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Designing Deployment: a visual paper of the batch deployment of research prototypes

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Abstract

In this paper we present the detailed design decision-making that went into the deployment phase of a project exploring Third Wave HCI [5] through batch-produced devices. Building on the studio's design-led methodologies, we produced multiple sets of Indoor Weather Stations (IWS), research devices that explore the microclimate of the home, and deployed them to 22 households over the course of a year to gather polyphonic feedback from participants [2]. This project built upon our previous work of gathering polyphonic views of devices deployed to one or few households [6], but in order to scale our practice for multiple deployments, we had to develop new methods.

We have documented the design and rationale of the IWS and the outcome of the field study elsewhere [2]. Here, we focus on the *design* involved in the recruitment of participants, deployment of devices and the methods of gathering feedback. Designing the *supporting artefacts* for projects such as this – everything that goes alongside the main research object – demands almost as much attention as designing the object itself.

Our usual fieldwork practice is to make numerous visits in person to participants in order gain insight into the impacts and effects of our devices. However with the scale of this project, it was not possible to pay multiple visits to all our volunteer households in the same way that we do when a single device is deployed. Instead, we designed new methods for this batch-deployment that we term *Deployment Probes*, using Cultural Probe [4] sensibilities and approaches to develop methods to gather polyphonic feedback and insights from such a large number of participants.

By adopting a *visual paper*, a paper format which focuses on image, we present material design decisions in a way that is difficult to achieve in writing, and offer an alternative to other written accounts of this project [1, 2]. Images require interpretation, so we rely on readers to interrogate those used here. Granted this, we believe the photographs and quotes included here effectively reveal our novel methods of recruiting, deploying and gathering feedback at a large scale.

Keywords

Design Process; practice-based research; photo essay; visual paper; annotations; design interventions;

Designing recruitment

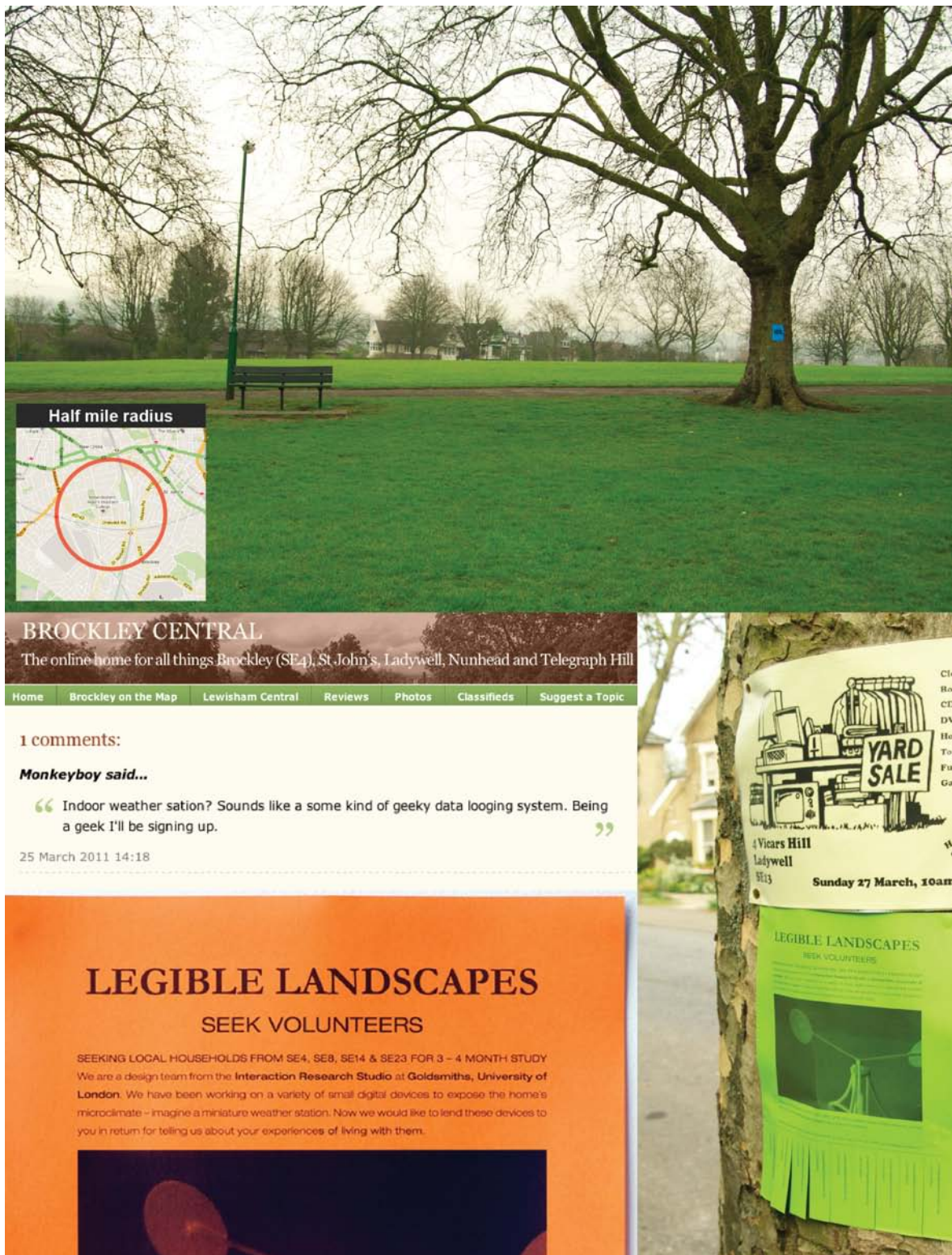


Figure 1: Our intention was to recruit people who lived close to our studio in order to quickly resolve maintenance issues, so we designed methods to reach out through existing local networks formed around public and digital spaces. Posters were designed to offer just enough detail about the project to tantalize prospective participants. These were placed in local parks, cafes, corner shops and main streets. Similar adverts were published on local blogs and forums.

Cultural Probes as a priming activity



Figure 2: Cultural Probes [4] were designed to introduce participants to both the context of the research (the microclimate of the home) and the style of research activities later used during deployment. We distributed probe packs at group events to 31 prospective volunteers. As with many recruitment exercises, there was a decline of interest and we received 22 completed packs from participants who were enthused by the events.

Handover considerations

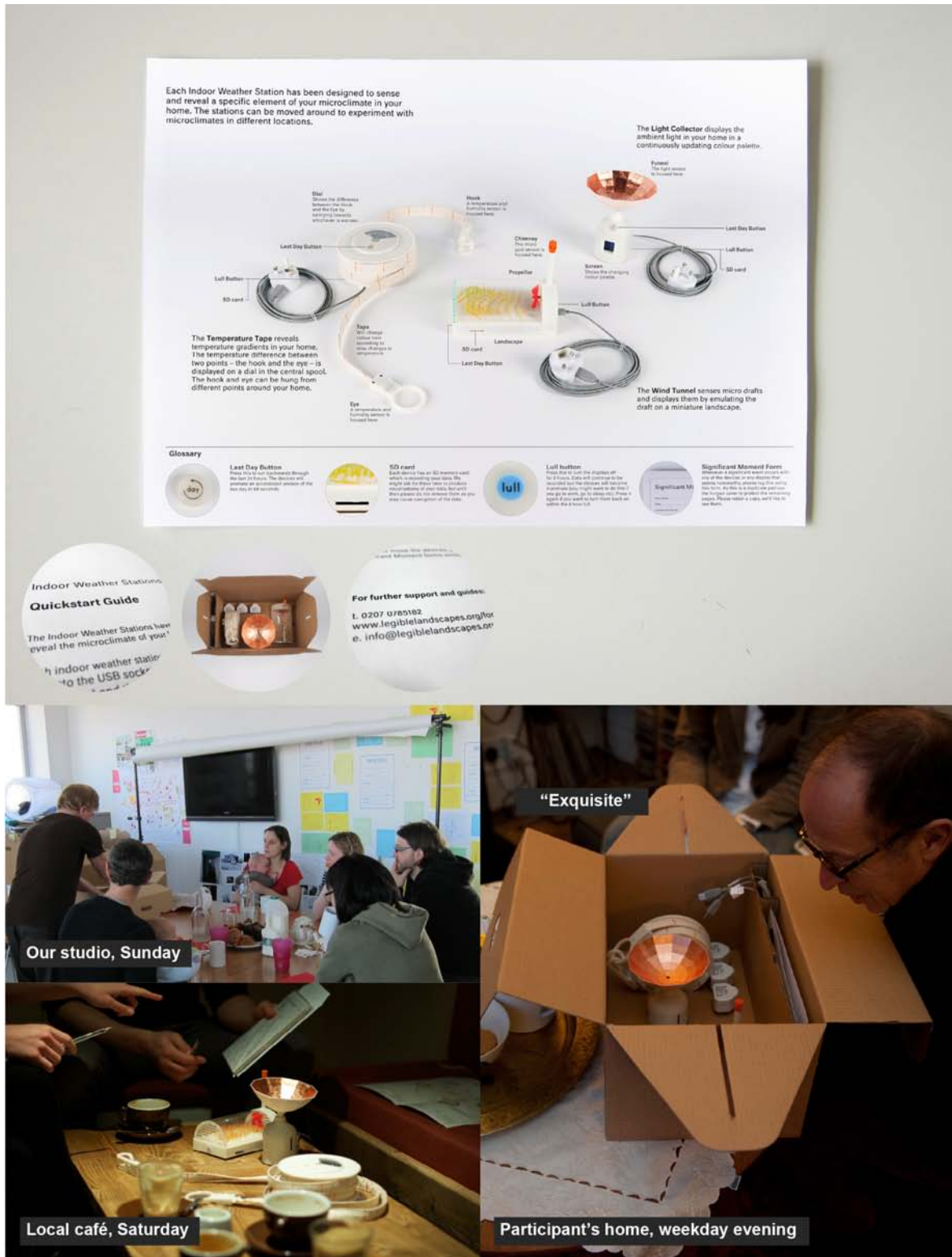


Figure 3: Traditionally, our studio deploys research prototypes in-situ. While we were able to deliver some of the IWS to people's homes individually, this was not practical for all of the devices. So we arranged group events to fit participant's availability and designed the packaging and technical materials to enable participants to transport devices home and install them independently. The packaging also considered the experience of un-boxing the devices, clearly presenting the artefacts and technical materials upon opening.

Deployment Probes

Significant Moment Form 00242

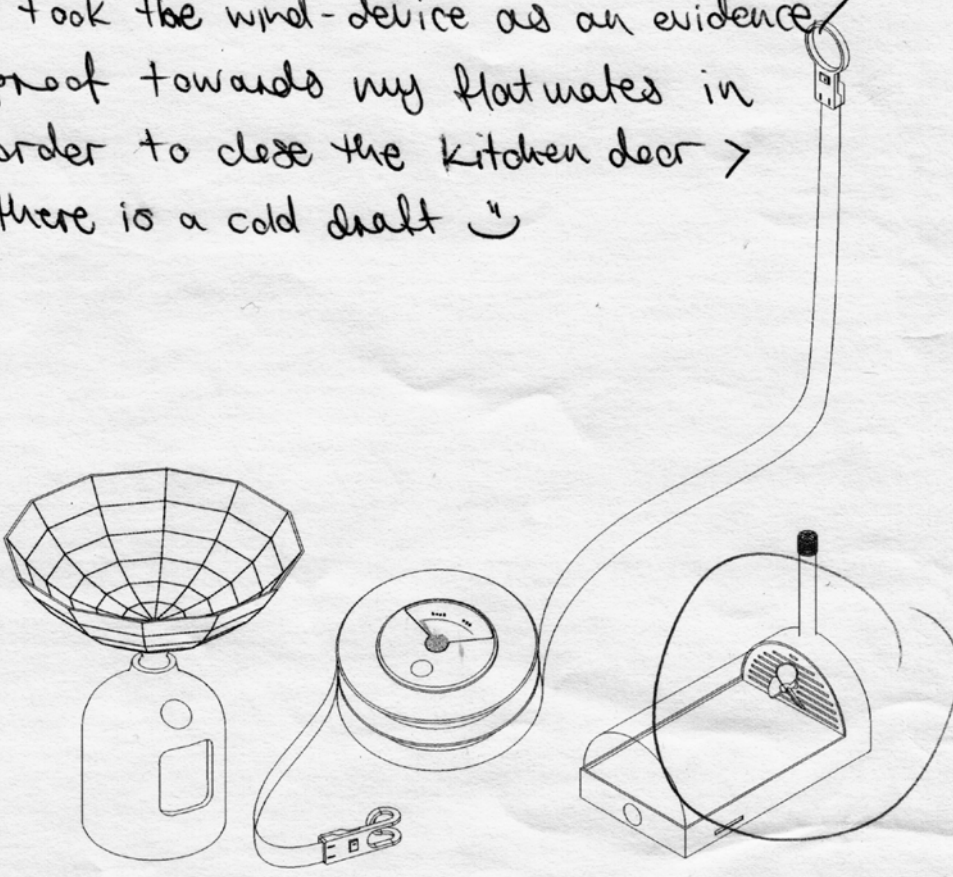
Your name [REDACTED]

Date ... 7.3.12 Time ... 20.00

Location of device ... ~~Hallway~~ to 2. floor staircase

Please give details of the Significant Moment below:
(Continue overleaf if necessary)

I took the wind-device as an evidence proof towards my flatmates in order to close the kitchen door > there is a cold draft ☺



Circle relevant device

Top copy - Goldsmiths; Duplicate copy - Participants

Figure 4: Probe-like activities were designed to be distributed over the course of the field trial. Significant Moment Forms, bound in the style of a notepad, provided a semi-structured format for participants to conveniently record glimpses of their experiences throughout deployment. Returned forms, sent back to the studio in prepaid envelopes, provided prompts to open conversations with participants later in the project.

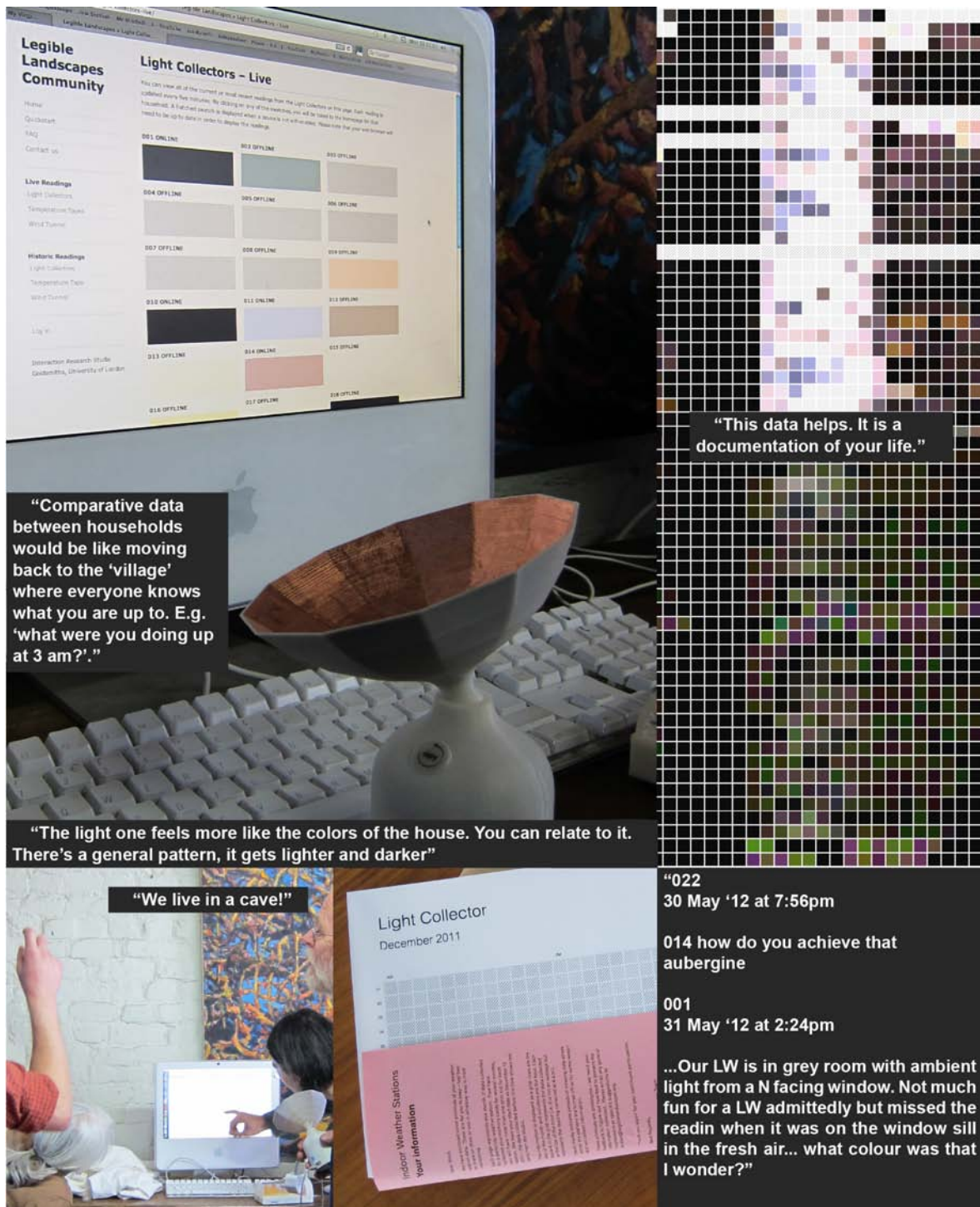


Figure 5: Deployment probes also helped to open up conversations *between* participants. The design of a community website, displaying real-time and historic readings of every household’s sensor data, included photo galleries and comment boxes to encourage interaction between participants. A number of digital and physical probe-like interventions were designed to reframe the data. This included monthly paper calendars displaying colour swatches of light that were posted to households (top right), e-newsletters containing our own weather observations, maps of community data and probe assignments for participants to create their own climate report of their home. These materials prompted conversations between participants on the community website and at group events later in the project, as well as providing resources for our conversations with participants during home visits.

Deployment Probe returns: polyphonic interpretations



Figure 6: By deploying to multiple households at once, we were able to collect a greater range of qualitative data than can be achieved in smaller deployments. Deployment probes enabled us to gather the individual voices in our study, rather than trying to capture them all in a summary account. Figures 6 and 7 include photographs and quotes gathered through deployment probes, accompanied by photographs of participants taken during home visits.



Figure 7: Deployment probes invited continuous feedback from participants, in contrast to methods that focus on events (e.g. site visits). The variety of materials designed, from Significant Moment Forms to website galleries, catered for different forms of feedback. We found deployment probes complimentary to site visits and many probe returns seemed both private and reflective.

Participant-Led Evaluation



Figure 8: Instead of enlisting independent cultural commentators [3] to provide evaluation for our study, a deployment probe task drew upon the skills of our participants themselves by inviting them to self-report using the language of their occupation or hobby. One participant, an artist, painted the Light Collector and composed a photo. Another, a journalist, interviewed the designers and wrote an article for a magazine to which he contributes. A linguist who participated in our trial was given all the returned Significant Moment Forms to analyse. A final closing group event for the project was organised, where self-reports and other deployment probe materials were used as props for conversations between participants and researchers on emerging practices around the IWS.

Conclusion

Often in our papers we focus on the overall evaluative picture of a research study and rarely have the space to reveal the nuances of our design process. By adopting a visual format we offer insight into the materiality of our work. The intention here is two-fold. First, our objective is to reveal the designed, but often unreported, materials of our projects, the supporting artefacts. We do this in order to demonstrate the level of design detail and decision-making that goes into the production of these items. Artefacts such as the posters and adverts for recruitment, manuals and quick start guides, on-line materials to offer technical and community support, as well as materials for participant feedback all help scaffold a legible and unproblematic participant experience and enable participant feedback through multiple forms.

Second is to demonstrate how Cultural Probe methods were useful in scaling our evaluative practices. Deployment probes were designed specifically to gather glimpses into the lives of our participants with our deployed devices. We were unable to visit all of our volunteers extensively, but these probes allowed us to shape our understanding of how the devices were being used, encouraged polyphonic accounts and created opportunities for our participants to self-report. We also found value in enabling participants to give ongoing and reflective feedback about devices, the nuances of which is sometimes not captured in a site visit. Deployment probes complimented our usual fieldwork practice of visiting participants in person by offering valuable prompts during home visits and group events.

We believe design can offer a valuable approach to methods of recruiting, deploying and gathering fieldwork that is both human and scalable. We hope that the visual format of this paper goes some way to revealing the details and nuances of this approach.

Acknowledgements

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References

1. Bowers, J. 2012. The Logic of Annotated Portfolios: Communicating the Value of 'Research Through Design'. *In Proc. DIS'12*. 68-77.
2. William W. Gaver, John Bowers, Kirsten Boehner, Andy Boucher, David W.T. Cameron, Mark Hauenstein, Nadine Jarvis, and Sarah Pennington. 2013. Indoor weather stations: investigating a ludic approach to environmental HCI through batch prototyping. *In Proc. of CHI 2013*. 3451-3460.
3. William Gaver. 2007. Cultural commentators: Non-native interpretations as resources for polyphonic assessment. *Int. J. Hum.-Comput. Stud.* 2007, 292-305.
3. William W. Gaver, Andrew Boucher, Sarah Pennington, and Brendan Walker. 2004. Cultural probes and the value of uncertainty. *Interactions* 11, 5 (September 2004), 53-56.
5. Harrison, S., Tatar, D., and Sengers, P. 2007. The Three Paradigms of HCI. *In Proc. of alt.chi 2007*. 1--18.
6. Nadine Jarvis, David Cameron, and Andy Boucher. 2012. Attention to detail: annotations of a design process. *In Proc. of NordiCHI 2012*. 11-20.

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