

## **TOTAL COMMUNITY RETROFIT**

The Institute for Sustainability

### **IMAGINE THIS...**

It's 2030 and local people are planning, designing, delivering, owning and managing a range of local projects, which are stimulated by the transition to a low carbon economy.

There has been a tremendous growth in social enterprise, small businesses and jobs for local people as a result of delivering a more sustainable environment; from local people being trained to refurbish the homes of their friends and neighbours or encouraged to set up a new local logistics company delivering goods using bicycles and electric vehicles. This activity has been funded by a mix of traditional government and private investment and innovative local micro financing initiatives and social investment bonds.

Underused and derelict buildings and land brought back into use have, amongst other things, led to an explosion of local food growing initiatives. New not-for-profit organisations have found a home in underused council buildings and a new business that 'upcycles' waste has found premises in a vacant private building.

People are behaving more sustainably - they own or have a share in local energy generation assets and can see how saving energy benefits them financially as well as the local environment. The local council and housing association have teamed up to create a 'community benefits' funding pot, using a proportion of their Feed In Tariff and Renewable Heat Incentive revenues, which local people can bid into to support their favourite project.

A local group made up of students, digital champions and industry computer programmers has been making their own sensors to measure everything from noise and park usage to when their vegetables need watering. The online Community Dashboard is a one-stop source for travel advice, local community activities and news.

...and there has been a massive reduction in CO2 emissions and fuel poverty.

## **TOTAL COMMUNITY RETROFIT**

'The neighbourhood is a geography and a scale that resonates with people. Neighbourhoods have always been a powerful and important part of how we view city-building, and how we view ourselves as citizens.' (Hanscom, 2011)

The Institute for Sustainability is developing and delivering a demonstrator project in the London Borough of Tower Hamlets, in the Bromley-by-Bow and Poplar areas. This project will



**Figure 4-1 The Institute’s Total Community Retrofit (TCR) aspiration starts with the premise that to deliver sustainable cities we need large-scale and systemic innovation. Source: Institute for Sustainability.**

involve local partners and local people in transforming the area into a thriving community ready for the world of 2050. Local partners are working together to start to deliver that vision in 2013.

By approaching the challenge at neighbourhood scale – approximately 50,000 people in this case - and addressing all the elements of a sustainable community together, it is possible to create a more optimal solution that improves community cohesion, health, well-being, employment levels and fuel poverty, as well as quality of the environment. The traditional individual programme approach often misses opportunities for synergies and efficiencies. However, activities in Bromley-by-Bow and Poplar are being designed and delivered in a systemic and joined up way. They include:

- \* **Building retrofit** – residential, commercial, industrial and municipal properties
- \* **Decentralised, smart, clean energy** – solar photovoltaic energy generation; combined heat and power plants
- \* **Connected Community** – linking people, technology and services; empowering local people to use data for informed decision-making
- \* **Closed Loop Community** – upcycling; waste to energy plants; reclaiming and reusing resources locally
- \* **Green initiatives** – local food growing on unused space; sustainable behaviour programmes
- \* **Green jobs and skills** – jobs, skills and enterprise training for local people and businesses
- \* **Sustainable transport** – electric vehicle car clubs; local walking and cycling schemes; sustainable last mile logistics.

Two schemes currently in progress in Bromley-by-Bow and Poplar are summarised below.

## **CASE STUDY – CLOSED LOOP COMMUNITY DEMONSTRATOR**

To increase self-sufficiency and resilience, cities of the future will need to transform their approach from ‘disposing of waste’ to ‘maintaining and recovering resources’. Cities that manage resources well will accrue economic, environmental and social advantages, especially when the approach is integrated with other city systems. The Closed Loop Community Demonstrator will focus on resource retention and recovery creating local economic opportunities and value, building self-sufficiency and resilience, and reducing greenhouse gas emissions.

### **What it is?**

Currently the London Borough of Tower Hamlets has a contract with Veolia for the collection and disposal of refuse and recycling and cleaning. The local Registered Social Landlords (RSLs) also have a responsibility to remove bulky goods or waste from their property. All the waste currently collected goes outside the borough for treatment or is taken to landfill. This project presents the opportunity to deliver better environmental services to the local area while creating employment and business opportunities for local people. Over time, the project will lead to savings which could be reinvested in the community to help deliver on other, new initiatives, which will help ensure on-going, local community buy-in for the project.

The benefits include:

- \* Reduction in greenhouse gas emissions and carbon footprint; optimised energy capture; minimised embodied and imported energy
- \* Increased local jobs, skills and educational opportunities; revitalised local markets and shops; a self-sufficient, empowered and sustainable community; improved resource efficiency and avoidance of resource scarcity
- \* Targeted increase in recycling rates from 26% to 80%.

The initial phase of the project will focus primarily on bulky goods, waste electric and electronic equipment (WEEE) and food collection pilots. More generally, the project will result in increased local awareness of the value of waste, particularly recyclable waste, which will help achieve an overall increase in local recycling rates.

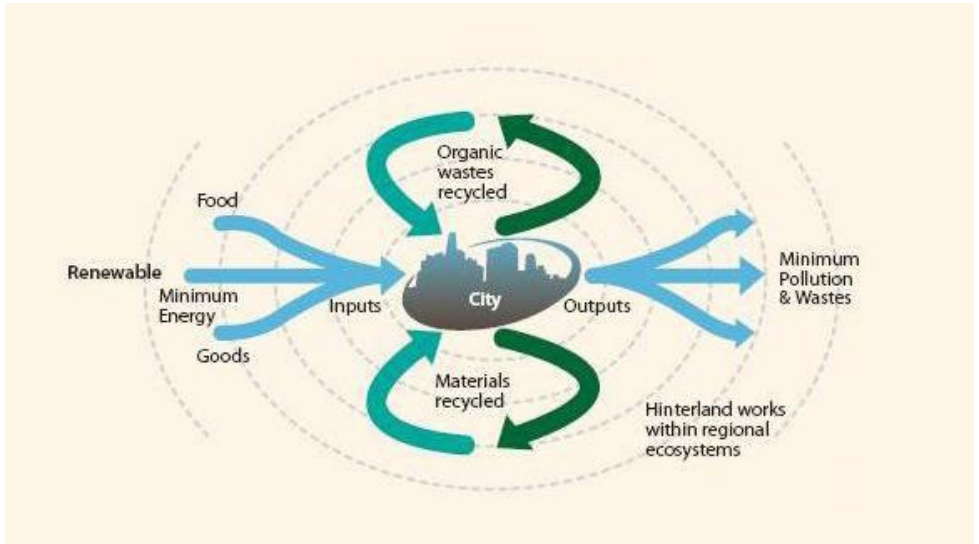
**Bulky waste** - Furniture and other large items tends to be fly-tipped in local estates where they become damaged and unusable. They are subsequently collected and disposed of as waste. A simple, local scheme that involves collecting, storing, repairing and re-distributing within the community will provide huge benefits.

**Waste electric and electronic equipment (WEEE)** - This relates mainly to computers, laptops, washing machines, fridges and other white goods. WEEE is not currently collected and is a significant source of pollution in the area. There is a good market for metals as long as components are separated properly. Setting up enterprise locally to reclaim valuable components or identify WEEE with resale value will create skills, training and job opportunities for local people.

**Pilot estate based collection models for food waste and other materials** – Innovative collection models particularly for tower blocks could significantly increase recycling rates. Identifying new ways to deal with food waste particularly could have a number of positive impacts locally. One initiative considering an anaerobic digestion plant would mean food waste would be collected and then used to produce compost (possibly for local food production schemes) and energy for local homes. The plant would attract investment and create new jobs in the area.

Current project development:

- \* Initial scoping work to assess how WEEE and bulky goods are currently collected



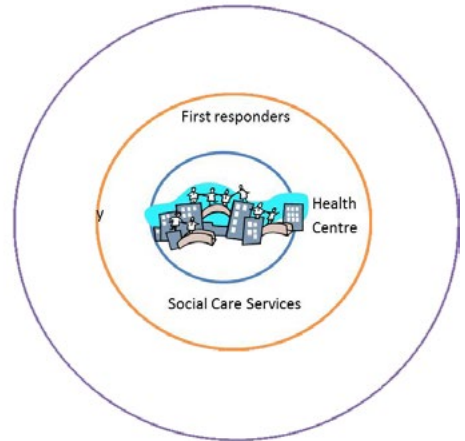
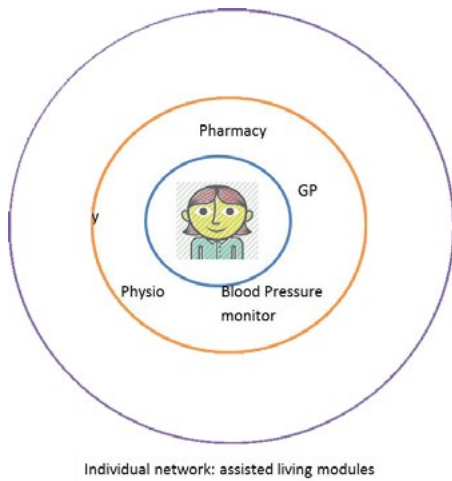
**Figure 4-2 The Institute’s Total Community Retrofit (TCR) aspiration starts with the premise that to deliver sustainable cities we need large-scale and systemic innovation. Source: Institute for Sustainability.**

- \* Determine the scope and volume of waste needed to make the proposition viable
- \* Plan communications to attract and engage residents to use the collection services
- \* Identify which businesses to engage with the project to provide materials and generate revenue as the project starts
- \* Identify which electronic companies could be interested in partnering on the project
- \* Initial scoping work around the creation of a local facility including development of a business plan, and identifying potential sites and funding streams
- \* Exploratory work underway to identify how to engage and attract innovative SMEs to the area.

## **CASE STUDY – CONNECTED COMMUNITIES**

Changes in government, business models, technology and demographics present new opportunities and challenges to deliver sustainable cities and communities. Residents are presented with a bewildering array of choices for accessing essential services, including health care, home energy, and council services. These services are often not joined up, increasingly complex, and internet-based. While some residents have the means to take advantage of this changing landscape, many others may not. In many cases residents may be in vulnerable situations – perhaps due to health, income or disability challenges, for example.

At the same time, exciting opportunities are emerging to use technology in a way that can empower residents. By taking advantage of planned investments, in activities such as building retrofitting and new smart energy grids, we have the opportunity to develop innovative new approaches to providing community services while, at the same time, providing better personal and community information. These innovations can help individuals save money, live more sustainably, and enjoy a healthier and more resilient lifestyle.



**Figure 4-3 Putting people at the centre of local services. Source: Institute for Sustainability.**

### What it is?

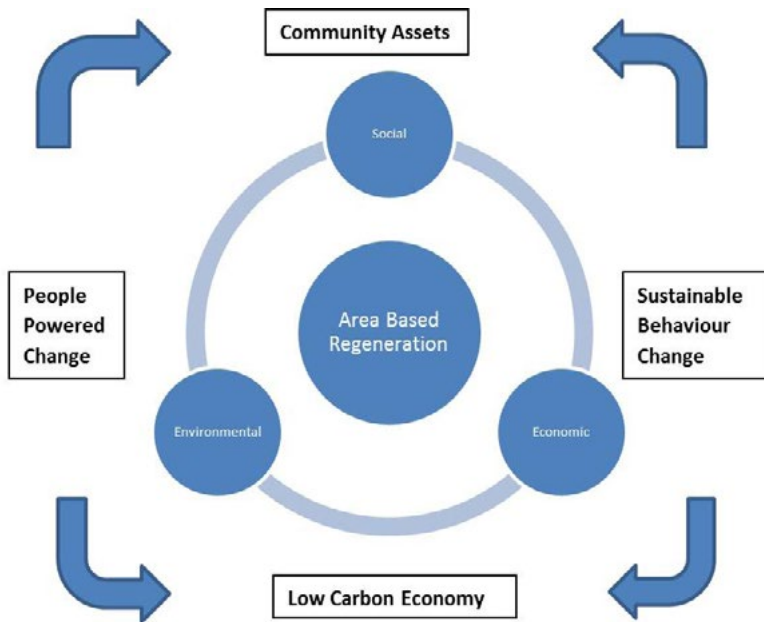
The Connected Communities project will involve developing a flexible platform to link people, services and technology, providing a holistic approach to community resilience, health and well-being. The early phases will be built on the twin platforms of buildings resource efficiency (home energy management systems and smart meters) and health services (telemedicine and assisted living). Work has started on both elements locally. The Connected Communities demonstrator will include the following key components:

- \* **Technology** – a personalised hub that brings together various websites, data devices, sensors (e.g. HEMS, medical devices, communication and scheduling tools) and delivers information to users through an appropriate user-friendly interface
- \* **Services** – a ‘community concierge’ support organisation that focuses on integrating and matching service provision to user needs, providing efficient delivery of community services (health care, security, energy management, financial planning, outreach, etc.)
- \* **People** – networks for promoting knowledge sharing, community collaboration and real-world interaction

The system will provide seamless, active information for local people through supplementing their own data with local information.

Current project development

- \* Building a partnership with technology providers, local community groups, GPs and others to start a process of co-designing the connected communities platform
- \* Identifying data sources including energy meters, room sensors, appliances, health aids, medical records and banks



**Figure 4-4 People powered change. Source: Institute for Sustainability.**

\* Planning for local, contextual and service information will be fed in directly from support services or indirectly via the management envelope.

## **CONCLUSION**

Current approaches to making our existing cities more efficient often focus on taking isolated easy-to-implement measures, such as insulating homes, encouraging the switch to energy efficient products and promoting public transport usage. A step-change is required to make the transition to sustainable cities that makes the most of limited public funds, attracts institutional investment and secures the passionate engagement of communities. To do this we have to approach the challenge of transforming our cities in a different way. Total Community Retrofit is an integrated whole-system approach to renewing homes, businesses and communities so they are resilient, productive and low carbon.

This is not a radically new approach. It is the next increment step towards 2050 cities building on best practice in area-based regeneration with new innovations. As with all good area-based regeneration schemes, a systemic approach is critical – the aim should be to create economic, social and environmental value in a sustainable manner.

However, a failing of previous schemes has been a lack of deep engagement and ownership by local people. It is not enough to consult; change powered by local people is the only change that is likely to be sustained and sustainable. Every community facing problems contains within it people and groups who step forward as the solution. People cannot be the passive recipients of change; they must own the change and be its beneficiaries.

**References**

Hanscom, G. (2011) The next small thing: How sustainable neighborhoods could reshape cities. Grist, [blog] 30 November, Available at: <http://grist.org/cities/2011-11-29-the-next-small-thing-how-neighborhood-level-sustainability-effor/> [Accessed: 18 February 2013].

