

## AS FUNCTIONAL PROTOTYPE - PEDAL POWERED LIGHT INTERVENTION AT CITY BRIDGE, STAVANGER

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“High quanta of energy degrade social relations just as inevitably as they destroy the physical milieu”. (ILLICH, 1974)

### INTRODUCTION

Throughout Europe the number of large-scale wind and solar projects is escalating. Such schemes dwarf their surroundings and often face opposition from local communities: So-called NIMBYs (Not In My Back Yard) object to plans on environmental and aesthetic grounds. Whilst the Global drive towards a greater energy mix ensures a bright future for renewables, the ‘passive energy gain’ they offer (embodied by solar, tidal and wind power) also has the potential to reinforce a public malaise in relation to consumption. “The energy crisis cannot be overwhelmed by more energy inputs”. (Illich, 1974) 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: During the daylight hours these devices were offered for use in a number of 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 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)

### QUESTIONS

In an oil rich European 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? Would this intervention help reinstate a sense of communal ownership and sufficiency? What are the wider implications of this study?

### BACKGROUND

In November 2007 the author was commissioned by Rogaland Kunstsenter to develop a new public art project for Stavanger 2008 – ‘Capital of Culture’. It was suggested that a previous work<sup>1</sup> - a mobile solar-powered ice cream stall (which produced, stored and distributed fresh produce made from local

<sup>1</sup>Sustainable Indulgence was originally commissioned for the Whitstable Biennale in 2004 and later re-designed for the Aichi Expo in Japan, 2005.

ingredients) might be the ideal project to celebrate the occasion. However, during a period of research involving site visits and extended dialogue with potential project partners, a new direction for the project began to develop – one that explored Norway’s rich cultural heritage and landscape, probing the complexities of Stavangers position as ‘Oil Capital’<sup>2</sup>.

A pedestrian underpass beneath the main city road bridge, ‘Bybrua’<sup>3</sup> 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, physical and psychological.<sup>4</sup> On closer inspection the stench of urine, intravenous syringes and household rubbish were omnipresent. What had been designed as a crossroads space linking a network of paths and communities, had become a place of conflict<sup>5</sup>. 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.

## METHOD

The 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, 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 been conceived originally as a toll bridge. Increased revenue flow from the oil boom<sup>6</sup> made this toll element obsolete shortly after it’s completion. Oil financed the bridge, cars used it, but the mainly poor working-class inhabitants of Pedersgata would go on paying the price in social/environmental terms<sup>7</sup>. The revised proposal involved adopting the concept of a toll, but aligning 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. Would city residents be willing to contribute?

On August 20<sup>th</sup> the lighting system<sup>8</sup> 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 and 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 22<sup>nd</sup> –30<sup>th</sup> 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:<sup>9</sup> ‘Jim’ was designed for the street, and to infiltrate popular spinning classes at the Gym. ‘Pedro’ could be safely rowed with hands or pedaled with feet – ideal for use in schools. Finally, ‘Bridgit’,

<sup>2</sup>Norway is one of the Worlds largest net oil exporters and Stavanger actively promotes itself as Noways Oil Capital.

<sup>3</sup>In fact the bridge might well have been a tunnel had the voice of the working-class Storhaug residents been more powerful. In September 2008 a similar fate awaits the residents of Nytorget (near Rogaland Kunstsenter) as plans go forward to sink a three floor, 600 unit car-park beneath the streets where many locals would like to see a valuable green space retained.

<sup>4</sup>Half of the pedestrian lighting system had been vandalised many months before. Over a year later these had still not been fixed.

<sup>5</sup>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.

<sup>6</sup>The toll charge was dropped a few years after the bridge opening – an indirect result of increased government wealth following the 1970’s oil boom.

<sup>7</sup>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>

<sup>8</sup>Consisting of eight Light Emitting Diode (LED) units

<sup>9</sup>Two of these generators – ‘Bridgit’ and ‘Jim’ were made bespoke for the project, based on various designs made available by DIY enthusiasts on the Internet. ‘Pedro’ was purchased readymade from Windstream, and simply given a plinth/mobile crate, and a new name.

capable of operating as a bicycle - offering 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 centres, shop fronts, door to door, parks, cafes and even the Oil North Seas conference centre<sup>10</sup>.

## 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 (i.e. when going from door to door) donors wanted to know exactly what their efforts would be used for.

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 a sense of curiosity bordering on suspicion, but pedaled enthusiastically with a sense of fun. This sense of humour, rather than social obligation, was often the hallmark of participation and exchange<sup>11</sup>. 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'<sup>12</sup> 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 might be perceived as threatened, 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, having got changed at the gym. 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".

*An intended aim of the project had been to turn the pedestrian underpass into more of a meeting place, and less of a passing place. With so many people contributing power to the lights it was inevitable that they would be curious to see the impact of their efforts. Twice 'sightseers' were actually observed returning to the bridge after darkness specifically to see the lights they had helped energize. On one occasion a small group of children were heard conversing with their parents in the darkness.*

## CONCLUSION

Pedal Power for Bybrua was never established as serious competition to more conventional forms of

<sup>10</sup>On the penultimate day of the project 'Bridgit' was ridden from Bybrua to the huge Oil North Seas (ONS) conference and back again, generating energy in the process.

<sup>11</sup>The use of the word 'exchange' here references social anthropologist Marcel Mauss who understood gifts as part of a complex matrix of social interaction and obligation.

<sup>12</sup>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.

energy production. It was devised as a temporary experiment to test the willingness of the public to embrace micro-renewables. 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 go out. In an oil rich economy, what impact would this simple intervention make?

To begin answering these questions it is best to start with some simple facts: The lighting system did function successfully for the duration of the project. In fact, so efficient were the lights, that an unforeseen problem emerged: Because the lights required so little power (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. This was done by running electrical appliances off the batteries through an inverter. This action released enough storage capacity in the batteries to allow harvesting of human energy to be resumed. This somewhat ironic 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.<sup>13</sup> The generators were also requested back to places they had already been located. In addition, project facilitators were also urged to visit new venues unsolicited - stretching the projects modest resources in the process. On Nedre Dalgate<sup>14</sup> where door-to-door calls were carried out, only three households refused to participate<sup>15</sup>. 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, community and much more besides, was made possible through social interaction. Dialogue extended beyond these local exchanges by entering the mainstream media - evidence of which can be found on websites and in the press<sup>16</sup>.

It is impossible to gauge people's precise motivation for participating in such a project - reasons vary from person to person. 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 and other complex questions is an interesting but fruitless activity. It also goes against the projects aims of making connections - between the real and the imaginary, between low-tech and high-tech, person and place, concept and action. Significantly though, people did ask 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) In this instance 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?

*'Despite having recently initiated a partial realization of the most obvious dangers that threaten the natural environment of our societies, they are generally content to simply tackle industrial pollution and then from a purely technocratic perspective, whereas only an ethico-political articulation- which I call ecosophy - between the three ecological registers (the environment, social relations and human subjectivity) would be likely to clarify these questions'.* (GUATTARI, 1989)

<sup>13</sup>The only negative response was from an indoor shopping centre. Participating partners included, Storhaug School, Nylunde School, Johannes Loeringsenter, SATS Gym, Kulturhus, Oesterhus Café, and the North Seas Oil Museum. The latter showed some interest in actually hiring the system for demonstration and display purposes, as did a journalist from PUTSJ the magazine belonging to the organisation Natur og Ungdom.

<sup>14</sup>This residential street connects the bridge to the art centre.

<sup>15</sup>One person was unable to come to the door through disability and spoke from the window. Another insisted that she was about to leave the house and was in a hurry. The other was suffering from a bad cold and requested future contact with a view to volunteering following recovery.

## REFERENCES

- DUNNE, Anthony. 1999. *Herzian Tales*. RCA Publications.
- GUATTARI, Felix. 2000. *The Three Ecologies*. Continuum.
- ILLICH, Ivan. 1974. *Energy and Equity*. Calder and Boyars.
- LEFEBVRE, Henri. 2004. *Rhythmanalysis - Space, Time and Everyday Life*. Continuum.
- MAUSS, Marcel. 1954. *The Gift*. Routledge Classics.

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