

[ space ]

# ActiveEnergy Report 2010

PROJECT OUTLINE

PHASE 1: WIND POWER

PHASE 2: TIDAL POWER

QUALITIES AND STRUCTURE OF THE PROJECT

EFFECTING CHANGE

ARTIST'S METHODOLOGY — LORAIN LEESON





# INTRODUCTION

SPACE sought to achieve a model of facilitation that gave the space and platform for participants to instigate and drive a creative project that had a central concern to them. Instead of engaging introspectively the participants' influence and decision-making created a life giving and relevant impact.

*ActiveEnergy* created an innovative coming together of art, technology and engineering. It provided opportunities to explore ideas creatively and to see how using the arts can promote concepts in unexpected, invigorating and compelling ways.

The project involved a multi-discipline collaboration between a great number of people; members of the Geezers' Club and pupils at Bow Boys' School in Tower Hamlets; artist Loraine Leeson, Stephen Dodds, Professor of Control Engineering and Toby Borland, design engineer and manager of the MAGICbox prototype lab at the University of East London; Age Concern Tower Hamlets; and Gateway Housing Association.

The collaboration explored the potential of renewable energy sources and produced a wind powered light installation for public exhibition.

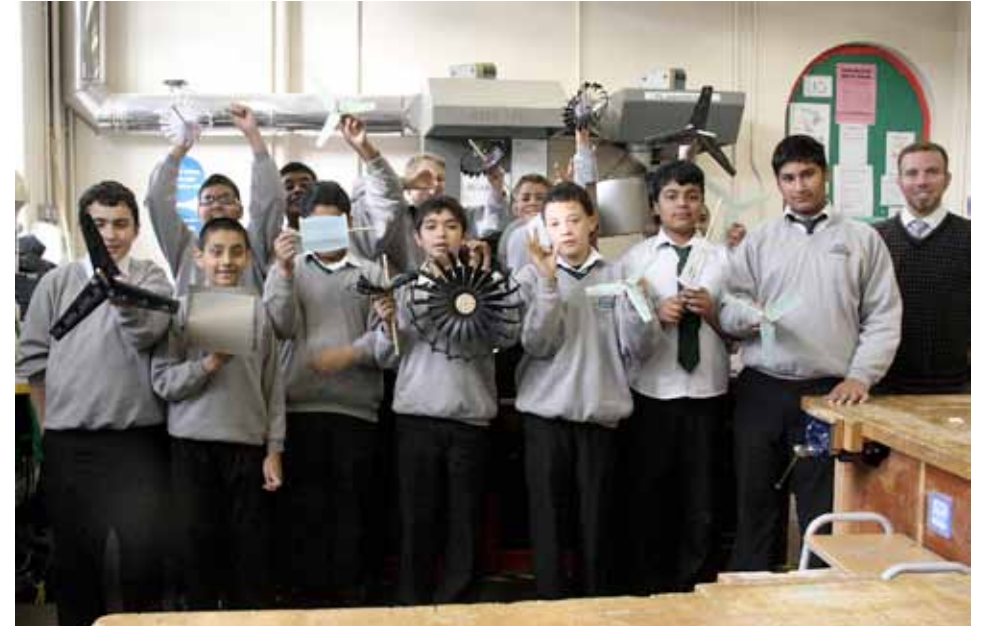
Older people are frequently marginalised by technology in a way that younger people are not. Loraine Leeson worked with a group of retired men, the Geezers, who meet at Age Concern, Tower Hamlets. It became clear that amongst the Geezers' greatest needs was for their voices to be heard on issues that mattered to them, and to use their lifetime experiences to feed back into society and future generations.

In addition [ActiveEnergy](#) took an intergenerational approach to a number of key issues facing local communities in one of London's poorest boroughs. Underachievement amongst boys was addressed in two ways that would otherwise not be on offer through the school curriculum. Firstly, participating young people were mentored by senior men in the local community. Secondly, both groups went to master classes held at the University of East London with a design engineer, one of the country's leading control engineers and an artist who between them to foster skills, creativity and innovation.

Renewable energy is often seen as the remit of those wealthy enough to afford the significant cost of the equipment involved. However, there is growing interest in renewable technologies amongst ordinary people living in East London. In focusing public attention on these issues, [ActiveEnergy](#) sought to address local authorities and housing developers to encourage greater incorporation of renewable energy into residential accommodation in this area.



ActiveEnergy, The Geezer's Club, 2009



ActiveEnergy, Bow Boys' School, 2009

## THE PARTICIPANTS

- The Geezer's Club
- Bow Boys' School of Maths and Computing
- Age Concern, Tower Hamlets
- Gateway Housing Association
- Dr Loraine Leeson
- Toby Borland, MAGICbox, University of East London
- Professor Stephen Dodds, University of East London
- SPACE

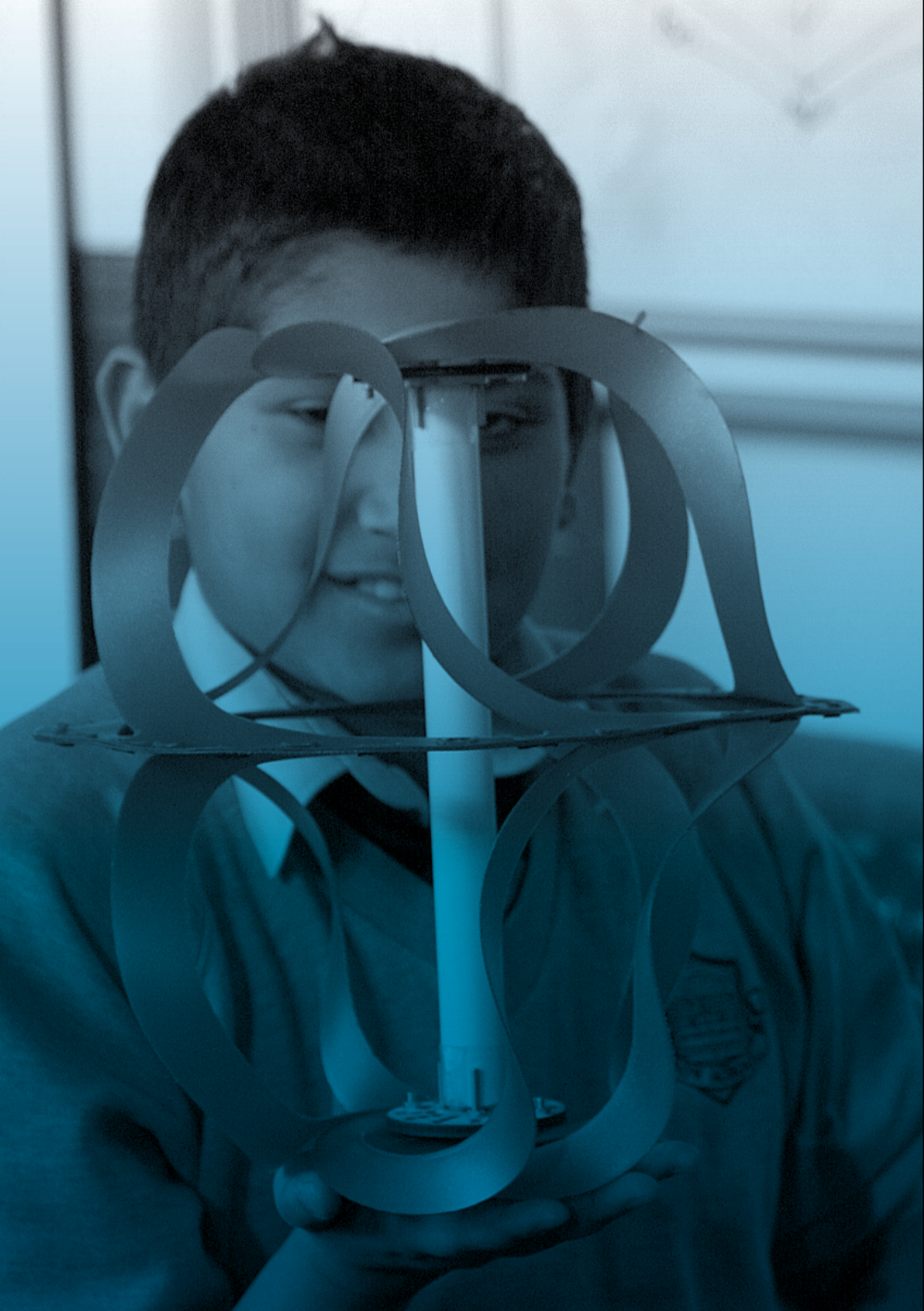


# PROJECT OUTLINE

SEPTEMBER 2009 — APRIL 2010

The project was planned in collaboration with the participants. Two specific and interconnected phases were planned: the first, wind power, led by the young people with mentoring by the older people; the second, tidal power, led by the Geezers. It was decided that the project outcome would be a temporary light installation powered by a wind turbine designed by pupils at Bow Boys' School supported by the Geezers.





# PHASE 1: WIND POWER

SESSIONS AT BOW BOYS' SCHOOL

Phase 1 began with a series of sessions held over three months at Bow Boys' School to introduce the students to the concepts of renewable energy and turbine technology. Loraine Leeson and Toby Borland facilitated the Design and Technology classes with the help of teacher Richard Alvarez, and the boys were mentored and supported by Prof. Dodds and the Geezers. The pupils were divided into small groups for the production of wind turbine designs, both through empirical experiments with paper and laser-cut models and the use of CAD software. At the end of the sessions they built a temporary portable wind tunnel to test their prototypes.



ActiveEnergy, Wind turbine workshop at Bow Boys' School, 2010

### WORKSHOPS AT SMARTLAB UNIVERSITY OF EAST LONDON

A group of boys from the class attended sessions at the MAGICbox laboratory, at the University of East London, Docklands campus. The boys were shown the manufacturing process from computer-generated models through bi-dimensional laser-cut prototypes, which they assembled and tested. Toby and Richard facilitated discussions and reflections on the positive and negative aspects of different designs in relation to the production of power, and through this testing a final design was chosen to become a larger functioning prototype.



ActiveEnergy, Wind turbine workshop at Bow Boys' School, 2010

### WIND TURBINE INSTALLATION AND LAUNCH AT APPIAN COURT

Toby constructed the final self-powered LED lighting wind turbine and installed it on the roof at Appian Court. The turbine powered an LED display which, when the blades were spinning, spelt out the words 'geezer power'.

The *Geezer Power* installation was officially launched in May 2010. The Geezers and Bow Boys made a presentation to an invited audience of funders, local authority officers, Gateway Housing staff, local residents and Appian Court users, artists, practitioners and engineers. The event was covered by the local newspaper, East London Advertiser.





## PHASE 2: TIDAL POWER

WORKSHOPS AT MAGICBOX,  
UNIVERSITY OF EAST LONDON

The second phase of the *ActiveEnergy* project concerned the development of designs for a tidal power turbine. The Geezers took part in sessions where they discussed and tested ideas for a tidal power turbine. They selected designs and Toby produced three-dimensional models with the laser-cutting machine.

During the final session the Geezers carried out a preliminary test of these small-scale prototypes using a water tank to simulate the water flow of the River Thames. The whole group then travelled to Westminster to meet Nithin Rae who owns a barge moored on the River Thames and who is interested in renewable energy provided by water technologies. The barge was chosen as a future location for installing the tidal power water turbine.





ActiveEnergy, Water turbine workshop at UEL, 2010



ActiveEnergy, Water turbine workshop at UEL, 2010



# QUALITIES AND STRUCTURE OF THE PROJECT

AN INTERGENERATIONAL APPROACH TO RENEWABLE ENERGIES IN BOW, TOWER HAMLETS

The support structure put in place for the boys from Bow Boys' School was multilayered. Prof. Dodds and the Geezers mentored them in the sessions, while Toby and Loraine collaborated more closely with Richard Alvarez, Bow Boys' School Design and Technology teacher, and held regular feedback sessions to discuss progress.

*'they got it; up to that point it was difficult for them to see what they were making'*

→ Richard Alvarez, Teacher

### INTERGENERATIONAL APPROACHES

Richard said the young people were *'a bit scared and confused about having senior men sitting through their classes'*, but soon they showed *'great curiosity'*. In the words of one of the boys, it was strange to work with the Geezers as *'normally you get young people coming to school'*. The boys were intrigued to hear about the past professional occupations of some of the senior men, especially those who worked in engineering. One of the boys thought that the Geezers were very different from other older people they knew, *'because they are smarter and more expert'* and because *'they bother coming to speak to us'*.

### LOCAL COMMUNITY

It was the combination between renewable energies and the local community that made the project appealing to the school. Richard observed that for young people growing up in a densely populated urban environment such as Bow, with little contact with green areas and natural resources, it is difficult to make the connection between renewable energies and their everyday lives.

### NEW MODELS FOR LEARNING

The ActiveEnergy project is situated at the meeting point between art and engineering, where the disciplines combine to enable younger and older people to share ideas and develop designs for renewable energy technologies that could benefit their local communities. In this context learning is central, both in relation to the development of technological skills, and in the sense of a relational process that creates connections between participants.

The question of learning was crucial to the involvement of the Year 8 boys, who participated in the project within the framework of their Design and Technology (DT) course. DT teacher Richard Alvarez felt that the facilities at Bow School, including computers for digital simulations, wood work and metal work tools, were not sufficient to cover the practical aspect of the national curriculum and to engage empirically in discussions about energy sources and innovative designs. For this reason he thought that the sessions led by Toby Borland at Bow Boys' School, and later at UEL, greatly enriched the boys' learning process.

*'The project provided an extraordinary opportunity for the young people to experience the importance of design in the production of new technology.'*

→ Richard Alvarez, Teacher



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The boys' visit to MAGICbox (part of SMARTlab at the University of East London) produced exciting and tangible results. They used the Epilog Helix Laser: a laser cutter that enables patterns and images to be cut or etched in a variety of materials from a computer-generated model. The boys were interested that the laboratory was part of an educational establishment, and for all of them it was their first encounter with higher education. They were surprised to see that there were so many computers and to hear that Toby spent his entire day *'at school'*. The laser cut machine was considered by the boys *'the best thing'*. It was also the centre of animated discussions among the Geezers on their visits as it provided a rapid way of translating a drawing into a three dimensional object. According to Richard the production of three-dimensional prototypes and the wind tunnel testing were extremely important, as *'the boys developed a better grasp of the relationship between design and technology'*.



ActiveEnergy, Wind turbine workshop at UEL, 2010

*'at school we only use computers'*

→ Student, Bow Boys' School

This became apparent during the preparation for the final presentation, when the boys were able to explain theoretically difficult processes. At the beginning the young people were not interested in theory, but after the ActiveEnergy sessions they were confident enough to explain in public the decision behind a given design.

Toby's sessions at the school ranged from presentations of stop-motion animation to empirical experiments with paper modelling and foam wings. According to Richard, *'Toby was exceptional at thinking outside the box and engaging with design in a fun way'* and his sessions were a great success as *'he had a fantastic way of speaking to the young people'*. It was Toby's first experience dealing with a classroom of secondary school children, and proved extremely demanding. In his own words: *'with kids you have to run it as a magic show: one trick after another!'*

*'were capable of evaluating, explaining systematically the reason for their decisions through testing of innovative designs for something as complex as a turbine wing';*

→Richard Alvarez, Teacher



ActiveEnergy, Wind turbine workshop at Bow Boys' School, 2010



ActiveEnergy, Water turbine workshop at UEL, 2010



Toby considers himself a facilitator who can guide and support individuals and groups to make objects, allowing for a de-personalisation of the learning process *'moving from what you know to the making of an object'*. Talking about the Year 8 boys, Toby observed that the social aspect of learning is still very predominant; ignorance is perceived as a personal shortcoming and as a source of social inadequacy. This can be problematic in relation to the young people's approach to technology and logical reasoning as *'you don't know when they don't understand because they are too afraid to make mistakes'*.

The Geezers' presence at MAGICbox was easier for Toby to facilitate. Toby's involvement was exactly the sort of help they required to actualise their idea, and in this sense, the support required for phase 2 was more similar to the self-driven projects that usually take place at MAGICbox.

*'The Geezers are more straightforward about what they don't understand, they are not shy because they are not interested in the social dynamics and they came to the project with a very determined target in mind'*

→ Toby Borland, MAGICbox (UEL)



ActiveEnergy, Water turbine workshop at UEL, 2010



ActiveEnergy, Wind turbine workshop at Bow Boys' School, 2010



## FROM PARTICIPANT-LED TO COLLABORATIVE

The project explored a collaborative model for working with artists, engineers and older people. The participants became partners in a project that had as a common denominator the desire to change society starting from the small-scale and to prove that social transformation can be initiated from the bottom-up. Attention to detail was crucial to get the message across to the community in Bow. For instance, once Toby had installed the self-powered LED-light work wind turbine on the Age Concern Resource Centre, some of the Geezers proposed to place the plaque with the explanation on the external railings by the bus stop rather than within the courtyard. Similarly, in the presentation and the questions and answers that followed, the Geezers linked the project to local issues and dynamics.

Since the project was framed within an institutional educational setting, a more participatory engagement would have required a long-term and more continuous engagement with the class. However, the boys seemed to be aware of taking part in a different learning format and thought that Toby *'was not exactly a teacher'* because he was *'more fun and relaxed'*. In terms of their relationship with the Geezers, the boys felt that they were certainly learning from them, yet the direction was not only one-way.

*'we give them ideas, they give us ideas, different ideas mix together.'*

→ Student, Bow Boys' School

## AN ARTS-LED TECHNOLOGY PROJECT

Arts-led does not mean artist led and Loraine Leeson is clear about this point: her understanding of art is centred on the production of meanings about the world. The role of Loraine in this project was to facilitate the process through which a shared collective meaning was produced from a set of diverse agendas and interests. The artistic trajectory she draws upon is that of socially engaged art, going back to practices that developed around community activism and political art.<sup>1</sup> This tradition is radically different from the avant-garde understanding of art, as it stresses the dialogical aspect of aesthetics.<sup>2</sup> She is concerned with the quality of the dialogues initiated and sustained between participants, art practice as process based and relational.

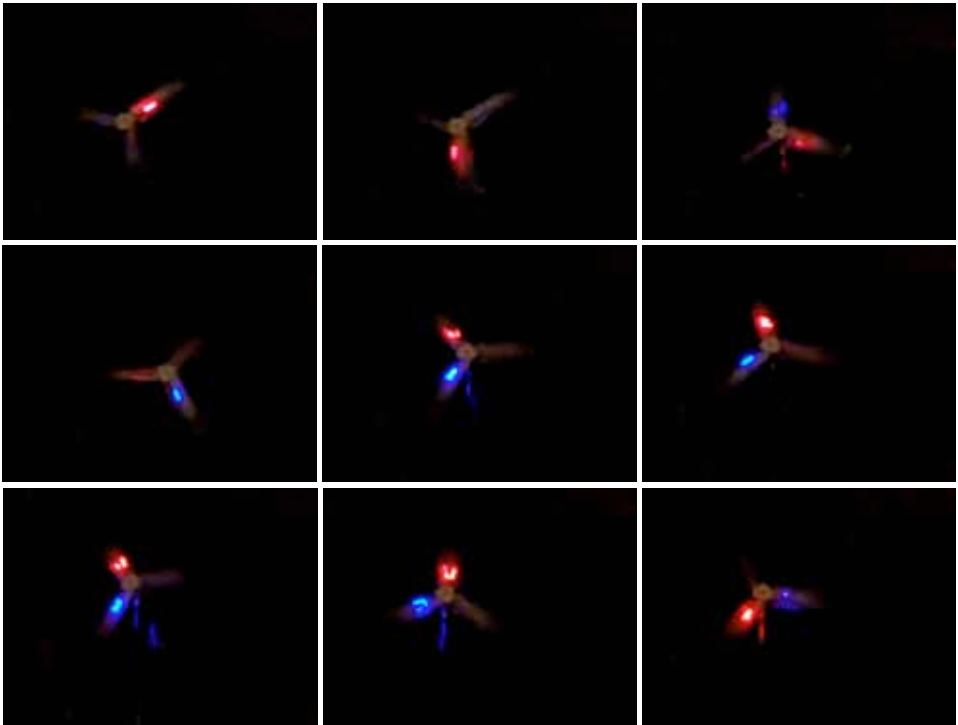
*'art is about producing collective meanings.'*

→ Loraine Leeson

1 Felshin, N., 1994, *But Is It Art: The Spirit of Art as Activism*.  
2 Kester, Grant H., 2004, *Conversation pieces: community and communication in modern art*.



ActiveEnergy, Geezer Power, video still (daytime), 2010



ActiveEnergy, Geezer Power, video still (nighttime), 2010



# EFFECTING CHANGE

AN INTERGENERATIONAL APPROACH  
TO RENEWABLE ENERGIES IN BOW,  
TOWER HAMLETS

*ActiveEnergy* was born in Tower Hamlets, devised and realised by groups who live and work in the borough and who have an interest in improving local living and learning conditions. The theme of renewable energy fires people's imagination by bringing to the surface a host of individual and personal concerns about the present and the future. At the heart of the project was the collaboration with the Geezers combining an attention to pressing environmental issues with personal reflections on the rising cost of energy for residential consumption and on the strain it is placing on retired people and poorer households in inner city areas such as Tower Hamlets.<sup>1</sup>

<sup>1</sup> Fuel poverty is one of the major issues in Tower Hamlets.  
Source: Tower Hamlets Council website, [www.towerhamlets.gov.uk](http://www.towerhamlets.gov.uk)



## APPROACHES

Yet the experiences and ideas of older people are rarely voiced in the context of renewable energy technologies, partly because of the stereotyped view that innovation is the remit of younger generations, partly because older people have little access to public space within which to express their desires and share their knowledge.

Similarly, young people and teenagers are often excluded from playing an active role in the promotion and development of renewable energies at a local level. Although Design and Technology is a compulsory course in secondary education, young people are seldom able to experience the connections between renewable energies and their everyday lives. This was particularly true for pupils at Bow Boys' School, who live in a densely populated urban environment in one of the poorest boroughs of London. Crucially, bringing this project into their neighbourhood was a form of operating small-scale change. *ActiveEnergy* put Bow on the map of renewable energies by demonstrating to the local community, and to London at large, how to set an example and become a model for the rest of the city.

For the Geezers, moving from their first design to the assemblage and testing of a prototype was already operating a small-scale change. They were able to communicate their ideas and enthusiasm to a heterogeneous group of people and confirm that their initial idea could prove interesting for professional engineers. It is important to stress that the group has always been aware that the project was not about the material construction of the prototype or about producing original engineering design, but to enable them to intervene in their local community and draw attention to the problems and possibilities of local sources of renewable energies such as the River Thames. Renewable energy was not only the aim but also the device through which a process of collaboration and exchange was initiated between older and younger people, who did not know each other, as well as between people with different ranges of expertise. The

engagement with Bow Boys' School was an experiment in intergenerational and intercultural mentoring: by helping the boys see the project through to installation the Geezers proved that older people could benefit their communities and bring skills and knowledge to local secondary education.

For DT teacher Richard Alvarez, the project provided an exceptional opportunity for the boys to work with local older people on the innovative technologies they were studying in the classroom.

The experience of being mentored by professional engineers meant the boys could begin to consider hitherto unknown educational and professional trajectories. The boys have not only become aware of a possible career in an industry that they did not know about but have also been able to connect the theory and history of renewable energy to the production of a wind turbine.

*ActiveEnergy* has been successful as a project generated by the collaboration between SPACE, Loraine and the Geezers. It has involved and enrolled support from potential partners both locally and across London, mobilising and effecting change from the small-scale.

For SPACE, the project demonstrates how open and participatory models of facilitating socially engaged art projects produce richly layered encounters that initiate new collaborations and strengthen already established partnerships.

*'it has been more than an additive process: it is a multiplicative project,'*

→ Loraine Leeson



# ARTIST'S METHODOLOGY

WITH LORAIN LEESON

As an artist working to support social change, art is the means and social engagement its methodology. The work is realised through the creation of cultural — sometimes technological — forms that enable the ideas of those whose voice is often least heard to enter public discourse.

*‘Renewable energy is something that  
fires people’s imagination.’*

→ Loraine Leeson

## METHODOLOGY

This is not simply for reasons of equality, but rather because the knowledge necessary to improve social conditions is more firmly embedded in the experience of those living on the margins. While creativity exists in all disciplines, the arts have developed and refined processes for nurturing and developing embryonic ideas that may be usefully applied in other settings. With a central remit of the construction and expression of meaning, and relatively unbound by functionality, the artistic process retains the freedom to support and nurture an amalgamation of disparate ideas without rupturing the structure of the overarching concept. However these are also the limits of participatory art. While it has the power to draw attention to issues and mobilise public opinion, it can produce the means but not the hard outputs required for change. Art can bring the ability to identify, clarify, consolidate and celebrate. Nevertheless collaboration is required with other disciplines and agencies so that shifts in ideas may be enacted. For my practice *ActiveEnergy* represents a significant point of such convergence.



Lorraine Leeson with Toby Borland, the Geezers and the Bow Boys' School, *Geezer Power*, 2010

*'it has been more than an additive process: it is a multiplicative project'*

→ Lorraine Leeson



## CREDITS

### Acknowledgments

#### The Geezers' Club

18 older men (70 — 85 years old). A group of retired east London men who meet weekly at the Age Concern Centre, Appian Court, in Bow, Tower Hamlets.

#### Bow Boys' School of Maths and Computing

14 Year 8 boys (13 — 14 years old). Richard Alvarez, Teacher, Design and Technology. Jim Morris, Assistant Head Teacher. Bow Boys' School of Maths and Computing is a secondary school in Bow, Tower Hamlets.  
[www.bow-school.org.uk](http://www.bow-school.org.uk)

#### Age Concern, Tower Hamlets

Susan Morrison, Appian Court Centre Manager Debbie Walker, Chief Executive, Age Concern, Tower Hamlets. Appian Court is a resource centre and part of the network of LinkAge Plus Centres in Tower Hamlets, run by the charity Age Concern and owned by the Gateway Housing Association. It provides a Lunch Club and weekly activities for older people.  
[www.acth.org.uk](http://www.acth.org.uk)

#### Gateway Housing Association

Karl Clayden, Housing Officer. Bob Watts, Procurement and Partnerships Officer. Gateway Housing Association is the

new name for Bethnal Green and Victoria Park Housing Association (BGVPHA) and Labo Housing Association. These two community-based housing associations merged in 2008. Gateway's vision is for communities to flourish and thrive in Tower Hamlets.  
[www.gatewayhousing.org.uk](http://www.gatewayhousing.org.uk)

#### Loraine Leeson

Artist Loraine Leeson has worked with communities in East London for over thirty years around a variety of issues, particularly regeneration of the urban environment, and is known for her imaginative use of new technologies in her work with young people. She is a Fulbright Scholar and Visiting Research Fellow at the University of East London, from where she runs cSPACE, an organisation dedicated to supporting local communities in developing and voicing vision and aspiration through the arts.  
[www.cspace.org.uk](http://www.cspace.org.uk)

#### MAGICbox, University of East London (UEL)

Toby Borland, engineer/researcher/manager. Toby Borland is a mechanical and manufacturing design engineer with an arts background. He runs the MAGICbox laboratory,

a prototyping lab in SMARTlab on the University of East London docklands campus. Artists, engineers, inventors and students develop their ideas using rapid prototyping and development facilities in the lab. Much of the work in MAGICbox is devoted to experimentation with new processes and making computer aided design (CAD) more accessible and intuitive.

[www.smartlabmagicbox.org.uk](http://www.smartlabmagicbox.org.uk)

#### Stephen Dodds, Professor of Control Engineering at University of East London (UEL)

Stephen Dodds spent 15 years in the Aerospace industry as a spacecraft attitude and orbit control systems engineer. During this period, he conceived and developed the first computer-based attitude control algorithms to be used on a European Spacecraft (the x-ray astronomy satellite, Exosat), using novel control techniques. This led to several international programmes (INTAS and 5th Framework) on the control of spacecraft and electric drives, during which he was elected Academician of the Academy of Nonlinear Sciences of Russia.

[www.uel.ac.uk/cite/staff/stephendodds.html](http://www.uel.ac.uk/cite/staff/stephendodds.html)

#### Mara Ferreri

PhD candidate in Cultural Geography. Geography Department, Queen Mary University of London. Thanks to Mara, whose conversations with the ActiveEnergy participants have contributed to this summary.

#### London Borough of Tower Hamlets

Thanks to Katheryn Tradewell, Environment and Sustainability Officer, for her encouragement.  
[www.towerhamlets.gov.uk](http://www.towerhamlets.gov.uk)

#### SPACE

Fiona Fieber, Head of Learning and Participation. Fiona Fieber delivers artist-led public facing programmes that develop individual creativity and widen participation in the arts.

SPACE developed ActiveEnergy for the Learning and Young People Programme 2009–10.

[www.spacestudios.org.uk](http://www.spacestudios.org.uk)

#### Photographs

Loraine Leeson



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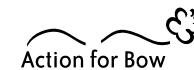
SPACE supports over 600 artists in 17 studio buildings across London as well as providing dynamic environments where individuals and communities can engage in creative processes. SPACE provides 'space to create': supporting the creation of art through the provision of creative environments; 'space to engage': programmes that widen engagement in artistic practices; and 'space to develop': supporting the development of creative individuals and communities.

[www.spacestudios.org.uk](http://www.spacestudios.org.uk)

Funders



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