaver & Dunne 1999) and video card games (Buur & Søndergaard, 2000) are popular as they soften the boundary between observation and design exploration.

For structuring the research process, workshops have gained considerable attention. Workshops where users and designers collaboratively engage in design activities give strong results even with a limited time frame (Westerlund, 2007). Workshops including many stakeholders are also shown to have a strong impact on the client organization in terms of alignment and commitment (Brandt, 2005). The emphasize on workshops as a vehicle for collaboration is pointed to in the design collaboratorium (Bødker & Buur, 2000) and also in design research conducted in an academic setting with external collaborators has a workshop-driven process proven to be efficient (Brandt, 2004)). Where these contributions give a good indication of both the complexity of design research and the ingenuity of design researchers they may also raise the question how best to think of design research as an activity. Is design research a data collection study, a design project or as some have suggested rather a design consultancy? Are the results of design research a mapping of user behavior, a catalogue of design possibilities or an exploration of possible design strategies?

Naturally it can be each and all of the above, but as already indicated I find it interesting to think of (at least some) design research as a laboratory for change (an expression used also by Engeström, but in a broader context, see for example Virkkunen, J. et al, 1997). Even though such a laboratory may as in my own work make extensive use of the workshop format, the notion of a laboratory where stakeholders collaboratively explore possibilities in a transparent and scaleable process seems to me to offer a stronger framing for design research. To develop this further I will briefly discuss what initially led me and my colleagues to talk about a design lab.

THE MALMÖ DESIGN:LAB

At the Interactive Institute in Malmö we worked for a number of years with design research in close collaboration with companies and institutions. Many of us had a background in participatory design working closely with potential users to develop new approaches to design (Binder & Hellström, 2005). We found, that applying similar approaches to participation when involving company stakeholders as when involving users, both engaged our partners more firmly in the project and more importantly gave our own work more strength as we could enroll the competency and experience of the companies directly in the research. We called this partner-engaged design (Johannsson et al. 2002). As we got the opportunity to work with several partners in the same projects we found that bringing them together with potential users in our context allowed us to create a highly innovative setting provided that we could stage an agenda of change that led the partners to collaborate on equal terms.



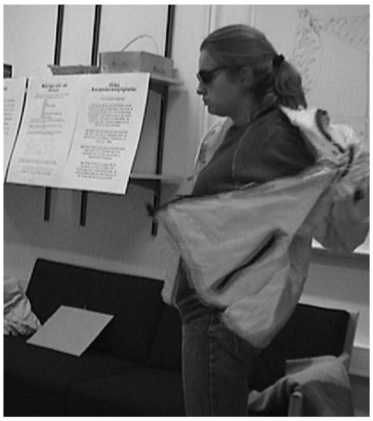


Figure 1 The workshop is a a popular format for joint exploraton involving many stakeholders

We used a series of two to three half-day or full-day workshops as the preferred mode of collaboration and we often brought together as many as 20-30 participants for a workshop.
Where we in earlier work had seen the workshops as feeding into our own independent stream of inquiry, we increasingly came to see the workshops as the backbone of a joint research effort. Rather than seeing the workshops as providing data for our design research, we came to see our role as feeding questions and probings into the workshops in such a way that the workshops produced the results (Linde & Johansson, 2005).
This sparked an interest in design games where workshop participants produce diagrammatic representations based on design materials generated from field studies or decomposition of previous designs (Brandt & Messeter, 2004). Similarly we found it useful to adopt dramaturgic approaches to collaborative scenario building that made the staging and enactment of scenarios important instruments of synthesis for design considerations (Brandt & Grunnet, 2000). It was important to develop such approaches that make the work of the participants self-documenting yet open for further inquiry. From workshop to workshop we as design researchers elaborated, refined and sometimes even distorted what the participants had produced. This work was then fed back into the next workshop open to scrutiny but also to a continuous negotiation of the mission and scope of the collaborative project.
With these efforts we could bring together a group of diverse stakeholders over two to four workshops and together with them go through a full circle of inquiry that seemed to reach an acceptable level of closure. The model presupposes that all partners bring material at stake in the collaboration and that what is produced is processed and reflected upon from workshop to workshop not only by the research team but also by the other participants. This model that we called the design:lab was typically brought in place as our partners wanted to delve into new design areas, and it was important that the model delivered concept designs that helped the partners to map this terrain (Messeter et al, 2004). Interestingly enough however the most important outcome seemed to be the experience from the process of collaboration that the participants could take with them from the lab. The design:lab did not only provide a productive setting for what can be designed. The setting itself became an opportunity for the partners involved to try out what could be accomplished in a collaboration spanning across organizational and community boundaries. To the extend that this experience could be "packaged", it was seen as a valued result to be able to re-enact and continue the inquiry beyond the particular suggestions arrived at in the design:lab.

WHAT MAKES A LAB?

The wikipedia definition of the scientific laboratory is not very elaborate but states that it is a controlled environment for scientific research, experiments and measurement, and further that it contains equipment for standardized processes and lab notebooks for keeping record of the experiments. This may seem far removed from design research, but reading the definition metaphorically and thinking of the role of the laboratory as an important step in a chain of translations that makes us know and act upon the environment, I will argue that the laboratory may be helpful for us.
Compared to the workshop of craftsmanship the laboratory shares standardized processes and equipment but the workshop is not known for experimenting but for producing tangible outcomes of a well-known kind. The design studio may resemble the craftman's workshop as it produces design recognizable by the particular aestetic imprint of the designers, but a design:lab where authorship is shared and the agreed upon condition of collaboration is to explore new possibilities is not defined by the genre of the outcome but rather by the ways of inquiry that the participants share. This inquiry involves experimentation but also measurement and record-keeping.
Similarly we can compare the laboratory to the artist atelier. The atelier produces like the laboratory what is new and unexpected, but we know little about the procedures and what counts is the tangible outcome. So in this comparison what is special about the laboratory is that it has an emphasis on process and delivers what is new and unexpected as an open recipe and not as unique outcome. This is precisely where I find the laboratory metaphor attractive for design research, because it let us think about such research as exemplary processes of inquiry rather than as finalized results.
But how far can we take the metaphor? What is a controlled environment? What are experiments? What is measurement? What is equipment and standardized processes? And what kind of lab notebooks may we think of in design research?
It is obvious that in design research we are not dealing with hard facts but rather with an"as-if" situation where we must imagine what it could mean if we introduced new design in a particular context of use. If we think of the laboratory as a shared 'facility' for the partners

whatever these are potential users or other stakeholders, then the *controlled environment* can be seen as the setting where we let this "as-if world" live and be explored under the explicit condition that we have not yet decided if this world shall be translated into a more permanent reality. In this respect the lab is a hypothetical space where we can negotiate among the participants how much of the world outside we want to take in and how far we will allow the exploration to go. In the Malmö Design:lab such negotiations could evolve around video documentation of the everyday doings of potential users, where they were the ones to decide what aspects of their everyday they would accept to bring in as material in the lab. Similarly a partner responsible for developing new technology would be the one to provide the material that made it possible to imagine what kinds of technological options could be included in the imagined world of the lab.

The notions of *experiment* and *measurement* leads most of us to think of school experiences of the physics lab or quantitative testing of well defined parameters. But if we take a broader view on experiments as something we do to discover consequences of actions that interests us then this may actually fit to what is going on in the design:lab. When for example a lab participant from a furniture company takes video episodes from the everyday life at the office of other participants and uses them to create a scenario of how a new (and not yet designed) kind of office furniture for video conferencing may become useful then this becomes an experiment in the lab that all participants can join into and evaluate. Or if a potential user imagines what it would mean to have all her office files available in a (not yet designed) token ring that she can bring to meetings with clients, then what she comes up with can also be seen as an evaluation for the technology provider of what this option may entail in terms of technological challenges. These are off cause simple examples of design moves that will always be part of designing, but thinking of them as being staged in the open collaboration between stakeholders under the commonly agreed conditions of the "as-if world" of the lab, they become not only tests of particular ideas but also a mutual examination of what this "as-if world" may bring.

If this shall be more than momentarily interesting we need something like measurements or rather records of the experiment that makes it possible to maintain and accumulate what is learned. This is an important point where the lab metaphor can help us to ensure that we do not end up with collaborative events that may be fun to attend but does not leave a lasting imprint on the inquiry. The design:lab gains it strength as much from the formats of representation as from the interactions between participants. The design game format is a good example of how interaction and representation is integrated. There are many other such formats, but what is important is that the representation can capture a synthesis of design moves that is at the same time arguable for the participants and open for scrutiny by others.

Finally what I find compelling about the lab metaphor is the emphasis on a scaleable and portable process. At first this may seem hidden in the standard description of a laboratory. As at wikipedia the emphasis is on equipment and in the wikipedia picture gallery one can easily get overwhelmed by the many and odd examples of specialized facilities and instruments. But behind the many pictures we have at the core of any laboratory the well worked out processes that ensure that what is made in one lab can be reproduced in another. This is not only to ensure validity but also to enable further translations when what is done in the lab is scaled to the "messy world outside".

Here we may have the beginning to a good explanation why many design–oriented concept design labs in commercial settings have had difficulties taking over from the conventional research labs of many technologically driven companies. Where the technical research lab "took home" new technological principles to the company and had labs where they could exercise and eventually master the associated techniques, then the design-oriented concept labs often have to produce novel design suggestions without any contact to the stakeholders and processes that are mandatory to involve in order to ensure success. This is precisely the issue that must be addressed in the design:lab: To demonstrate the workable process that can produce the results displayed, or to state it even more strongly: to prototype a sustainable practice that can make sense of the new design options.

WHO NEEDS THE DESIGN:LAB?

With the qualifications to the notion of lab made above we can think of who the design lab is for and how the design lab relates to what else designers and design researchers are involved in. Compared to the conventional design commission one of the most important characteristics of the design lab is that the authorship to the design work lies not with the designers but with the lab partners. It is a negotiated outcome, and this outcome is possibilities for further exploration and not an agreed upon master plan. It is important that the

lab is not seen as the frame for a decision making process. The design lab offers a setting for exploring a design space and for prototypically staging the kind of collaborative processes that the partners are able to employ in order to exploit this space.
In this sense the design lab is not a method or added activity in the conventional design project. Instead it is addressing the questions of "what could be" as envisioned by the stakeholders involved.
In architectural programming as in product planning this is very much an issue and approaches like the design lab are also used in these contexts (Horgen et al, 1999) (Granath, 2001) (Fröst, 2004). It is interesting here that to establish what to design as stated in the program, evolves iteratively with design explorations of what can be designed. This kind of inquiry may be seen as alternations between moves of estrangement, where the well-known present situation is defamiliarized, at the same time as the participating collaborators are familiarizing themselves with the possibilities for change.
The design lab may also prove relevant in change processes that do not normally involve designers. I have already mentioned the change laboratory described by Engeström that addresses learning and organizational change. This approach is not based on designerly experiments, but in the work of Karasti many approaches to collaborative inquiry based on ethnographic video conducted in the change laboratory setting comes close to what we have pursued in the design:lab (Karasti, 2001). Karasti worked with health care workers and developed the notion of video collages as a representational format well suited to stimulate reflection and initiate considerations of changes in work organization. It is however in my view not coincidental that this similarity arises precisely from her introduction of shared and shapeable representations like the video collages , that brings a designerly intervention into the change laboratory.
Hillgren and Björgvinsson have over several years worked with a design lab together with intensive care nurses. In this work they have almost solely worked with new work practices and have mainly used design experiments with it-technology as scaffolding for re-thinking work (Björgvinsson et al. 2005).
Interesting is also the way design researchers like Mattelmäki and Lehtonen report on engaging design:lab -like approaches in research projects concerned with policy issues such as new labour market measures to keep older workers longer in employment. Here a design oriented inquiry into how the workers experience their work environment becomes a means of disclosing priorities and expectations that are highly relevant for the larger study (Mattelmäki & Lehtonen, 2006). In the next paragraph I will give an example from my own work on how a design lab is set up in contexts of change which originate in organizational and working life concerns

WORKSPACE LAB

In an on-going project we have been funded to develop the design:lab idea with respect to workplace changes in which external health and safety consultants are involved. The objective is to extend the competency of health and safety consultants in such a way that they can help organizations facing health and safety critical issues to take a broader perspective on change. The premise is that a workplace where health and safety problems occur has an opportunity to take this as an occasion for developing both a more healthy and a more productive environment. The health and safety consultants have a strong experience in establishing dialogue with the employees and if they can extend this competency to become facilitators for a process of involvement in change then they can add a new potential to the work for the client. The lab setting, in this project called WorkSpace Lab is our main idea as to how the consultants can address these larger issues.
When the consultant is called in, the organization is already aware of the need for change, but typically this surfaces a number of new questions that makes it relevant both to consider the existing practices of the workplace and to open up a new space of opportunity. The day-to-day managerial process may not be tuned in to the kind of search and dialogue that the change makes relevant. The lab comes in as an opportunity to initiate an open search for change opportunities, leaving the question of decision making for later.
It is not only for the employees that a lab setting offers an opportunity to voice concerns and take part in proposing change, also for management and external collaborators will the "controlled environment" of the lab and the careful "recording of experiments" offer a venue that is not readily available in the everyday. It has been part of the research project to take part in a number of practical workplace consultancies, and the WorkSpace Lab has been developed and tried out through these cases.

The factory case

The first case we have been involved in is a factory producing glass fiber linings to sewer system pipes. A batch production facility for mixing chemicals is going to be replaced by new technology for continuous mixing.

As we got in contact with the factory new mixing machinery had already been ordered and an engineering consulting company had been employed to prepare the new mixing facility. Health and safety is a major issue as the chemicals are both potentially poisonous and explosive. A health and safety consultant working closely with us has been engaged and the company wanted to also involve workers in the mixing area in the planning of the new facility.
In the initial preparation of the WorkSpace Lab we had to negotiate what was to be the boundaries of the controlled environment. We needed to have an opening for change that could bring the stakeholders together and also an indication of what had to be taken for given. A purchasing contract had already been made for the machinery, and the engineering consultant had already started to work on the lay out of the facility. Two different plans had been drawn in considerable detail and the engineering consultants favored the most recent of these plans.
In the negotiation with the company we suggested that an evaluation of the two plans could be a starting point, if management and engineering consultants agreed to that both suggestions were open options. This was agreed to and it was further accepted that the two plans should be presented from the start. This should ensure that all participants were fully informed about what had been done so far, and make the engineering consultants be the ones to make the first step in opening the dialogue.
Secondly we needed to establish how the workers from the mixing facility could be partners in the lab. If they were only invited in to comment upon the technical drawings of the engineers, then they would at best be guests in the "technical lab of the engineers". The environment that they know and are experts in would remain outside, and the "translation" of their demands and opinions about a future work context would be external or at the boundaries of the lab environment. To avoid this situation the workers made together with the health and safety consultants a so-called workbook photo registration of what is problematic and what is worth keeping in the existing work environment. The workbooks with the many pictures from the work environment were presented and documented as part of the first lab workshop. The design:lab was set up as a sequence of workshops at the factory. The first workshops were carried out in the cantina of the factory eventually filled with pictures from the facility, but later workshops were held in the production room where the new machinery should be installed.

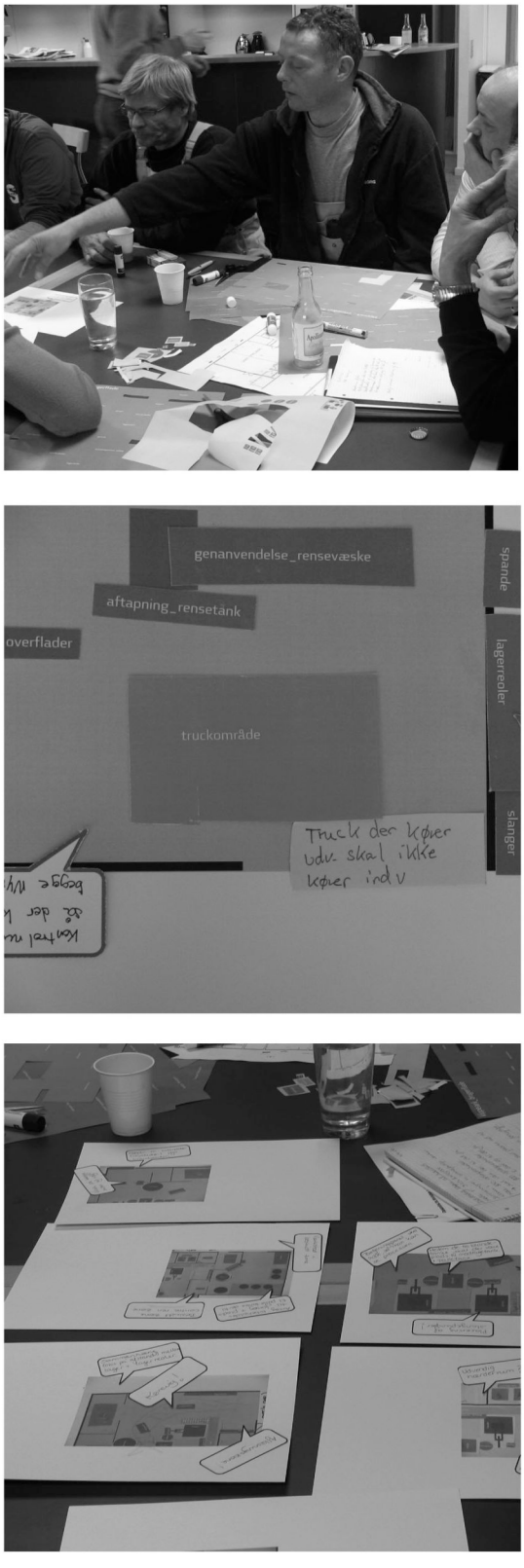


Figure 2 The layout game made the plant operators fully competent in laying out a new plant environment.

The Layout game

The "as-if" situation in the WorkSpace Lab that allowed experimentation was at the first workshop created as a layout-game taking the two different plans of the engineers as a starting point. Workers, engineers and management worked in mixed groups to fletch out the lay out in a hybrid representation that included the location of main activities and the positioning of auxiliary equipment not visible in the original technical drawings. At the end of the first workshop a number of radically new options had come up and it was agreed that for the next workshop the workers should prepare a new suggestion based on the lay out game. Also engineering consultants and management got "home work" to do as some of the options could not be fully explored at the workshop.

At the second workshop roles were reversed in the sense that it was now the workers who presented a suggestion, and the whole group then had to work through this suggestion. The workshop ended by having the participants cut the lay-out into pieces that each revealed particularly strong points, good solutions or problematic aspects that had to be explored further. The participants were very positive to what had been accomplished when they were later interviewed, and the lab continued at further workshops where enacted scenarios were used at the actual site of the new facility to identify how new tasks and new ways of organizing work had to be considered.

For the brief account here what I will point to as essential instruments of the lab is the shared representations of the lay out that made all participants able to express concerns and suggest changes. We designed the lay out game in such a way that it was compatible with the engineering drawings yet more coarse and leaving aside distinct engineering questions such as the routing of pipes or the cabling of controls. We suggested sketch type procedures such as the coloring of problematic areas or the literal cut and paste of walls, tanks and other equipment. Concerns of management for particular critical activities was included as key words to be cut from particularly colored sheets and by providing the layout game as full kit of game boards and pieces we defined the focus and scope of the exploration in a way that was immediately tangible in the situation. An obvious concern for us in preparing this toolbox for creating shared representations was to enable the workers to take part, but it was interesting to note in the follow up interviews with the engineers that they had found the representation highly useful. They did not only ascribe this to the contribution of the workers, but also pointed to how the representation made it manageable for them to work from the particular working conditions of the factory and not as in their first drafts from such isolated parameters as the optimization of piping lines.

DESIGNERS IN THE LAB

What the participants are making in the WorkSpace Lab is in my view a collaborative piece of design. They give shape to visions of the future production facility and they do this with a concern for the coherence of what is suggested. The question that can be raised is how we can be sure that what comes out of the lab also qualify as suggestions in more professional design terms. Will the layout suggestions from the WorkSpace Lab be as good as what architects or engineers could have done if they were solely in control of the process? Before answering the question I think it is important to bear in mind that even if what is going on in the lab is design it is not the final design of the facility. From where the lab ends a process of managerial decision making and of architectural and engineering design has to come in. The design space opened by the lab must be negotiated in terms of managerial implications and architects and engineers must deal with all the important technical and practical details that were deliberately left out of the lab. As we saw in the mixing facility case the engineers were already well on their way into this work when the WorkSpace Lab was established. What the lab did was not to add to this work but to invest in a broader inquiry that could more naturally have preceded the work of the engineers.

As I will also give a brief example of from another case from the WorkSpace Lab the lab inquiry does not have to be specifically tied to an immediately proceeding commission of conventional design work.

Before going to this second case it is however still important to consider how we can safeguard the lab against arriving at undoable or unsatisfactory outcomes. Where the lab unlike a more isolated pre-study is almost certain to display commitment and immediate trust in what is proposed, there are professional design issues involved for example in planning a factory layout that may be overlooked. In our case the involvement of the engineers gives some certainty, but there is certainly a need for professionalism also in preparing and facilitating the process. In the preparation of the layout game it was important that we as lab organizers gave the participants material and representations that ensured a good mapping between what could be done on the game board and what can be done in full scale. Similarly it takes a professional design approach to frame the documentation of work in the existing mixing facility

here in the workbook format in such a way that it becomes relevant design material.

The office case

The second case from the WorkSpace Lab can illuminate how this professional design approach is often a question of opening up a space of experience from which new design considerations can emerge. In this case the design:lab approach is put in place as a collaboration with a municipal office who has recently moved to a temporary open office space as part of an attempt to implement a new organization of work putting emphasize on knowledge sharing. The office will move to a refurbished office building within 1-2 years and the objective of the lab collaboration is to prepare the office for negotiations with the municipal facility management about this new permanent office space. The WorkSpace Lab is planned together with two internal consultants as a process in four steps over a period of three month.

In the first step the office workers are to define a number of common themes for further exploration based on an inquiry into the present practice. Then small groups are formed around the themes and each group visits another office to see how others have dealt with similar issues. In the third step the office will make small full-scale experiments in the temporary environment, and in the fourth and final step these experiments are evaluated and the whole process is compiled into a handbook for future change.

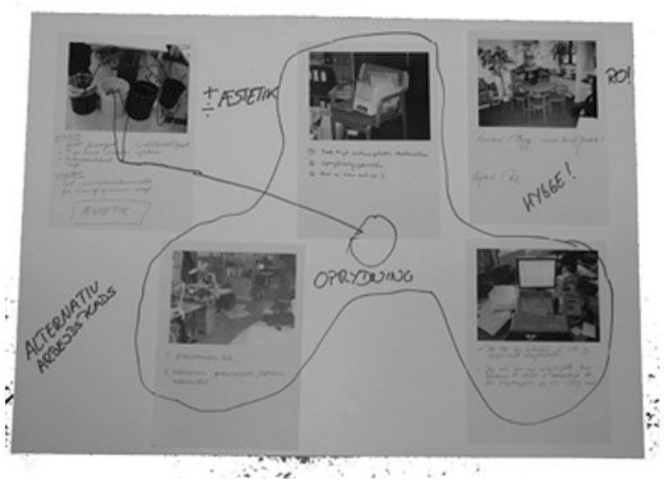


Figure 3 At a municipal office, staff members produced collages of how they saw their present work environment using photos taken by others.

At the first introductory meeting with everyone in the office, the staff made a short exercise where everyone picked a photo of the office environment from a large collection we had prepared. In small groups they used the photos to make collages stating what they found to be important issues to focus on in the design:lab. The collages and the brief discussion following the group presentations revealed both anxiety and enthusiasm. As the office had recently been reorganized from a number of small contained office spaces to one open space the tension between the opportunities of the new, such as more informal contact and better personal and professional network and a concern for loosing a functioning and personalized immediate working environment surfaced but in a somewhat indirect fashion. The discussion centered around the notion of "mess" and "different cultures". The participants seemed to be reaching out for legitimate concepts and themes already in the debate about new ways of working and tended to be quick at labeling what was on the photos within the context of this debate. As an undercurrent in the discussion were also traditional environmental issues particularly the level of noise. In the way we had staged the session and also announced the lab as a join inquiry into possibilities these health and safety related issues appeared difficult to raise.

In our post-evaluation of the introductory session we found that we needed to make an intervention that could short cut the general debate about open offices and bring the office to consider more in depth what is special and peculiar about their practice. We discussed if a mapping of workflow and tasks could create such a base, but ended up preparing a probing kit called the "Two-by-two self-documentation tool". In line with the idea of probing kits, we wanted to prepare a tool that contained our first designerly interpretation of the environment. We saw the tool as an invitation to dialogue, a dialogue that should be continued as the office workers met for the first lab workshop. Our interpretation was to be seen as the first statement in dialogue, and as the Two-by-two-tool got used it would produce new statements.

The dialogue we wanted to initiate should however not be head on to such core issues as noise or operational flow. Also here we wanted to open an inquiry of estrangement and familiarization that could let the office see its own practice a new and make it possible to tentatively probe for what could be different. To accomplish this we designed a tool that was to be used by two people who are not normally working together. We used the

metaphor of the playing card as the framing for the graphical design as we made a booklet where each spreadsheet was like a playing card with two mirroring halves. With an opened booklet between them the pairs visualize who they are, how time has rhythm at the office, what paths and places they travel, what stories they tell etc. With sheets with photos from the office to cut from and statements from our initial interviews we flavored the tool with what we had learned, and we further emphasized the dialogue-idea by providing postcards from office situations that they could "post" to each other and to the Lab about moments worth remembering.

CONCLUSION

The office toke this "invitation" to produce imagery that can give what may perhaps be called a site for the collaborative research, generated from the everyday practice. It is the Design:lab setting that offers this possibility and it is also very much the presence and intervention of the lab facilitators as designers that gives substance to this imagination. This becomes perhaps more clear if we think of what else the office could have done instead of establishing a lab-kind of collaboration. If for example office management had engaged external consultants to evaluate experiences gained in the temporary office and to suggest principles for the new permanent office, then they could have chosen to make an observational study of office work and/or a questionnaire to office workers about job satisfaction and performance. This could certainly reveal relevant information but it would have left the question of possible change almost entirely outside the evaluation. The results from such an evaluation could also prove itself to be useful for example for an architectural firm commissioned to suggest a new office design, but the architects will then be left with applying conceptual design originating elsewhere to the particularities of this office. This is a well-known process that we know produce results but it does not like the lab set up take advantage of possibilities to open up a zone of search and exploration together with the client organization. If on the other hand office management had created a working group of office workers to prepare the new office environment then this would have left the group without support for thinking what could be done from a professional architects standpoint and just as important it would make it difficult for the group to create a reflective distance to the everyday experience of being in the office.

Professional designers and design researchers are important for making the design lab productive because they can establish a workable design situation by providing materials and formats of collaboration that open up the familiar and ensures compatibility with proceedig steps of design. This involves designerly interventions because such openings can only be obtained by imagining change, but it is still very different from the conventional design task as it has the collaborative process and not the individual authorship of the designer as its main vehicle.

Figure 4 In the office case, photos were a simple means to promote self-reflection.

The design lab as it has been laid out in this paper as a collaborative space of designerly exploration, taking advantage of a "controlled" environment and "experimentation" which prototype change processes in an exemplary fashion is already out there in many new approaches to participation in design research. What I have suggested in this paper is that the notion of a laboratory of design can be helpful in differentiating this kind of design research from other work that designers are involved in and that the laboratory metaphor can sharpen our attention to the importance of the setting and the design moves that governs a participatory inquiry.

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