Clyde Waterfront

Clyde Waterfront is the biggest regeneration project ever undertaken in Scotland. It brings together public and private sectors to rejuvenate 20km of the city alongside the River Clyde, from central Glasgow westwards past the towns of Clydebank, Renfrew and Erskine to Dumbarton. The initiative started in 2003 following the publication of an OECD report, 'Urban Renaissance: Glasgow', which recognised that the river Clyde area and its environs represent the city's main under-utilised assets: people, land and buildings.[1] Around 250 individual projects fall under the umbrella of Clyde Waterfront. Currently approximately one third of these are completed, one third is at the planning stage, and the other third are underway.

The overarching Clyde Waterfront Regeneration Initiative (CWRI) seeks to develop a vibrant and thriving area around the River Clyde, with people and communities at its heart. The regeneration is based on the four themes of economy, place, people and connectivity.

Two interlinked projects have been selected to illustrate best practice from Clyde Waterfront:

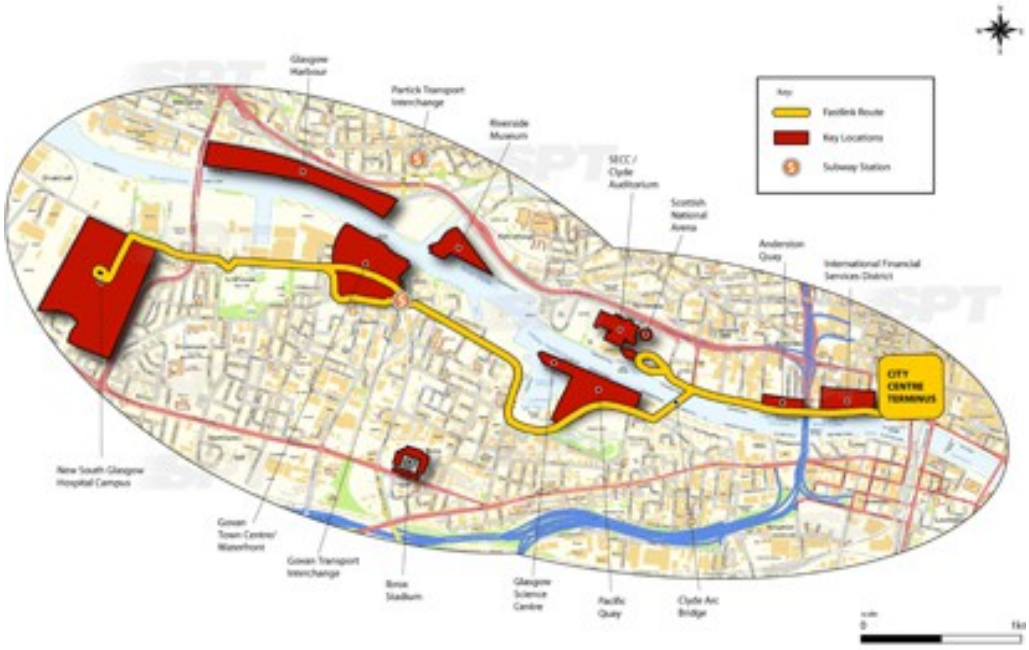
- **NHS South Glasgow Hospital campus (NSGH):** this will comprise a 1,109-bed adult hospital and 256-bed children's hospital with maternity services, able to treat 725,000 patients a year. Due for completion in 2015, it will be the biggest hospital in the UK.

- **Fastlink:** this is a transport project, promoting rapid transit 'tram on tyres' energy efficient buses. The new routes will improve the connection of the city centre with areas that are difficult to access by public transport. The core route will connect the city centre to the SECC and Govan (NHS South Glasgow Hospital campus). The regional route will connect Glasgow Harbour with Clydebank and Braehead.

Figure 2 below shows the Fastlink route. The yellow line shows the core route that will connect the city centre with strategic areas. In the first phase it will connect the city centre with South Glasgow Hospital Campus.

Figure 2. Fastlink route in Glasgow

[1] OECD, 2002, Urban Renaissance - Glasgow: lessons for innovation and implementation http://browse.oecdbookshop.org/oecd/pdfs/product/0402111e.pdf



The sections below set out how the Clyde Waterfront initiative fulfils the key European Commission and STEP UP lighthouse criteria.

Integration of energy, ICT and transport

Energy

NHS South Glasgow Hospital campus: once the hospital campus is fully operational the energy efficiency targets will be: 15% renewable energy contribution, including 0.06% of visible generating capacity; BREEAM excellent rating; Scottish Energy Performance Certificate (EPC) assessment rating of 'B'.

The NSGH campus aims to deliver a world class, modern health care campus which comprehensively addresses energy and sustainability, and makes use of advanced technology and innovative energy standards and generation sources. The new hospital campus will allow services to transfer from their current buildings, the majority of which date from the Victorian era and have poor energy efficiency. The centralisation of facilities also brings a decrease in transport energy use through a reduced need to travel.

The development has a low energy design, with a future target of 80kg CO_2/m^2/annum and 55GJ/100 m^3/annum. This will be achieved through high building efficiency and reduced energy consumption features, such as:

- Building fabric U values set to optimise efficiency, providing both heating and cooling;
- IP integrated building management system (BMS);
- Utility metering and services sub-metering, monitoring and reporting via integrated software;
- Low carbon tracker to identify areas of opportunity for reduced energy consumption;
- Use of e-glass to optimise heat retention in north/north east elevations; minimise solar gain on south/south east/south west elevations; air permeability designed at 5m³/m²/hr @ 50 pa, half the value required under Scottish Building standards;
- Utility metering and services sub-metering, monitoring and reporting via integrated BMS/ERM software;
- High efficiency lighting design to DEFRA extemporary standards; complete with daylight sensing dimming controls, saving energy while maintaining operational lighting levels; PIR occupancy control, switching lighting and, where suitable, heating (areas of intermittent use) off when space is unoccupied;
- Innovative heating and ventilation with 100% fresh air for clinical environments; free cooling control; zoned heat recovery via thermal wheel technology within central air handling plant; optimisation of local space heating/cooling controls; user comfort control limited to ±2°C range; inverter controlled fans and pumps to manage variable load conditions.

The sustainability and low energy design strategy for the NSGH campus will utilise a low carbon tracker to ensure that all opportunities to reduce energy consumption are considered. This will include the following requirements:

- Exceeding the Scottish Building Standards;
- LZC (Low or zero carbon) energy supplied utilising three 1.1 MWe, gas fired CHP units, providing tri-generation output of electricity, heating and cooling (via absorption cooling plant);

- District heating system approach utilising MTHW (Medium Temperature Hot Water System) distribution from seven 5 Mwth (Megawatt thermal) dual fuel boilers complete with economisers and electricity supply;
- Provision of 100 KW of photovoltaic electricity generation (see picture below).

Figure 3. Solar panel installation at NHS South Glasgow Hospital campus

Solar Panel Installation

Fastlink: the project has integrated elements of efficient transport, air quality improvement, reduction in carbon emissions and social benefit as the main building blocks of the project. The project will result in a reduction of 22,000 tonnes of CO_2 per annum (for the core, inner and regional phase).

ICT

Masterplan: the NSGH campus and Fastlink are part of a Masterplan framework which includes a wider 'Creative Clyde' initiative. The Masterplan has a particular focus on creating a Digital Media Quarter for the city to deliver a vibrant centre for media, technology and creative businesses in Scotland, offering opportunities to blend digital media into the physical landscape. Opportunities to incorporate digital media into the public realm of the area through temporary structures and public art commissions are also being considered.

Examples include control of lighting features through mobile phone SMS messages and the movement of other pieces of street furniture through interactive controls.

Hospitals' Local Area Network: Local Area Network (LAN) infrastructure will support the new South Glasgow Adult and Children's Hospitals due to open in 2015. The building will be state-of-the-art and the IT infrastructure will support Scotland's biggest emergency department and critical care complex. The technology will ensure that the right patient care can be delivered quickly, efficiently, effectively and safely. The new LAN will provide the core network for the hospital and will integrate with the existing infrastructure across the hospital campus. Clinicians will be able to access and share information, such as electronic patient records or picture archiving images, with other departments quickly and securely. This will enhance the patient experience, as they will be subject to fewer delays from the moment they enter the hospital to the time they leave. This will also help to reduce the length of stay for in-patients and support the hospital's delivery of patient care and reduce the need for frequent returns to the hospital.

Transport

NHS South Glasgow Hospital campus: the campus will be supported by the Fastlink project to provide increased connectivity for commuters, staff and patients from across the city. It should also result in lower transport energy use and emissions through a reduced need to travel.

Fastlink: part of the project is developing dedicated route ways and bus lanes with high priority measures on roads and at junctions, as well as a high frequency service at peak times. ICT improvements will see real-time passenger information installed at bus stops and stances, as well as number plate recognition CCTV brought in to deter drivers of other vehicles taking advantage of bus-only routes. In this way the project will link into the new technologies that are being delivered to improve transport and traffic as part of the TSB Future Cities Demonstrator project (see section 4.1.1 above).

Other

The NHS South Glasgow Hospital campus has also considered urban planning effects, from a land use ecology and pollution perspective:

- Tree preservation orders: protected trees are to be incorporated into the design;
- Storm water: run off is minimised by use of permeable paving, Sustainable Urban Drainage Systems (SUDS) and vegetated (green) roofs;
- Water use minimisation; and
- Food waste will be collected separately for environmentally friendly processing.

Replication and scalability

Clyde Waterfront is a large regeneration project with a strong partnership between the public and private sectors, working together in a long term commitment for development. The partnership model used has the potential for replication in other regeneration projects at a local and regional level. Some elements are already being replicated in other areas of Glasgow, for example the regeneration of East End and Clyde Gateway.

Clyde Waterfront has helped the local authority and private sector work together in its approach to regeneration, using the lessons learned in the implementation of new projects such as the Glasgow and Clyde Valley City Deal.

The NHS South Glasgow Hospital Campus has invested in IT infrastructure with appropriate functionality to support the reconfiguration of services and emerging models of care, which will be crucial to the successful implementation of modern efficient healthcare systems. This element has replication potential in modernising health care facilities across Scotland and the UK. In building design, the hospital campus demonstrates innovation in sustainable construction, BREEAM, a strong energy efficiency approach with targets and the maximisation of resources, including a district heating system, integration of SUDS and soft facilities management. The hospital campus will set the standard in healthcare buildings. There are plans to use similar approaches in all new developments in the NHS estate, including elements such as district heating.

The Fastlink scheme has high potential to be replicated, provided there is cooperation between the local authority and transport provider. The overall regeneration project would be a costly and significant undertaking, but many elements of it would be more easily replicable.

Integrated building blocks

Clyde Waterfront aims to deliver significant social, environmental and economic benefits by integrating a diverse mix of business, housing, tourism, leisure and transport solutions.

A priority objective of the Clyde Waterfront regeneration is to connect disadvantaged communities to new economic opportunities. The regeneration of the Clyde is intended to drive forward the growth and development of modern industry in key sectors such as digital media, biotechnology and financial services. Long standing industries on the Clyde, such as shipbuilding and engineering, will also remain of critical importance and they can be re-energised through a vibrant Clyde Waterfront.

Transport infrastructure has been a key building block; the Clyde Arc, which opened in September 2006, is the first new vehicular bridge over the River Clyde since 1969, and is a crucial infrastructure component in the continued development of Clyde Waterfront. The Broomielaw to Tradeston pedestrian Bridge, opened in May 2009, improves pedestrian links between Tradeston and the International Financial Services District (IFSD).

The NHS South Glasgow Hospital Campus combines social, environmental and economic benefits by providing jobs and training to locally recruited apprentices and unemployed citizens. The project also is sub-contracting to local small to medium businesses. Working in partnership with the main contractor and the local regeneration agency, to date the project has filled in excess of 500 vacancies, including over 350 'new entrants' incorporating 103 apprenticeship places. In addition to employment opportunities the project has also provided 198 work experience placements for young people and engaged over 2,000 pupils in activities to promote careers in healthcare and/or construction.

Monitoring and reporting

The performance of the Clyde Waterfront Regeneration Initiative (CWRI) has been monitored since 2003 by BiGGAR Economics and Ekosgen, principally to assess its contribution to GVA and employment.

Monitoring of the performance of the NHS South Glasgow Hospital Campus and Fastlink will be done according to the performance management systems of the NHS and Glasgow City Council. The measures that will be monitored include energy and environmental performance.

Given the scale of the Clyde Waterfront project, when it transfers to the Council it will come under the performance management system for strategic projects, which looks mainly at

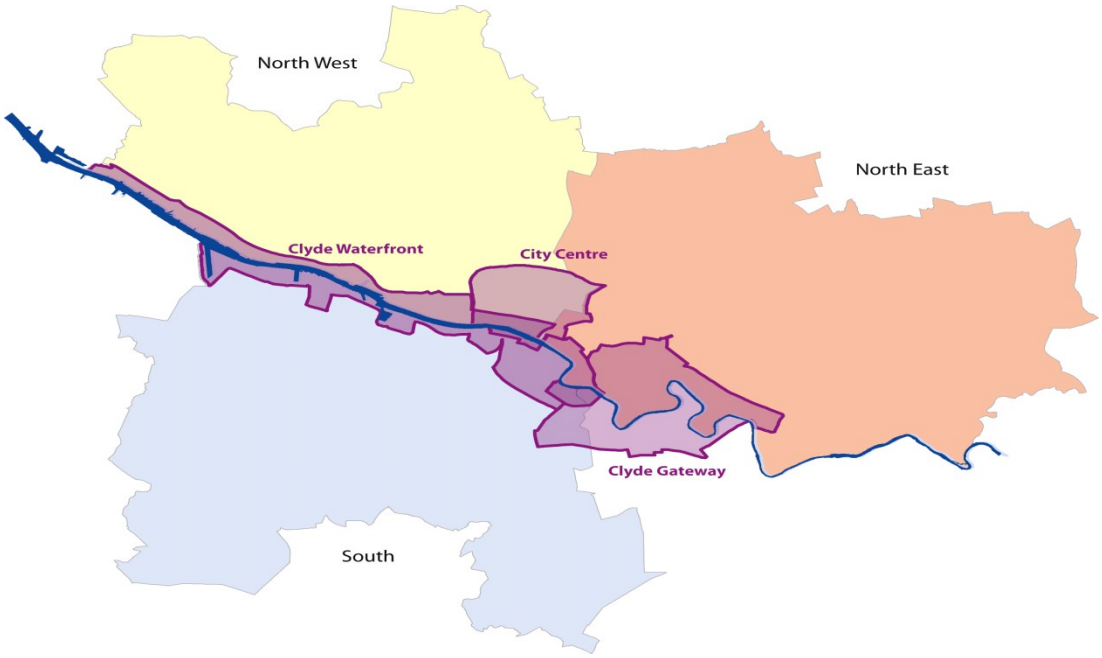
delivery of key milestones. Fastlink, as a strategic project within Clyde Waterfront, is already monitored in this way as part of the Land and Environment Services' strategic projects programme.

Key winning elements of success

Political leadership with a long term approach

The Clyde Waterfront is one of three key political priority areas for regeneration in Glasgow (see below).

Figure 4. Priority regeneration areas in Glasgow



Source: Glasgow City Council, 2013

In the future, the CWRI will be developed under the Glasgow and Clyde Valley City Deal, an agreement between the local authorities in the Clyde Valley and central Government which provides additional funding to support economic growth. The area is identified as a strategic priority in the draft Local Development Plan (GCC, 2014), the Council's key spatial planning policy document. At the regional and national level, the Clyde Waterfront is a key initiative in terms of meeting political priorities for supporting economic development, reducing inequality and addressing social exclusion.

CWRI is a strategic partnership between the public sector working in tandem with the private sector and local community groups. The project is a partnership including three local

authorities, the NHS, a regional transport partnership (Strathclyde Partnership for Transport (SPT)), the Scottish Government, Scottish Enterprise and Communities Scotland. These actors are involved in different ways, and have different priorities, such as:

- The Scottish Government believes the regeneration of the Clyde will help reduce inequality and address social inclusion;
- Scottish Enterprise has an interest in the impact of Clyde Waterfront on the Scottish economy. Between 2004 and 2011 expenditure will total approximately €101 million (£126 million) across a number of projects including Pacific Quay, Renfrew Riverside, Clydebank Re-built and the Shipbuilding Task Force;
- Glasgow City Council is working on regeneration from Glasgow city centre to Yoker on the north bank and King George V Dock on the south;
- Renfrewshire Council is engaged in projects along the south bank from Braehead to the Erskine Bridge;
- West Dunbartonshire Council, together with Scottish Enterprise, has established and funds Clydebank Re-built, a company working towards the regeneration of the town. Its area runs from Rothesay Dock to Dumbarton on the north bank.

All the actors in the project acknowledge that the widespread regeneration of the River Clyde cannot be delivered through one organisation and so a Strategic Partnership Board has been created to drive the transformation and ensure all efforts along the river are carefully planned and co-ordinated. This integrated approach is ensuring that Scotland gains economic, social and environmental benefits from this public sector investment.

Collaboration and dialogue with all stakeholders

The main stakeholders involved in the NHS South Glasgow Hospital campus are NHS Greater Glasgow and Clyde, Brookfield Europe (asset management) and Scottish Enterprise. Brookfield Europe, the contractor, has created local jobs and training for young apprentices who are currently unemployed. The project has also hired sub-contractors, giving priority to local small to medium businesses. This has had a positive benefit for the local community.

The main stakeholders involved in the Fastlink project are the Scottish Government, Strathclyde Partnership for Transport (SPT), Glasgow City Council, West Dunbartonshire Council and the NHS. These organisations are all from the public sector and form the project's steering group. There is also participation from bus operators as key private sector actors for delivering the transport services within Fastlink. Meetings have already taken place

between the local authority and bus operators. Glasgow City Council also has a close monitoring role over the project.

Contribution to multiple policy objectives

The transformation and regeneration of the areas around Clyde Waterfront has been hugely significant. Projects have enhanced attractiveness and economic development potential and reduced social and economic inequality in the wider area, with improved connectivity increasing prospects and standards of living for all. The soon to be completed New South Glasgow Hospital, Pacific Quay Media Quarter and creative industries cluster all offer major opportunities for growth in key sectors. CWRI has created employment, infrastructure, amenities and buildings for businesses and communities to prosper, tackling unemployment and inequality in an integrated and strategic way.

Urban regeneration and economic development are core policy objectives that the Clyde Waterfront initiative is contributing to. The areas that have seen major transformation include the development of an International Financial Services District, widespread construction and refurbishment and the creation of pedestrian plazas. The approach taken by Glasgow and neighbouring councils to regenerate the Clyde River is also an example of how to work in partnership with the private sector to regenerate old industrial and brownfield areas.

Projects have been delivered in an integrated way so that economic development (retail, commercial and housing) has been provided at the same time as social facilities (leisure and public amenities) and improved infrastructure. The area has seen the creation of new colleges, museums, footways, cycle ways, office buildings and housing, creating over 20,000 new jobs, and thereby greatly reducing inequality and unemployment in previously deprived areas. Projects have delivered employment, training opportunities and apprenticeships, as well as widespread community benefits (see below).

Investment to date has led to:

- Job creation (20,000 new jobs);
- Housing stock development (9,000 new homes); and
- Commercial development (313,000 m^2 of commercial space).

Over the course of the project it is expected that approximately 50,000 jobs will be created, 25,000 new homes will be built and around 2.8 million m^2 of new commercial space created.

Figure 5. Regeneration of River Clyde through Clyde Waterfront projects

Business models to attract investment

Clyde Waterfront is funded through public and private partnership funding. Investments of around £1.6 billion (€2 billion) have already been made; much of this by the private sector. It is projected that £4-4.8 billion (€5-6 billion) will be invested over the full 25 year regeneration project. The public sector input is £1billion (€1.3 billion) from the Scottish Government, £200million (€250 million) from Glasgow City Council and £80 million (€100 million) from Scottish Enterprise.

In terms of the two specific projects that have been highlighted, the nature of the funding and amount is:

1. NHS South Glasgow Hospital campus: approximately €990 million (£850 million) invested from public funds through Scottish Government spending on the NHS (National Health Service).

2. Fastlink phase 1: approximately €47 million (£40 million) invested, funded through the Scottish Government.

The CWRI is under a process of restructuring. Until this year, Scottish Enterprise coordinated the project but in the future Glasgow City Council, under the Glasgow and Clyde Valley City Deal, will be the umbrella under which projects of the Clyde Waterfront will be developed. Glasgow City Council is to lead the process, though the detailed arrangements for project governance are still to be determined over the course of this year.

Promotion of the initiative

The Clyde Waterfront initiative has been promoted using its dedicated website (www.clydewaterfront.com), at events in the city and in the area itself, especially around the International Financial Services District (IFSD).