

# what is arcola energy?



## One

The team brought together to make Arcola Theatre carbon neutral includes venue and project managers, engineers, architects, electricians, and builders. Together they have the proven capabilities to initiate and deliver carbon neutral projects.

During and after the development of Arcola Energy they will engage with other arts venues as well as wider public and private sector organisations to develop technologies, projects, practices and policies to deliver far greater energy saving and waste reduction than are possible at Arcola Theatre alone.

## Two

The companies and developers housed in Arcola's new energy technology incubator. At the cutting edge of technology development and deployment they will work closely with Arcola Theatre management to deliver products and services in rapidly growing markets. Priority areas include hydrogen and fuel cells, low energy lighting systems and energy consumption monitoring.

## Three

The public education programme which will include:

- Interactive displays in the foyer showing real-time energy consumption and generation throughout the building, demonstrating where excessive energy consumption occurs and how it can be reduced.
- Using the technical and design skills of theatre personnel to demonstrate how desirable lighting effects can be achieved using low energy products. "Would you like a low energy light bulb with your ticket?"
- Youth and community classes integrated with our existing theatre based programme to prompt changes in habits and provide specific technical training. Our existing links with 'hard to reach' communities will be particularly useful in tackling fuel poverty.
- Training packages for venue and event managers in reducing the negative environmental impact of their operations; to be developed in tandem with Environmental Auditing initiatives currently underway at several key arts funding bodies.

# arcola team and advisors

## The Arcola Core Team

**Artistic Director:** Mehmet Ergen

**Executive Producer:** Leyla Nazli

**Executive Director:** Ben Todd

**Development Consultant:** Steve Harris

**General Manager:** Michael Harris

**Finance Manger:** Nicole Rosner

**Technical Manager:** Roger Walpole

**Operations Manager:** Gemma Greer

**Youth & Community Coordinator:** Stephan Barette

## Arcola Consultants

**New Technology:** Ben Madden, Director, Element Energy

**Architecture:** Benedicte Foo, Architect & Affiliate Lecturer, University of Cambridge.

**Construction Management:** Martin Hughes, Director, Koya

**Financial management:** John Coverdale, Partner, MGI Midgley Snelling Chartered Accountants.

**Legal:** Huw Thomas, Partner, Bircham Dyson Bell LLP

**Planning:** Mike Green, Partner, Copping Joyce Chartered Surveyors

**Public Affairs:** Paul Medicott, Director, The Westminster Consortium

**Theatre Press Relations:** Dan Pursey at Mobius Industries

**Science and London Press Relations:** Sarah Brener

## Arcola Advisors

**Professor John Young,** Hopkinson Professor of Applied Thermodynamics, Cambridge University

**Iain Tuckett,** Executive Director, Coin Street Community Builders

**Patricia Stoneham,** Business Sector Leader – Environmental Technologies, Knowledge East, University East London

**Nigel Price,** Development Manager, Unity Trust Bank

**Lauren Tobias,** Business, Employment and Training Officer, 2012 Olympic and Paralympic Games Unit, Hackney Council



Arcola Theatre is a regularly funded organisation of Arts Council England

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# the world's first carbon neutral theatre



# about arcola theatre

Arcola Theatre is one of London's favourite and most important theatres. Launched in July 2007, Arcola Energy will make Arcola the world's first carbon neutral theatre. We will be installing biomass heating, solar panels, fuel cells and state-of-the-art energy saving technologies.

We will also create the first centre for new energy technology in the arts – a dedicated work space where engineers can develop initiatives to tackle climate change. Arcola Energy will be a hub for new thinking and cross-fertilisation between art and science, bringing together artistic, entrepreneurial and technological creativity.

As a theatre we have a longstanding tradition of innovation, inspiration and deep integration with the local community. Working to the same principles, Arcola Energy will integrate arts and science professionals with the community to pioneer practices that will fundamentally change the way arts organisations work.

## History – Theatre & Community

Arcola Theatre was founded in September 2000 when Mehmet Ergen (the present artistic director) and Leyla Nazli (the present Executive Producer) converted a textile factory on the borders of Stoke Newington and Dalston into one of London's largest and most adaptable fringe venues.

Arcola quickly became one of the UK's most renowned fringe theatres, winning the Peter Brook Empty Space Award two years in a row and two Time Out Live Awards – for Inventive Programming on a Shoestring in 2003 and Favourite Fringe Venue in 2005/6. Many of Arcola's productions have been selected as Critics' Choice in Time Out and the national press.

Arcola has staged work by some of the best living actors, writers and directors including productions by William Gaskill, Dominic Dromgoole, Max Stafford-Clark, Frank McGuinness, Jack Shepherd, David Farr, Bonnie Greer, Adam Rapp, Sam Shepard, Eric Schlosser, Helena Kaut-Howson and Kathryn Hunter.

Arcola's Youth and Community Programme is an integral part of the organisation, giving opportunities to work with some of the foremost names in British and International theatre. Activities include Arcola Youth Theatre, Arcola Ala-Turka, Arcola 60+ Drama, Arcola Writers Group and Arcola Technical School.

In 2003 Arcola was said to 'live on love and hope rather than money' (The Independent). Recognised in 2006 as an Off-West End (rather than Fringe) venue, Arcola now enjoys regular funding from, among others, Arts Council England. Nonetheless the ethos of an open door and endless possibilities keeps belts tight and life vibrant.

## Future – Theatre, Sustainability & Community

Now established in our professional and community theatre activities, Arcola is ready to innovate once again – this time in the challenge to make theatre sustainable and to engage in tackling climate change through the many and varied talents theatre nourishes.

Ben Todd, the current Executive Director, has an extensive background in sustainable energy. He has worked with Mehmet and Leyla to create Arcola Energy as a third strand in the theatre's activities.

Key to Arcola Theatre's success thus far is the feeling of openness and accessibility created by running the organisation from the foyer, shared by all users of the building and the starting point for all activities. This approach is central to our development plans to create a space where multi-disciplinary collaboration flourishes.

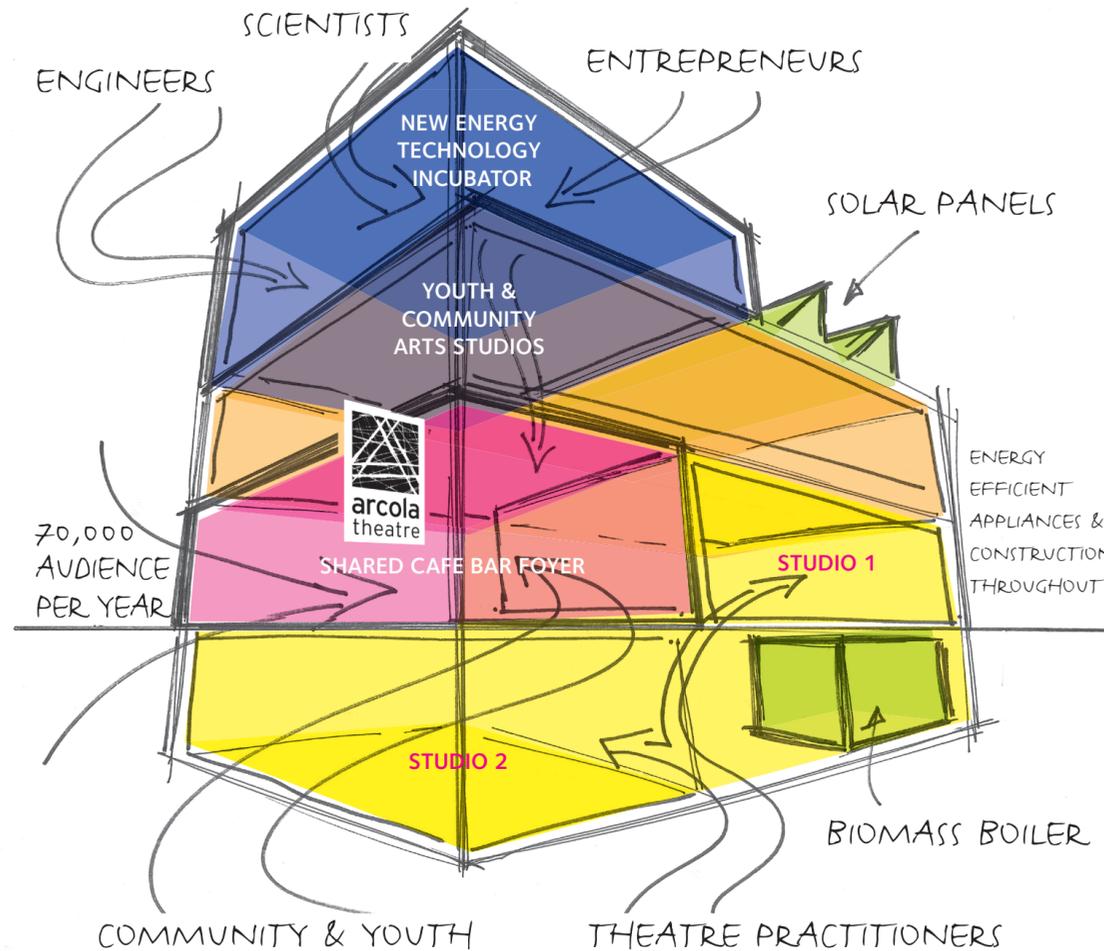
The next pages show how the many elements of an enlarged Arcola Theatre inter-connect and describe what Arcola Energy will do and how we shall do it.

We hope that you will join us in this great venture.

## The Arcola Team.

# the future arcola theatre

new technology  
learning  
excitement  
collaboration  
regeneration



# the path to carbon neutrality

Arcola Theatre commissioned Element Energy to conduct a study into the feasibility of the theatre eliminating its net emissions of carbon dioxide. The study concludes that carbon-neutrality is feasible and will cost £250k – £350k in capital expenditure to avoid the 54 tonnes of CO<sub>2</sub> emissions p.a. which would otherwise be emitted. These budget costs reflect today's prices, which are expected to fall over time.

The following approach has been decided upon as the most feasible path to carbon-neutrality.

## Stage 0

Baseline refurbishment including double glazing all windows, draught proofing the building, and fitting it with a controlled ventilation system. These measures will reduce CO<sub>2</sub> emissions from a total of 72 tonnes to 54 tonnes p.a.

## Stage 1

Reduce demand for heat and electricity by 43% and 32% respectively, through sensible use of energy. This will save 30 tonnes of CO<sub>2</sub> p.a. and cost £50k. Measures to be adopted are: fitting motion sensors to lights; CO<sub>2</sub>-detector-controlled ventilation with heat recovery; maximal use of daytime lighting; use of energy efficient stage lights.

## Stage 2

Renewable heating – a biomass boiler, which runs on wood pellets, and 3m<sup>2</sup> of solar thermal panels will supply nearly all of the building's remaining space heating and hot water\*. These will cost £18 – £26k and £2.5k – £3k respectively, and save a combined 8 tonnes of CO<sub>2</sub> p.a.

## Stage 3

Renewable electricity – a large array of solar cells will cover the building's roof, supplying all of the theatre's electricity needs and exporting excess to the national grid. This will be the most expensive part of the project, costing up to £210k for basic modules, and saving the remaining 16 tonnes of CO<sub>2</sub> p.a. It may be prudent to wait some time before installing this technology, as costs are expected to come down significantly in the next 2–5 years.

One exciting possibility is to turn the building's roof into a rehearsal space, shaded by a 'canopy' of semi-transparent PV modules, maximising exposure to the technology. Assuming 120m<sup>2</sup> of semi-transparent PV, this would cost an additional £40k for the modules, plus the price of the special frame (ca. £25k) and structure.

\*A gas stove is still required for cooking, and a gas boiler will most likely be kept as back-up. Their CO<sub>2</sub> emissions will be offset by extra electricity from PV arrays.