

NORWICH CITY COUNCIL



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City Council

PROJECT AIM

Our aim is to securely and sustainably dispose of redundant ICT equipment in a way that both minimises environmental impacts and creates social value for the community.

This is being achieved by refurbishing redundant ICT equipment and selling it on at preferential rates to help fill the 'digital divide' on a national basis. We also use surplus money gained through the refurbishment programme to add further social value by engaging with the 'Raspberry Pi Hack Pack' initiative in schools at a local Norwich level.

In doing this, the project will act as the national launch customer for the Raspberry Pi Hack Pack initiative. This will raise the profile of the iESE/ICTR circular economy programme.

The aim of this is to keep resources in the economy for longer by moving away from a linear life cycle model where products are discarded to a cyclical model where products can be refurbished and reused.

PROJECT ACHIEVEMENTS

Making use of redundant computer equipment in ways which have realised wide ranging business, social, environmental and economic benefits. These include:

- secure and sustainable disposal of 20 tonnes of redundant ICT equipment
- removal of the risk of data loss from the redundant equipment
- zero redundant ICT equipment to landfill
- reducing environmental impact by refurbishing (13.1 tonnes) and recycling (6.9 tonnes) of the redundant ICT equipment. This has saved more than 3.5 million litres of water, 5.9 tonnes of carbon, over 52 tonnes of harmful chemicals and more than 572 tonnes of fossil fuels.
- (Source: ICTR Estimates, Environmental impacts in the production of personal computers)
- providing work for ICTR Ltd – a social enterprise which employs ICT trainees as part of its accredited college courses, along with other people from schemes to support vulnerable people, to refurbish the redundant equipment
- providing an education opportunity that raises the profile of environmental issues and supports the new ICT

- element of the national curriculum addressing the 'digital divide' by selling on the refurbished equipment at preferential rates to target groups.
- receiving the Silver Award at the 2014 iESE Awards in the 'Transformation in Waste and Environment' category.

WHAT DID THE PROJECT INVOLVE?

Norwich City Council carried out an ICT desktop refresh programme which saw the replacement of 850 desktop PCs, monitors, keyboards, mice and peripheral wiring. In total there has been more than 20 tonnes of electronic waste (e-waste) removed to date.

The council needed to dispose of this equipment in a way that ensured sensitive data was securely removed, the method was cost effective, minimised environmental impacts and complied with European legislation.

The city council conducted market research to identify the options available. Several options were identified, although all but one concentrated solely on breaking up the equipment and recycling the components rather than refurbishing and reusing them.

As refurbishing and re-use sit higher on the waste management hierarchy and social value benefits would also be realised, the city council decided to pursue this option.

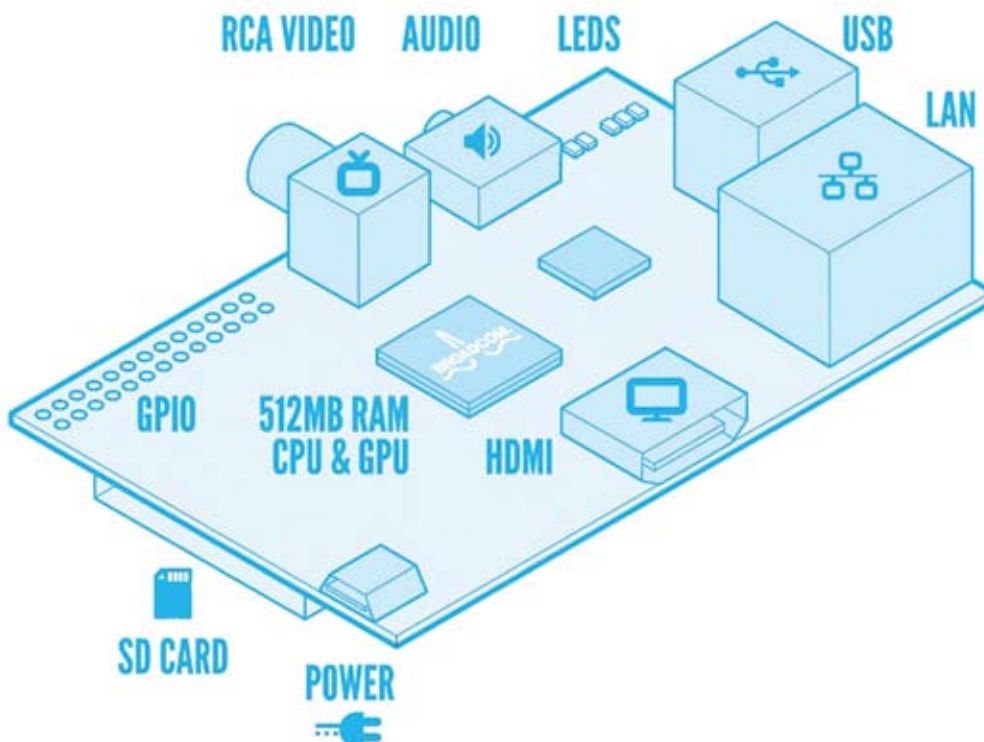
Norwich City Council worked in partnership with ICTR Ltd on the project as part of the iESE/ICTR circular economy programme. ICTR Ltd collected the redundant stock, securely removed the data, refurbished the majority of the equipment and then sold it on at preferential rates to support filling the digital divide. Surplus parts were then used as peripherals for the Raspberry Pi Hack Pack kits.

'Raspberry Pi' is a basic ICT equipment kit comprising of a very basic computer motherboard and peripherals. It is intended as an educational tool for students learning about how a computer works.

Historically, Raspberry Pi kits come as brand new items from China – the iESE/ICTR initiative relies on the central processing unit being brand new but the peripherals in the kit being equipment that has been refurbished through the ICTR core business.

The sale of our refurbished equipment, all be it at preferential rates, created £4,800 surplus which has been invested in 40 Raspberry Pi Hack Packs for three local secondary schools to support the raised profile of ICT in the national curriculum.

RASPBERRY PI MODEL B





WHY DID WE DO IT?

It was able to satisfy the council's needs to balance secure data removal with cost-effectiveness and minimal environmental impact. In addition, the project was able to provide social value by supporting local education, provide employment opportunities for ICT students working with a social enterprise (ICTR Ltd) as part of their college courses, and contribute to filling the digital divide*.

The digital divide is where some of the most deprived sectors of society do not have access to a computer and consequently are excluded from the opportunities which computers may bring (e.g. cheaper online deals) and are then further disadvantaged.

WHAT DID IT COST AND WHERE DID THE MONEY COME FROM?

The project was cost neutral.

WHAT HAS THE PROJECT ACHIEVED IN TERMS OF SUSTAINABLE DEVELOPMENT, ECONOMY, ENVIRONMENT AND/OR EQUITY?

It's estimated that 77 per cent of e-waste from the UK is illegally transported to digital graveyards in west Africa. This e-waste, which includes redundant computer stock, contains a high percentage of toxic substances such as lead, mercury, cadmium, and arsenic. By refurbishing redundant stock and extending its life we were able to reduce its environmental impact.

Source: BBC Panorama, Track my Trash, May 2011

The project has resulted in 13.1 tonnes of equipment being refurbished and 6.9 tonnes re-cycled. No equipment has gone to landfill. When set against the production of an equivalent amount of new equipment this project has preserved the following natural resources:

- 3,579,000 litres of water
- 5,960 tonnes of carbon
- 52 tonnes of harmful chemicals
- 572 tonnes of fossil fuels

The Raspberry Pi Hack Packs project will be assisting children in three Norwich schools with their ICT studies in support of the raised profile of ICT in the national curriculum. It will also raise awareness of sustainability issues for school children.

The majority of the refurbished equipment (approximately 550 complete computer work stations) has been sold on at preferential rates to help fill the digital divide. This will give extra people access to the internet which will help stimulate the economy and increase equity of opportunity for people to access the internet.

LONGER TERM BENEFITS

A raised profile of the sustainability agenda within Norwich City Council and the local schools benefiting from the Raspberry Pi Hack Packs, along with a published case study, will encourage organisations to adopt a more innovative sustainable approach to the disposal of redundant equipment.

The success of this project proves that this market model works and should encourage others to become involved in similar projects and to perpetuate the circular economy model.

PROJECT INNOVATION

Norwich City Council is one of the first local authority's to become involved in the iESE/ICTR circular economy programme and as such is a pioneer within this area. The programme aims to bridge the gap between redundant and recycled by refurbishing and reusing unwanted computer waste.

The aim is to keep resources in the economy for longer by moving away from a linear model where products are discarded to a cyclical model where products can be refurbished and reused.

Working with ICTR we are proud to be the launch customers for this project and their first case-study. The industry standard to ensure secure data removal is to shred the components and then recycle them. We very much hope the success of this project shows there is an alternative and more sustainable choice.

Norwich City Council is the launch customer for the Raspberry Pi Hack Pack initiative.

BENEFITS FOR OTHER ORGANISATIONS/ COMMUNITIES

This project can be used as a best-practice template and rolled out across local authorities on a national level. Each local authority produces e-waste which needs to be disposed of.

This model is not limited to the public sector and could be taken up by private sector businesses and at a domestic level. Where there is waste there may be opportunities to refurbish. WRAP estimates that by pursuing opportunities for re-use the UK could reduce its reliance on raw materials, including rare earths, by as much as 20 per cent by 2020.

