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# A Photo Essay of the Batch Deployment of Research Prototypes

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**Abstract**

In this paper, we present insights into a long-term project exploring Third Wave HCI [1] that focuses on multiple interpretation through many users. Building on the studio's design-led methodologies, over 60 research prototypes, called the Indoor Weather Stations [IWS], were batch-produced and deployed to more than 20 households over the course of a year to explore possibilities of polyphonic feedback from participants [2]. The devices were built to explore the microclimate of the home. We provide an account of three aspects integral to this batch-production of research prototypes; the recruitment of volunteers, the deployment to multiple households and finally the gathering of participant feedback. By adopting the format of a photo-essay to present practice based research, we offer a higher resolution of detail than can be articulated in a traditional written paper [3,4]. Images of design materials, research artefacts, events and participant's experience, alongside a spectrum of participant voices, enable us to provide insights into our methods of recruiting, deploying and gathering feedback in multiplicity.

**Author Keywords**

Authors' choice; of terms; Design process, practice-based research, photo essay, annotations.

**ACM Classification Keywords**

H.5.m. Information interfaces and presentation (e.g., HCI):  
Miscellaneous - Design;

**General Terms**

Design; documentation.

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# Recruitment

The studio has a long history of deploying research prototypes to single participating households, but this was the first time the studio batch-produced multiple devices for multiple homes (a total of 66 devices

for 22 households). We decided to recruit volunteers from a postcode area proximate to the studio, as we would be geographically nearby in order to deal with any technical issues during the field study. In what is a mainly residential area, we began by producing posters calling for volunteers that we fixed to trees, lampposts and coffee shop windows. The poster gave a brief overview of the project (named Legible Landscapes) and information on multiple forms of contact: telephone, email and a website for further details. In addition, we posted the call on websites and blogs dedicated to matters of local interest.

## BROCKLEY CENTRAL

The online home for all things Brockley (SE4), St John's, Ladywell, Nunhead and Telegraph Hill

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1 comments:

**Monkeyboy said...**

“ Indoor weather sation? Sounds like a some kind of geeky data looging system. Being a geek I'll be signing up.

25 March 2011 14:18

## LEGIBLE LANDSCAPES

### SEEK VOLUNTEERS

SEEKING LOCAL HOUSEHOLDS FROM SE4, SE8, SE14 & SE23 FOR 3 – 4 MONTH STUDY  
We are a design team from the [Interaction Research Studio at Goldsmiths, University of London](#). We have been working on a variety of small digital devices to expose the home's microclimate – imagine a miniature weather station. Now we would like to lend these devices to you in return for telling us about your experiences of living with them.





## Volunteer Events

Once we had received around 30 expressions of interest from potential volunteers, we hosted a series of events at the university to introduce the project and hand out Cultural Probes packs. These materials were designed for potential recruits to explore the microclimate of the home and engage with the issues that we were investigating in the project, such as habitus [5], energy consumption and routines.

We hosted four such events and received Cultural Probe returns from around 20 households that formed the basis of our volunteer group for the remainder of the project. This set of probes guided some aspects of the IWS designs, but their development had been underway for some time. The main purpose of these materials was as a warm-up activity, introducing some of the IWS themes to our volunteers prior to receiving the final devices.



# Initial Deployment

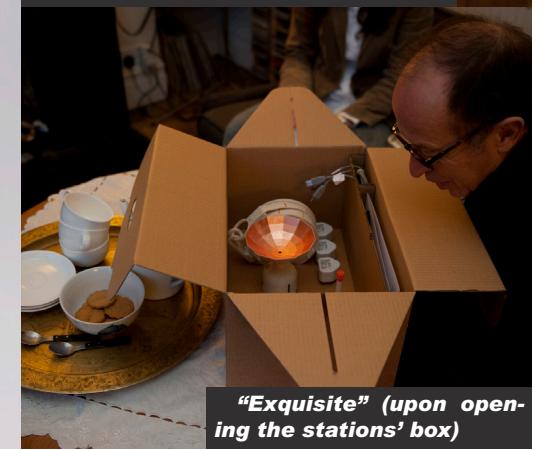
Due to the scale of the project, we had always intended to host events where we would deploy devices to multiple participants at a time. However, initially we used the more traditional method (for us) of deploying devices at the individual homes of volunteers. We decided to release a beta set of the IWS to six participant households to allow us to learn from their experience, and give us time to tweak and rationalise the devices for the remaining volunteers. We designed packaging for the devices that enabled them to be hand-delivered - a method of deployment which was native to the studio. Although we installed the first six sets of devices into participant's homes, we designed the packaging to support self-installation for future batch-deployments at public locations. A quick-start guide was made, USB leads were labelled to correspond to each device, and a community website was set up with FAQs and a forum for tips 'n tricks. We also included diary-like Significant Moment Forms, designed to allow our participants to report on their experiences.



Collectively called the Indoor Weather Stations (IWS), each set consists of the Temperature Tape, Light Collector and the Wind Tunnel. They reveal the home's microclimate by highlighting temperature differentials, the colour of ambient light, and small gusts of wind and within the home. 22 of these sets were made.



*"You showed some of the things in the studio [e.g. plane tracker and drift table], those were intriguing."*



*"Exquisite" (upon opening the stations' box)*

We used a range of deployment methods to accommodate the evolving requirements of the project and participants e.g. the production-line schedule (we were manufacturing roughly two devices a day), facilitating deployments for large numbers, and fitting around the availability of volunteers. After our initial tranche of individually installed beta-devices, we began hosting group deployment events. We held two within our studio and one at a café local to our volunteers. These group events were easier to coordinate than individual household visits, all occurring over the weekend (suited the working life of the majority of our participants).

Each deployment method has subtle effects on the way the volunteers responded to the study. We outline the main differences:

#### Individual home-visits:

- Build an intimate researcher-volunteer relationship, one that helps the volunteer to take responsibility as a participant.
- Volunteers may ask questions that they might not within group situations.
- The devices are immediately contextualised in the home.
- Technical issues can be resolved straight away.

#### Studio group deployments:

- Relies on the participants installing the devices themselves. Technical manuals and guidance needs to be designed accordingly, but installations may be delayed due the time commitment.
- Leads to more impersonal researcher-participant relations.
- Makes participant feel they are part of a community.

#### Cafe group deployments:

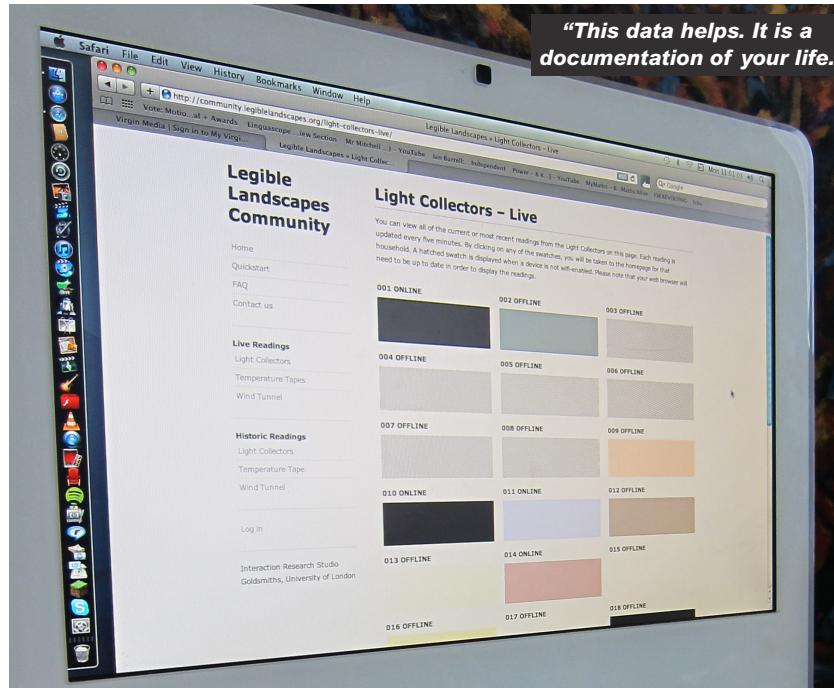
- Neutral space helps to equalise the roles of the researcher and participant.
- Shares the same installation issues as with studio-hosted deployments.

# Deployment batches









## Sharing data

The launch of a community website offered a greater context and new insights into the devices. Displaying real-time and historic readings of sensor data from every device, participants were now able to view larger windows of archived data as well as readings from other households. Photo galleries and comment boxes encouraged a greater interaction between participants. A number of digital and physical interventions were also produced that reframed the sensor data in another format, including monthly paper calendars containing colour swatches of light that were posted to various households, weekly e-newsletters containing our weather observations, maps of community data and assignments for participants to create their own climate report of their home. By using a range of communication methods, we aimed to get a higher volume and greater variety of feedback, reframing the data and requesting participant voices in multiple ways to appeal to multiple personalities.

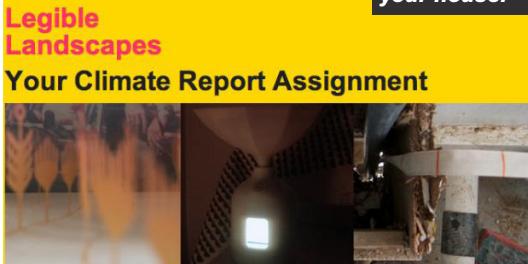
**"Comparative data between households would be like moving back to the 'village' where everyone knows what you are up to. E.g. 'what were you doing up at 3 am?'."**

**"022**  
30 May '12 at 7:56pm  
014 how doyou achieve that aubergine

**001**  
31 May '12 at 2:24pm  
...Our LW is in grey room with ambient light from a N facing window. Not mych fun for a LW admittedly but missed the readin when it was on the window sill in the fresh air... what colour was that I wonder?"



*"It would be nice to see this [the weather station] data before you buy a house – especially the light collector – a kind of color profile of your house."*



# Studio participants

Following the deployment of 21 IWS, studio members took home set 022. This introduced a shift in our role from project administrator to project participant; we had previously interacted with participants by offering our own observations of their data and requesting feedback, whereas we were now able to discuss shared experiences of the devices and of our own data. Having lived with the devices for a number of months, participants were encouraged to provide their own feedback through ‘self-reporting’, calling upon their own profession or interests to form new interpretations. Examples included magazine articles and a language analysis of the ‘significant moment forms’. One participant drew upon his practice as an artist to produce a carefully composed photograph of the Light Collector sitting alongside his painted portrait of the device (shown in the photo on the far right). A locally hosted closing event was an opportunity for participants to discuss and reflect upon their experiences and revisit their data as a group, as well as to renounce their IWS if desired. This group event enabled the sharing of stories, highlighting the multiplicity in the interpretations of the devices.



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## Conclusion

This paper demonstrates our process in generating multiple interpretation and feedback from the IWS through a longitudinal study with multiple participants. This was an ambitious project that built upon our previous work of gathering polyphonic views of singular devices in group situations [5] but was far from our usual practice of deploying one research artefact in one situation at a time. In order to scale our practice we had to develop new methodologies.

We targeted a geographical area to recruit participants from and drew on existing networks to spread the call for volunteers. As well as utilising physical spaces such as shop windows, cafes and parks, we also published the call on community blogs and websites and instigated online discussion about participation in the project. In order to deploy 66 devices to 22 different households, we developed group deployment events held within our studio and at a local cafe. These events offered a more practical method for deploying to many people at one time. While they lacked the one-to-one relationship building of researcher-participant of our conventional practice, they served as an opportunity to build a community of users willing to share experiences among themselves.

Finally, new methods were developed to capture participants experiences and interpretations. By designing various ways to collect observations, including Significant Moment Forms to annotate by hand, postal paper data calendars and twitter conversations, we strived to cater for the different communications preferences of each household. The collection of the individual forms, alongside group events with multiple participants, presented the number and range of polyphonic interpretations.

Though we expected to collect an array of distinct interpretations from our participants, we were surprised at our initial feedback (and a little disappointed) at the similarity between participants' views. Maybe this is to be expected when recruiting volunteers from a small geographic pool (where people of similar socio-economic background reside)? Although most deployments do follow a general pattern - interest ebbs and flows throughout the duration of the trial (initial curiosity, then familiarity, disillusionment, then renewed appreciation), the particularities of each experience is unique. The polyphony might be subtle, for example if you were to plot all the participants on a scale, and

look at any two that are adjacent you may see shared opinion with only small incremental, idiosyncratic differences:

*"We like them but just don't know what to do with them." (household 000)*

*"We have two rabbits downstairs and they are unreadable as well. But we like that. The stations are similar. We don't know what the rabbits are doing but we just want them to be happy." (household 000)*

However if you compare the two participant households at the two extremes of the scale the differences not only in the way the devices are interpreted, but in the way people live, are quite pronounced.

*"We live in a cave!" (household 000 in comparing her light collector's data with others).*

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