



## Schools & Homes Energy Education Project Solar Active

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*Tell Me, I'll Forget, Show Me, I'll Remember, Let Me Do It, I'll Understand. Chinese Proverb*

**April 2018 - March 2019 Annual Report & Accounts**  
**Schools & Homes Energy Education Project/Solar-Active and Recovery Insulation**

### INTRODUCTION

The Schools & Homes Energy Education Project/Solar-Active (a registered social enterprise, charity and a not-for-profit limited company by guarantee) primary aim is to raise the awareness of how energy efficiency and renewable technologies work; in order for one to make informed decisions of their energy use at home and work.

In July 2013, production of Inno-Therm® transferred to [Le Relais](#) offering in UK and for export, Metisse® under Inno-Therm® brand. Recovery Insulation became the sole UK agent for Le Relais to sell and distribute Inno-therm®/[Metisse®](#). In February 2016 Recovery Insulation became a trading arm of the charity.

- Solar-Active has have been developing since 1993, an approach to learning & teaching and Solar STEM resources resources (i.e. solar model car/boat, lorry, hydrofoil, clock and mini-pump, home & school energy surveys, dynamic interactive website) and working demonstrations [i.e. solar water heating unit, off-grid PV and wind turbine assembly) that focuses on stimulating student's interest and involves real life applications of scientific concepts.



Figure 2:solar car



Figure 1: Walled Garden solar boat event

- The hands-on STEM resources were tailored for teacher professional development to create a solid grounding in the core principles of climate change science in young people and people of all ages to inspire positive action in their school communities.
- The teaching approach and STEM resources developed made learning and teaching enjoyable, acquiring knowledge and problem solving skills in renewable energy technologies while valuing failure. Our view is that failure is necessary as it is life's great teacher - without failure, great achievements are rarely made.
- The problem? Schools will often celebrate primarily the successes rather than also highlighting success that are filled with trials and setbacks. ( re: [Telegraph article: Learning Through Trial and Error](#) – published 20<sup>th</sup> April, 2017.
- During 2018/19, solar car design challenges have again been cancelled due to government cuts to Local Authorities in education budgets and focus on exams.

## WHAT HAS BEEN ACHIEVED

In house lamination of solar-active cells has now been completed; too bespoke our flexible cells for use in our STEM solar education resources and new commercial products [i.e. mobile phone recharge unit]. The cells have been successfully tested. The double cell will 1<sup>st</sup> be used on 1st June 2019 in The Netherlands at a solar boat challenge.

- Siebern Ididzenga of Ididzenga Development [www.youngsolarchallenge.nl](http://www.youngsolarchallenge.nl). purchased 100 solar boat sets using our new solar cell for the Netherlands challenge.



Figure 3: boat kit

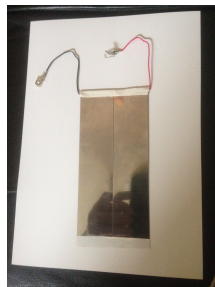


Figure 4: double cell

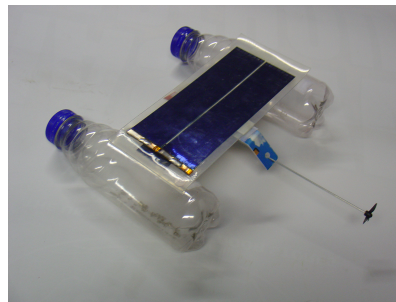


Figure 5: solar boat

2018/19 sessions at Sheffield Central Libraries - <http://focusing.solar-active.com>

Focusing and Listening sessions are held weekly at the Sheffield Central Library. The group is open to anyone interested in Focusing and *it is not necessary to attend each session*. There is no fee. In addition, an introduction session to listening and focusing was held September 2018 at the ACADEMY OF S.P.A.C.E

Listening and Focusing skills can give people the means to delve in and discover for themselves what action they could take to access work-life balance, decision making, problem solving, creativity, self-assessment, teacher support, assessment of students, parent meetings, inspections and conflict resolution.

## WEBSITE

Peter Lawrence volunteers to update the solar-active website and created a shop [www.solar-active.com/store](http://www.solar-active.com/store). Products can be ordered online via PayPal.

## SOLAR MOBILE PHONE RECHARGE UNIT

In 2018 we were given 12 sacks of what we thought contained only denim cut offs from the making of denim shorts. I found 100 pairs of old jeans, 40 shorts and 6 sacks of cut offs. We now offer a free pair of old (many are 501) denim jeans or on request when insulation is purchased and they are also [for sale](#).

We are seeking funding to complete the next stages in the development of a wearable solar mobile phone recharge unit using our flexible solar cell integrated into a garment made from the recycled offcuts of denim jeans. The electronic component has successfully been tried and tested as a working prototype.

This phase is to involve a students from secondary schools, university/college textile course; with the production of the garment to involve an x-offenders enterpriser project within the UK prison service.



## DEMONSTRATIONS resources available for school environment events:

- Solar PV off grid unit music and recharge unit
- [Pelton wheel](#)
- [Solar water heating unit](#) – working and portable
- Vertical axis wind generator
- [bicycle wheel generator](#)

- Wind turbine assembly (4kw)



### RESORUCES available on-line

- Electricity Generating Technologies: Feed-In Tariffs “?” Time debate in association with SCACC
- Future of Nuclear Power Post Fukushima with Sheffield CND
- Keeping the lights on in South Yorkshire Debate: Is Our Future Nuclear Free or Nuclear? Audio available.
- Solar Car and Boat guides and technical documents

### EXHIBITIONS, CONFERENCES, PRESENTATIONS

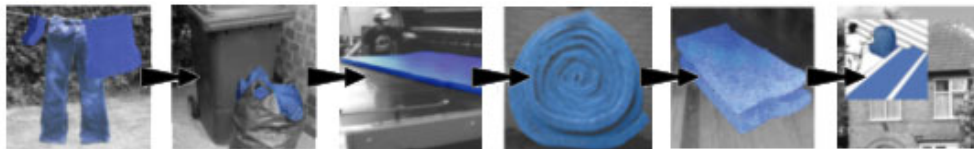
- Presentations: 2019
  - ASE National Conference, January 2019
  - CIBSE Technical Symposium 2018: Stretching the envelope: Techniques, applications and technologies for healthy and productive environments - Street lights effect on buildings/landscape design, trees, wildlife, circadian rhythms and health/well-being
  - ECO-Expo @ High Storrs, March 2019: Trees And Health & Wellbeing, Food & Climate and Carbon Footprint.
- Publications
  - Let there be darkness: LED security lights effects on trees and green city landscape: Human and wildlife circadian rhythms, mental well-being, road safety and the view of our night sky. International SEEDS Conference 2017: Sustainable Ecological Engineering Design for Society Healthy Environments, Buildings and Spaces: Current position and future models Leeds Beckett University, UK –
  - Sheffield Telegraph: “Learning Through Trial and Error” –20<sup>th</sup> April, 2017.

### ACCOUNTS YEAR ENDED 31<sup>ST</sup> MARCH 2018

<b>Solar- Active</b>
INCOME: £2,193.00
EXPENDITURE: £1,643.00
ASSESTS - £4,000.00



Recovery Insulation Ltd. is a social enterprise/for profit share capital company established in 2002 by [Schools & Homes Energy Education Project/Solar-Active](#) with investment from [The Keyfund](#) and support from the Sheffield Community Enterprise Development Unit [SCEDU]. The main aim is to have manufactured low carbon non-itch recycled cotton high performance thermal and acoustic insulation. This has been accomplished with Le Relais, another social enterprise.



As a social enterprise, we stand apart from other insulation companies in having donated a proportion of our sales income to the education charity Schools & Homes Energy Education Project/Solar-Active to conduct renewable and energy efficiency activities in educational establishments, youth groups and general public.

In 2019 we were in a position to donate £ to Solar-Active, used for The Netherlands solar boat challenges and in the development of the Solar-Active PV cells.

In the manufacture of our thermal and acoustic insulation Recovery Insulation with Le Relais LLC fully addresses the economic and supply chain implications in the implementation of the principles of the Circular Economy

### Availability and Applications

- Approved for use in lofts, floors, walls and sarking.
- Thermal available in rolls and batts - 50 mm (£3.38/m<sup>2</sup>), 80mm, 100 mm (£6.70/m<sup>2</sup>), 120 mm (£7.74&£8.88/m<sup>2</sup>) and batts only 145 mm (£9.10&£10.46/m<sup>2</sup>), and 200 mm (£12.08/m<sup>2</sup>), density of rolls at 20 kg/m<sup>3</sup> and batts at 20/25 kg/m<sup>3</sup>
- Acoustic available in 45mm batts ( £6.32/m<sup>2</sup>) and 20mm rolls (£3.55/m<sup>2</sup>). Thermal/acoustic available in 50mm batts or rolls (£4.41/m<sup>2</sup>).
- Using Flock depends on the R value targeted.

### WHAT HAS BEEN ACHIEVED

- In January 2019 invited by Herringthorpe Junior School to participate in their Nemesis project to design recycled denim products (e.g. braided denim rugs, bag, proggy mats or denim place mats) from vintage denim jeans and leg off-cuts
- NEMESIS represents an new approach towards attainment of social innovation skills by combining innovative learning models, technologies, and participatory

relations and processes. The objective is to foster entrepreneurial mind sets and creative thinking among primary and secondary students, allowing them to become the social innovators of tomorrow.

- **Acoustic insulation:**
  - Specified by NBC International Broadcasting Centre for venues for Summer Games in Tokyo 2020. In the past Installed at London Games 2012, reused at Sochi Winter Games 2014, Rio 2016, Pyeongchang Winter 2018.

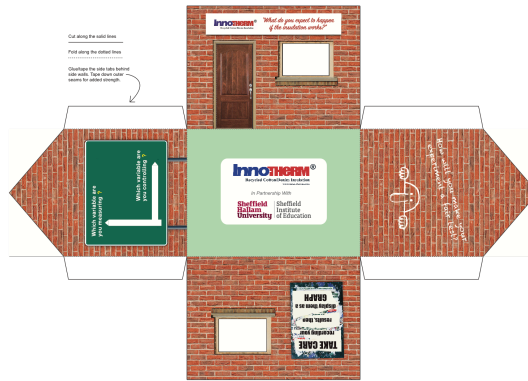


- Specified for **professional home music studios**, speakers, subwoofers, camper van conversion and other acoustic applications.
- [Panel UK](#) in manufacturing screen systems for offices.
- [Amina Technologies](#) - the world's leading designer and manufacturer of **Invisible Speakers**
- **Packaging:** Food packaging enquires: Amazon and four others; Puffin packaging using 20mm acoustic rolls.
- **50mm installed in the Sheffield Affordable Eco Reach Homes project made from recycled shipping containers**



## HOT HOUSE EDUCATION RESOURCE

Our technical, manufacturing and buildings teams does not just produce, market and sell insulation. Working with Sheffield Hallam University school of Science Education, developed the HOT HOUSE education resource. The HOT HOUSE encompasses National Curriculum learning objectives - ideas and concepts about the importance of energy saving and low carbon of eco insulation products.



Initial trials have been successfully conducted by teachers in schools in Sheffield and Yorkshire area and training teachers at Sheffield Hallam University.

The resource will be promoted via a video funded by the Social Enterprise Exchange program which supports social enterprise in Sheffield City Region via a community-based consortium in collaboration with Sheffield City Region Growth Hub and funded by European Regional Development Fund 2014-2020.

### ACCOUNTS YEAR ENDED 31<sup>ST</sup> MARCH 2018

<b>Recovery Insulation</b>
<b>Turnover: £ 68,049.00</b>
<b>Cost of sales: £48,041.00</b>
<b>Gross profit: £20,008.00</b>

### SCAM - 6<sup>th</sup> April 2018

As a result of a phone scam £15,980 taken from our Nat-West charity account and Co-operative Bank p.l.c. personal and social enterprise bank accounts. Both banks accepted that I did not authorise the fraudulent transactions. After submission of a complaints to FOS with support from Richard Emery and MP Louise Haigh all funds were refunded.



Finalist (5/100) Chivas Venture for social entrepreneurs from around the world who are using business to create a better future. Every year, Chivas Venture gives away \$1 million in no-strings funding to social entrepreneurs, to blend profit with purpose to have a positive impact on the world.

### EXHIBITIONS, CONFERENCES & MEMBERSHIPS

1. Exhibit set-up in the Waste Zone of Future Build 5th-7th March 2019.
2. **ASBP** member and Healthy Buildings conference - **AECB** member
3. **Zero Carbon Yorkshire** member and director

**ACKNOWLEDGE** support from Peter Lawrence, Andy Bullough, Nicolas Jalgo, Nick Parsons, Dr Amir Kahn, John Grant, Martin Mayer and Dr Hasim Altan. Special thanks to John Douglas for providing V.A.T. and accounting for Solar-Active and Recovery Insulation accountant: [Brendan Ashmore of Tingle Ashmore Accountants](#)



**Schools & Homes Energy Education Project Ltd.**

## **Solar Active Recovery Insulation Ltd**

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### **List of raffle items:**

1. Glass chess/checkers board [51.5cm x 51.5cm]
2. Slim Maximum DVD player – MX11-27
3. Used BT Answer phone and Phone
4. Black Ash round [120cm across] table
5. NEW Bicycle car rack with lock for 2 cycles for back of car
6. Halfords Roof Bars for cars without gutters
7. Wood curtain rails (4) [146cm long] with wood curtain rings
8. NEW Radiator 50cm X 40cm (2)
9. High Visibility Vest
10. Doors: internal 68X196cm (1), internal 77X198cm (2), external 84X198cm (1), external 76x198cm (1) with cat flap, Hardwood stable door ( 76 X 198cm)
11. Cycle helmet (2) and bike pump (2)
12. Small micro scope
13. Magicians book and bag of tricks
14. Insulation for a water cylinder
15. NEW Spray Lance
16. NEW A4 files
17. Phillshave Aquagenic [used]
18. NEW black stove 45 Degree Elbow Vitreous Enamel 125mm
19. 8 ball® wide mouth fruit design jam jars and some with lids 945ml
20. Wooden paper towel holder
21. Plaster trowel
22. EE router (2)
23. Picture frame hardboards
24. NEW Lamp shade x 2
25. NEW HP Black ink #10 – 69ml
26. NEW adjustable basin wrench
27. NEW Small bathroom sink