GENERATING MOBILITY AND POWER THROUGH ART

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ABSTRACT

This paper explores the ideas of mobility and power using the case study *Pedal Power for Bybrua*, commissioned for 'Stavanger 2008' – Capital of Culture. Three pedal powered generators were made available to the community of Pedersgata. During daylight hours these devices were located in a number of public sites and situations. During nighttime, the stored energy was released as part of a pedestrian lighting system installed beneath the City Road Bridge 'Bybrua'. This paper will focus on the only mobile generator; *Bridgit* known for its capacity to offer transit from one side of the bridge to the other.

In an oil rich nation what would it mean to introduce more modest forms of energy production? How would the installation of a human powered lighting system change the way people perceive the underpass space? How might 'human power' change human behavior? What might the social, economic, and environmental benefits be?

This project demonstrates a number of practical interventions inspired by the critical writings of Ivan Illich and Henri Lefebvre. These sculptural devices allow the problems of contemporary mobility to be seen as generative opportunities; both in terms of dialogue and energy.

Context

Throughout the World the number of large-scale wind and solar projects is proliferating. Such schemes dwarf their surroundings and often face opposition from local communities. Whilst this drive towards a more sustainable energy mix ensures a bright future for renewables, the 'passive energy gain' offered (embodied by solar, tidal, and wind power) also has the potential to reinforce a public malaise in terms of consumption. "The energy crisis cannot be overwhelmed by more energy inputs". (Illich, 1974: 22) The fundamental question then, has to be that of confronting the public with their levels of consumption and reducing those levels to a point where they are sustainable.

In response to these issues this paper describes the results of a temporary public intervention commissioned for 'Stavanger 2008'. In August 2008 a variety of pedal powered generators were made available to the community of Pedersgata in Stavanger, Norway. During daylight hours these devices were offered for use in a number of public sites and situations. During nighttime, the stored energy was released as part of a pedestrian lighting system installed beneath the City Road Bridge. This paper focuses on one of the three generators *Bridgit* – so called for its mobile capacity for transporting users/producers from one side of City Bridge to the other. This intervention methodology paid homage to Henri Lefebvre's Rhythmanalysis: "Works might return to and intervene in the everyday. Without claiming to change life, but by fully reinstating the sensible in consciousnesses and in thought, [the Rhythmanalyst] would accomplish a tiny part of the revolutionary transformation of this world and this society". (Lefebvre, 1992: 26) How might 'human power' change human behavior? What might the social, economic and environmental benefits be? Would this intervention help reinstate a sense of communal ownership and sufficiency?

Background

Although no specific brief was given, it was evident that my invitation had come on the back of previous art works using alternative energy in socially engaged forms. During a period of research and development involving site visits and extended dialogue, a focus began to emerge – one that explored Norway's rich cultural heritage and landscape, probing the complexities of Stavangers position as European 'Oil Capital'.

A pedestrian underpass beneath the main city road bridge, 'Bybrua' became the focus for this research. The bridge itself had been built in the early 1970's when Norway struck 'black gold' in the North Sea. Essentially this was a fairly nondescript pedestrian walkway situated between a park and a residential street. However, what made this space unusual in the context of Stavanger were its various problems. The space where the bridge meets the ground was regularly covered in graffiti and constantly shrouded in darkness, both physical and psychological. The stench of urine and the sight of intravenous syringes and household rubbish was fairly constant. What had been designed as a crossroads space linking a network of paths and communities had become a place of conflict (1). Human traces were a confusion of signs ranging from territorial claim, to that of abandonment. This lack of ownership existed despite the close proximity of neighboring houses. (see figure 1).

Figure 1. Sitting with the owners of the house next to the bridge. (bridge structure is visible through trees).

Method

My initial proposal involved creating a new lighting system for the underpass, powered by wind turbines and photovoltaic panels installed on top of the bridge. The rationale was simple: replace the reduced level of natural light with artificial light to see what impact this intervention had in social/environmental terms. Make the design renewable and parasitic – using the bridge as host. On reflection however, and after discussion with locals, this initial concept was modified on the basis that such a technological or mechanical approach might be overlooked and dismissed as municipal. A stronger intervention was needed - one that encouraged human engagement.

The revised strategy borrowed much from Bybruas history: The bridge had originally been conceived as a toll bridge, but increased revenue from the oil boom rendered this levy unnecessary. Oil financed the bridge, cars used it, but the poorer working-class inhabitants of Pedersgata continued to pay the price in social/environmental terms. My revised proposal therefore adopted the concept of a toll, but aligned any 'profits' to the problem space beneath. Instead of money, the currency for this new toll system would be human energy and time. The intended outcome: to augment a real physiological connection between people and place based on communal effort. But would city residents be willing to contribute?

On August 20th the lighting system (consisting of eight LED units) was installed in the pedestrian underpass linked to a small bank of 12v batteries in the bridge storage space. The batteries required 'topping up' on a daily basis, so in daylight hours they were disconnected from the bridge and linked to three pedal powered generators located around the city. For nine days from 22nd –30th August, these portable devices were made available to the public in a range of different settings. Each generator had its own name, linked to its abilities and characteristics: *Jim* was designed for the street, and to infiltrate popular spin classes at the Gym. Pedro could be safely rowed with hands or pedaled with feet – ideal for use in schools. Finally, *Bridgit,* capable of operating as a bicycle - provided transit from one side of Bybrua to the other. These names suggested potential use, but in reality donation venues ranged widely, from schools, streets, shopping precincts, museums, galleries, cultural centers, shop fronts, door to door, parks, cafes, and even the Oil North Seas conference centre.

Figure 2. The Artist inviting participation from passers-by - offering free transit across the bridge using 'Bridgit'.

Observations

The most difficult place to occupy, with any hope of meeting willing volunteers, proved to be the underpass space itself – such were the problems of that environment. This raised an interesting question about the willingness of donors to contribute their energy - and their relative distance to, or awareness of the donor site. This relationship between distance and effort was dependent on the individual participant and the device used. Anecdotal evidence suggested that if the energy contributed would have otherwise gone to waste (in the gym for example) then donors didn't seem to care what the batteries were going to be used for. Conversely, when contributions resulted from a specific request (ie. when going from door to door) donors wanted to know exactly what their efforts would be used for.

This need to explain the work in terms of its aims and function diminished somewhat when operating *Bridgit* on City Bridge(see figure 2). Here volunteers could experience the personal benefits of the work in terms of it providing an unexpected 'gift' of transit. They could also reflect on the energy they were contributing to the lighting system in the time it took them to cycle the full length of the bridge. A high proportion of participants in this context were immigrant workers on temporary contracts – most other commuters being bike owners.

In different contexts, with a wide range of participants, the generators took on new meanings: In the gym for example the generators became conscientious devices mopping up and illuminating waste energy. In schools they became educational tools for activating the curriculum in subjects as diverse as science and technology, ecology, and physical education. In other situations they oscillated between toy and conversation piece. They were often met with curiosity bordering on suspicion, but pedaled enthusiastically with a sense of fun. This sense of humor, rather than social obligation, was often the hallmark of participation and exchange. With the 'Bridgit' generator, which transported riders from one side of the bridge to the other, trust became another interesting question: Where would riders put the bike once they reached the other side? Would the bike be safely returned? Some participants discussed the project in relation to the Norwegian tradition of Dognad or 'community service' (2) where small groups of volunteers would co-operate in an attempt to make physical improvements in the local environment. In an increasingly affluent country where collective traditions are perceived to be under threat, this observation seemed poignant.

Even before the project began, a recurring question had been: Would individuals be able to see how much energy they had contributed to the battery? Some enthusiastic cyclists had even suggested arranging competitions between schools or cycle clubs. In public situations when the generators were not entrusted to an institution, facilitators engaged with the public by asking if they had a minute to spare. Once volunteers began cycling, conversations and pedaling usually continued well beyond the minute mark. On one occasion in the market square outside the Cathedral, a male participant willingly gifted one minutes pedal power and then returned fifteen minutes later (complete with tracksuit) to perform a full forty-five minute workout on *Jim*. It transpired that he had been on his

way to the gym anyway, and so decided to perform his usual workout in public. When asked why he had been so willing to gift his time and energy, his response was simple: "My energy would have gone to waste otherwise". In the case of *Bridgit* where some of the energy was effectively siphoned off from potential movement, the concept of individual effort and communal gain was kept in perpetual balance.

Conclusion

Pedal Power for Bybrua was never established as serious competition to more conventional forms of energy production. Instead it was devised as a temporary experiment to test the willingness of the public to commit to human powered alternatives. How would people respond when they were implicated directly in energy supply? Would the demands of a public space warrant their physical efforts? The reality of the experiment would be clear for all to see - If they failed or refused to pedal, the lights would simply go out.

The lighting system did function successfully for the duration of the project. In fact, the success of the design actually created an unforeseen problem. Because the lights required relatively little power input (and estimates had erred on the side of caution) the volunteer schedule was twice abandoned due to fears of damaging the batteries through overcharging. Instead of collecting energy, project facilitators were forced to return to the art centre to dump surplus energy by running domestic appliances off the batteries using an inverter. This action released enough storage capacity to allow harvesting of human energy to resume. This situation suggests a genuine potential for combining untapped human energy, with efficient, hi-tech appliances such as LED lighting.

During the nine-day period of this project almost one thousand people agreed to contribute their energy to this system and almost every institution approached agreed to take part in the scheme. In addition, project facilitators were also urged to visit new venues unsolicited - stretching the projects modest resources in the process. On Nedre Dalgate (the street connecting the bridge to the art centre) where door-to-door calls were carried out, only three households refused to participate. This combined generosity from all donors resulted in all eight lights being successfully powered for the duration of the project. Beyond this straightforward question of lighting, it is also apparent that dialogue about renewables, energy, and community was made possible through social interaction. Dialogue also extended beyond local exchanges after entering the mainstream media - evidence of which can be found on websites and in the press (3).

It's difficult to gauge people's precise motivation for participating in such a project. Did participants want to address the design problems of the underpass, or were they simply burning off unwanted calories? Were people contributing in order to be part of an art project, or was it an urge for social (inter)action? To unpick these questions is often a thankless task, but in the case of Bridgit participants seemed grateful for the use loan of a bike and were happy to see some of their pedal output going to the lighting system – a payback of sorts.

Significantly, local people asked if the lights were going to stay. This too might be interpreted as some kind of

measure of success: As Anthony Dunne suggests '[Design] must not just visualize a 'better World, but arouse in the public the desire for one.' (Dunne, 1999: 68) In this instance though, the lights were never meant to stay. They weren't conceived as a long-term solution to that particular problem. Instead, they were installed to make people ask questions, and to generate debate. If, in these times of recurrent 'energy crisis', energy becomes synonymous with power, then surely the ethical and creative response is to encourage a wider sense of participation and ownership? In the specific case of Bridgit a case was made for the mobile user to become producer. Tomorrow's technology will increase our capacity for even greater invention around ideas of mobility and power generation, but the key to successful implementation will be empathy, imagination, and perhaps even a sense of humor.

REFERENCES:

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ENDNOTES:

(1) Between the date of the first written proposal and the actual project going live, three rape incidents were reported in the local area by the Stavanger Aftenbladet – one of which happened in the early hours of the morning a short distance from the underpass. Tore Renberg, local author of 'The Heat' describes his memories of this area in the article 'The Road to Hell'. http://www.touscene.com/nb/prosjekt/tou-works/artikkel/veien-til-helvete

(2) In the UK the closest English translation of Dognad is 'Community Service', better known as a form of legal punishment rather than a voluntary contribution to the local environmental.

(3) The dialogue went much further addressing audiences all over Norway via National radio with an audience of one Million listeners. http://nrk.no/programmer/radio/nitimen/1.6196534 It also featured on the K & GT blog: http://kandgt2008.blogspot.com/ as part of an informal arts review of the capital of culture events. The project was also followed up by the Storhaug School website following our visit. http://www.linksidene.no/minskole/Storhaug/pilot.nsf/vindex?Opennavigator&count=8 In addition there were two features in the Rogalands Avis newspaper 23/8/08 & 26/8/08 and a front page article on the local Storhaug Bydelsavis newspaper.