Key Principles for Adaptive Communities

Farrells Case Studies

FARRELLS

SUSTAINABLE PLACES

- Principles of retrofit, regeneration and fabric first in design
- Opportunities for city region economic prosperity
- Integrate new and enhance existing bio-diverse landscapes
- Embrace and support healthy, diverse and connected communities
- Incorporation of innovative low carbon energy solutions
- Leading reputation in accredited sustainable design
- Encouragement of active, integrated and low carbon travel
- Intelligent design using closed loop solutions for natural resources and manufactured materials
- Cultivate and share sustainability knowledge and skills
- Incorporation of innovative science and technical solutions to meet 2050 CO_2 targets

HERITAGE

- Design and thinking which creatively fuses heritage and modernity
- Urban and environmental regeneration and retrofit
- Encouragement of wide-ranging skills and enterprises
- Champion parks as vital urban places
- Respect for diverse history of many cultures
- Involvement of the wider community and volunteers in decision making
- Promotion of sustainable landscapes to challenge impacts of climate change
- Support for tourism economies
- Cherish and share our legacy of physical, natural and intellectual resources
- Shape authentic and inspirational places

ECONOMY AND TECHNOLOGY

- Good governance with partnership and community involvement
- Support resource management which uses circular economies and renewable energy
- Global knowledge exchange
- Intelligent use of recycled materials
- Digital connectivity for super connected cities
- Innovate integrated transport solutions
- Support social economy
- Incorporation of training and knowledge exchange which empowers sustainable future
- Recognise rural connectivity and development
- Celebration of achievements

KNOWLEDGE AND PARTNERSHIPS

- Sustainable knowledge through place making and urban rooms
- Listen
- Connections across disciplines
- Thought leadership
- Strong and significant research
- Co-operative and collaborative design practice
- Participation in global knowledge exchange
- Support and stimulate knowledge and social economies
- A diverse work force which encourages the civic voice
- Work with others to meet sustainability goals

FOOD AND WATER

- Places which give opportunities for healthy and sustainable diets
- Bio-diverse planting
- Local food production
- Short food chains
- Incorporation of community food projects
- Promotion of sustainable food or farming knowledge and skills
- Support for food enterprises
- Closed loop solutions for food and water waste
- A future of sustained food supplies
- Rain and grey water harvesting

HEALTHY PLACES

- Access to healthy food and drink
- Access to diverse open spaces
- Active, skilled, employed and committed communities
- Available green and inclusive environments
- Contact with diverse natural ecosystems
- Environment which inspires feeling safe
- Integrated, accessible and active travel
- Reduced noise pollution
- Sustained high quality measurements for soil, air and water
- Design, materials and management which ensure healthy buildings

COMMERCIAL

REGENTS PLACE

Building A
9 storey office building
GIA 16, 269 sq m
BREEAM 'EXCELLENT' RATING 2006

- Economy and Technology
- Food and Water
- Knowledge and Partnerships
- Healthy Places
- Sustainable Places
- Heritage



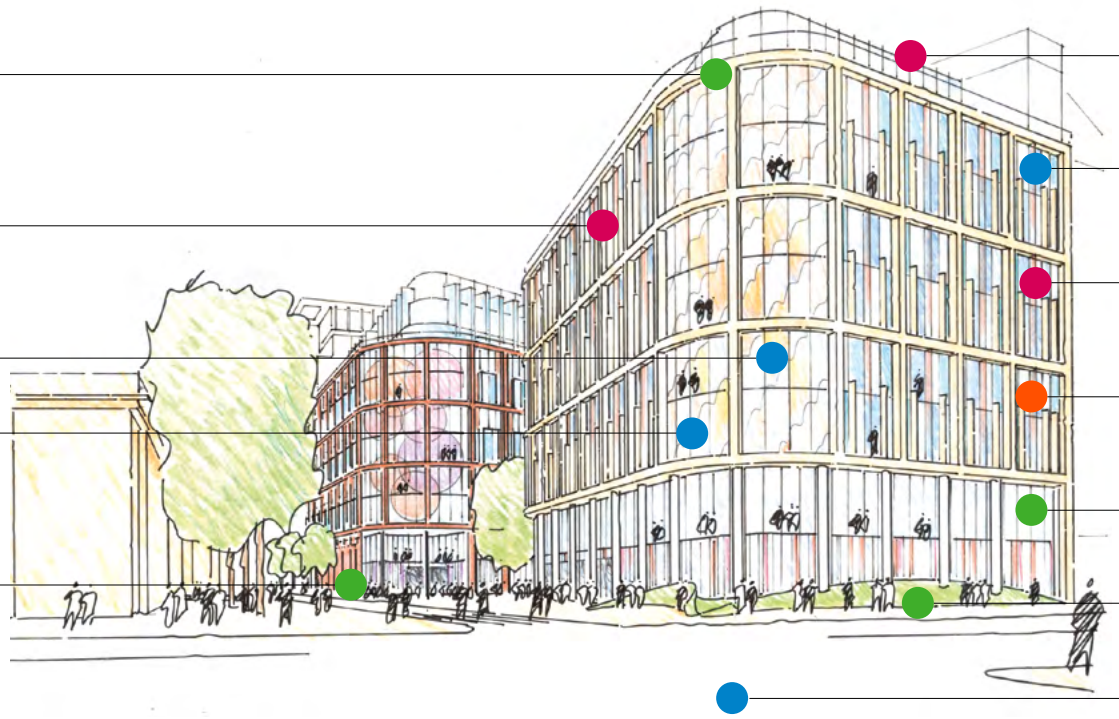
Day lighting penetrates deep into office units through glazed façades

CHP for base load heat and electricity

Low energy luminaire lamps

Segregated collection of waste from whole development

Easy access to local transport services- 15 minute walk to Euston Station



PV on roof for street lighting

High embodied energy with renewables for running the building

Water efficient gadgets like spray taps and low flush toilet cisterns

Water metering to monitor consumption

Natural ventilation through courtyard

Secure cycle parking provision

Demolition waste to be used to fill road bases

COMMERCIAL

REGENTS PLACE

Building B
10 storey office building with retail and theatre space
GIA 34, 000 sq m
(22, 000 sq m office, 260 sq m retail, 280 sq m theatre)
BREEAM 'EXCELLENT' RATING 2006

- Economy and Technology
- Food and Water
- Knowledge and Partnerships
- Healthy Places
- Sustainable Places
- Heritage



Day lighting penetrates deep into office units through glazed façades

Courtyards help in day lighting the service spaces

High embodied energy with renewables for running the building

Segregated collection of waste from whole development

Improved thermal building performance

Secure cycle parking provision

Easy access to local transport services- 15 minute walk to Euston Station



PV on roof for street lighting

Natural ventilation through courtyard

Water efficient gadgets like spray taps and low flush toilet cisterns

Water metering to monitor consumption

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Low energy luminaire lamps

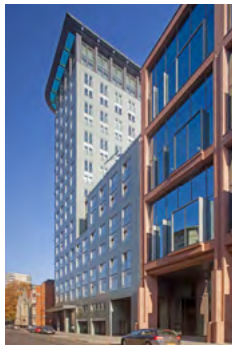
Demolition waste to be used to fill road bases

RESIDENTIAL

ONE OSNABURGH STREET

20 storey residential building
GIA 18, 000 sq m
(4, 400 sq m social rented housing, 1, 700 sq m intermediate housing,
4, 100 sq m market housing)
ECO HOMES 'EXCELLENT' RATING 2004

- Economy and Technology
- Food and Water
- Knowledge and Partnerships
- Healthy Places
- Sustainable Places
- Heritage



Low energy luminaire lamps

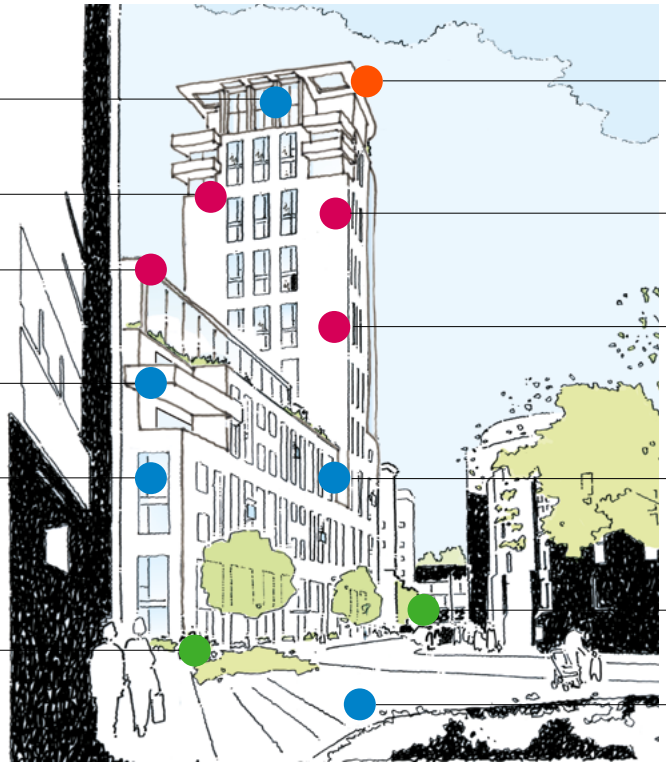
SHW system to generate heat

Solar thermal panels on affordable housing roof

Improved thermal building performance

High embodied energy with renewables for running the building

Secure cycle parking provision



Surface water drainage system to use runoff water for courtyard plantation

CHP for base load heat and electricity

Water efficient gadgets like spray taps and low flush toilet cisterns

Segregated collection of waste from whole development

Easy access to local transport services - 15 minute walk to Euston Station

Demolition waste to be used to fill road bases

INTERIORS

14 PIER WALK & 6 MITRE PASSAGE

Building A: 6 storey office building with retail
GIA 25, 445 sq m (18, 350 sq m office, 1, 225 sq m retail)
BREEAM 'EXCELLENT' RATING 2004

- Economy and Technology
- Food and Water
- Knowledge and Partnerships
- Healthy Places
- Sustainable Places
- Heritage



Light sources are energy efficient with small percentage of low voltage lighting

General ambient lighting is provided by square luminaires with a diffuser and a separate low voltage downlight

Random position pattern of pendant luminaires to allow for full flexibility

Design for space efficiency: Frequent waste and recycling collection minimised waste room space requirements

Use of recycled materials e.g. kitchen worktops are made of decommissioned Victoria line

FSC certified timber: Junkers Floating Clip

Waste materials used as bio fuel and raw material acquired from sustainably managed forest



High acoustic performance (above 50db) Void above ceiling and below floor will be closed off with an acoustic barrier

Luminaires to be switched on and off via local ceiling mounted automatic presence detection

Cradle to cradle design, all glass from landfills, bonded with solvent-free resin

Blinds Mechoshade manual and electrical double bracket system, glare control and black out

Hexcelscreen PVC free shade cloth

Interface carpet: Interface an environment accredited manufacturer; BREEAM A rated product; Random design pattern, virtually no waste when laid

Design for flexibility: Sliding/folding partitions used as internal walls only contribute 1% overall environmental impact

5 WRAP principles/solutions met:

- Elements of biggest impact, nearly 100% recyclable e.g. glass, steel, concrete
- Design of space efficiency; frequent waste and recycling collection
- Specify products that produce minimum installation waste
- Demountable partition walls for flexibility
- Design services for maximum flexibility

OFFICE AND RETAIL

14 PIER WALK & 6 MITRE PASSAGE

Building A: 6 storey office building with retail
GIA 25, 445 sq m (18, 350 sq m office, 1, 225 sq m retail)
Building B: 12 storey office building with retail (NIA 10, 747 sq m)
BREEAM 'EXCELLENT' RATING 2004

- Economy and Technology
- Food and Water
- Knowledge and Partnerships
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- Sustainable Places
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Improved CO_2 emission rate of 23.75% above Part L2A 2006

Design for 200 years flood risk

Energy efficient facade (Aluminium frame with opaque infill and double glazing)

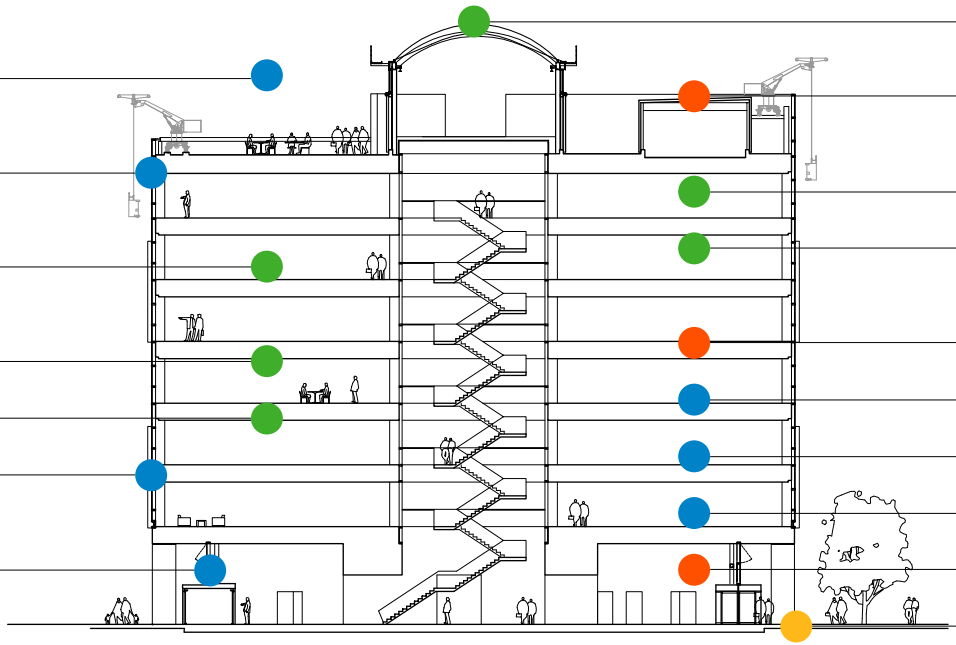
High frequency lighting, separate lighting control

Local occupant temperature control

Local occupant glare control

Use of recycled materials fit out and construction

Recycling- provision of waste storage areas



GSHP system

Internal atria for daylight distribution

Extensive green roof: Bio diversity and rain water harvest

Heat recovery ventilation system

High efficiency cooling system (Active Chilled Beam)

Tenant water sub metering

Tenant energy sub metering

Water saving sanitary fittings

SWMP-Site Waste Management Plan

Green water recycling, rain attenuation

Environmental site management by Considerate Constructors

Good provision of public transport

Cycle parking and facilities

WRAP principles/solutions:

- Recycle water for re-use throughout the facade
- Facade system suitable for complete off site construction
- Design without basement to minimise excavation
- Design for waste efficient procurement- specify high content of recycled material
- Design for deconstruction and flexibility- modular facade system

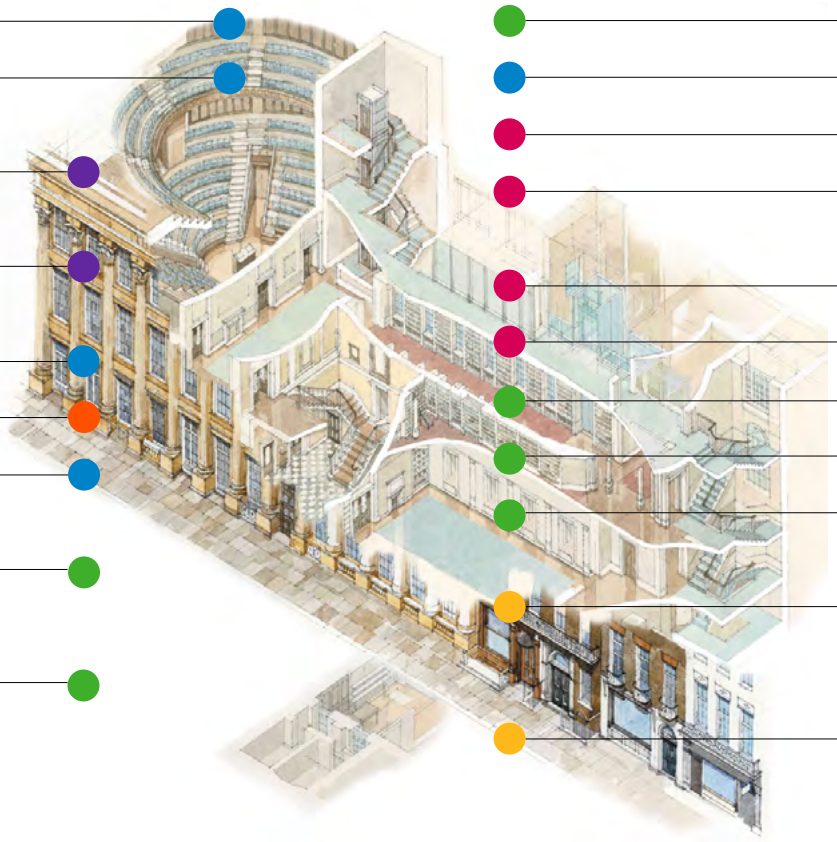
CULTURE, LEISURE, HEALTH, LEARNING, INTERIORS AND RETROFIT

ROYAL INSTITUTION OF GREAT BRITAIN

Refurbishment of Grade I listed building: Exhibition, new atrium, new social hub, educational re-organisation of internal spaces and educational facility

- Economy and Technology
- Food and Water
- Knowledge and Partnerships
- Healthy Places
- Sustainable Places
- Heritage





Low VOC materials for fit out

Use of recycled materials for fit out and construction

Safeguard building heritage and maintain social identification

Refurbishment: Working with existing building stock

Water saving sanitary fittings

Grey water recycling, rainwater attenuation

Recycling: Provision of waste storage area

Cycle parking and facilities

Good provision of public transport

Internal atria for daylight distribution

Energy efficient atrium glazing

Heat recovery ventilation system

High efficiency cooling system (Active Chilled Beam)

CHP system

Tenant energy sub-metering

Local occupant temperature control

Local occupant glare control

High frequency lighting with separate lighting control

Environmental site management by Considerate Constructors

SWMP: Site Waste Management Plan

HEALTH, LEARNING AND RESIDENTIAL

GREEN BUILDING

10 storey residential building with a nursery and doctor's surgery

36 sq feet

GREEN LEAF AWARD FOR SUSTAINABLE BUILDINGS 2006

- Economy and Technology
- Food and Water
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Estimated 75% reduction in CO_2 emission due to construction techniques

Concrete structure built with 50% less embodied energy than steel

Concrete structure acts as a temperature regulator

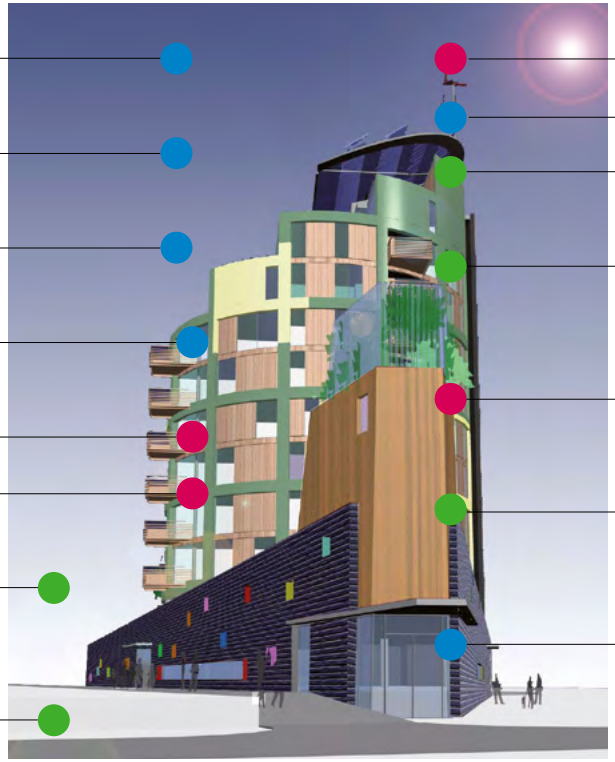
Low embodied energy timber wall and window infill panels on the exterior

SHW system to generate domestic hot water

Embedded floor pipes as under floor heating

City centre amenities are within walking distance

Immediate access to public transport



Wind turbine for electricity

PV on roof for street lighting

Daylight for the building core due to glazed top

Stack effect through atrium to ensure cross ventilation in summer and act as a conservatory in winter

Low floor technologies used throughout kitchen and bathroom fittings

Showers rather than baths to reduce water consumption

Waste separation at source and separately transported

STRATEGIC VISIONS

THAMES ESTUARY PARKLANDS

Exemplar masterplan for low carbon regeneration and growth at a regional scale

Area 120, 000 sq km

- Economy and Technology
- Food and Water
- Knowledge and Partnerships
- Healthy Places
- Sustainable Places
- Heritage



Centralised management: Under strict government rules to ensure sustainability goals are met

Overall waste strategy implementing strict government regulations on household, commercial and industrial waste

Community parklands: Linking communities to the river

Renewable energy offshore wind farms and tidal energy

Greening the urban landscape regeneration and development of urban parklands as places of cultural and social interaction

Enhancing existing open spaces and improve access to become 22 new community parklands



Linear connecting parklands

Thames Estuary Path and improve major transport corridors

New Homes: Creating new low carbon homes

Active water landscape

Re-invigorate the blue landscape as a major environmental, recreational and economic asset

New water identity:
The Thames Estuary is deprived of major parklands compared to other parts of the south-east

Retrofitting existing homes

Flood protection

Creating new jobs in agriculture, leisure, green energy and new settlements

Create a connected parklands landscape with 'green grids'

STRATEGIC VISIONS

BICESTER ECO TOWN

Exemplar masterplan for low carbon regeneration and growth at a regional scale

Area 120, 000 sq km

- Economy and Technology
- Food and Water
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- Sustainable Places
- Heritage





It is more sustainable to grow an existing town than create an isolated new town

Promote Eco Lifestyle and enable more environmentally conscious community

Site-wide water recycling

Water management- water efficient fittings

Waste strategy co-manage household, commercial and industrial waste

Construction skills training for retrofitting and using recycled materials

Creating new jobs

Rainwater harvesting

Connect the town and the surrounding communities together

Landscape as the key driver bringing the countryside to the town

ECO_2HOUSE factory to serve for other eco-developments

ECO_2HOUSE Modular Framing System: Flexible system to meet CSH Level 6

Community wide energy systems identifying local renewable resources

Flood Drainage Protection networks to accommodate effects of climate change

New sustainable transport plan

Use of sustainable transport routes in the construction process

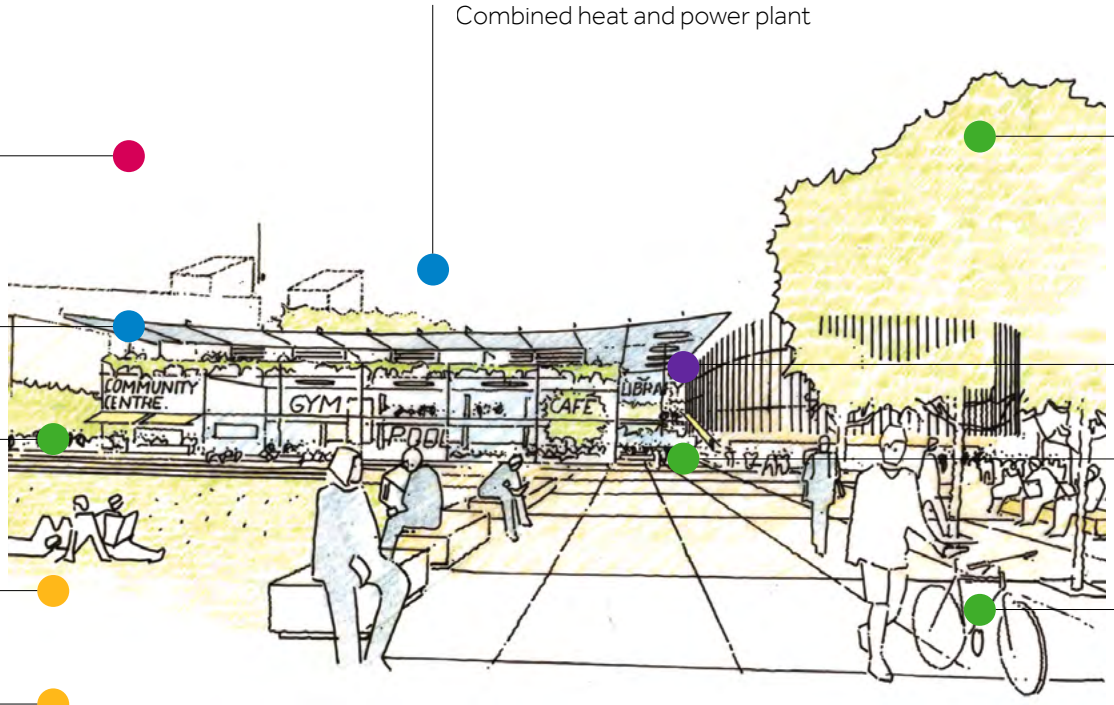
MASTERPLANNING AND RESIDENTIAL

SWISS COTTAGE

A new cultural quarter comprising of a landscaped civic space, social and welfare amenities including a new community centre, doctor's surgery, café, crèche, award-winning social housing, private apartment and leisure centre

- Economy and Technology
- Food and Water
- Knowledge and Partnerships
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- Heritage





95% of affordable units will be life time homes

Combined heat and power plant

Environmental improvements surrounding area (tree planting and traffic calming)

Re-use of Portland stone removed from existing leisure centre

The scheme retained the Grade II listed library

Easy access to local transport services

Cycle parking facilities in basement

Environmental site management by Considerate Constructors

Green Travel Plan: Including trip planning for staff and promotion of low emission vehicles

SWMP: Site Waste Management Plan

MASTERPLANNING AND OFFICE

THE HOME OFFICE, LONDON

3 buildings at 7 storeys with a naturally lit, internal street link

- Economy and Technology
- Food and Water
- Knowledge and Partnerships
- Healthy Places
- Sustainable Places
- Heritage



From demolition of old building 8000 t of steel and 90% concrete was recycled

Re-use of existing foundations

Water used for internal heat transfer for the building heat regulations

Water saving sanitary fittings

Boiler and chiller only required as back-up system

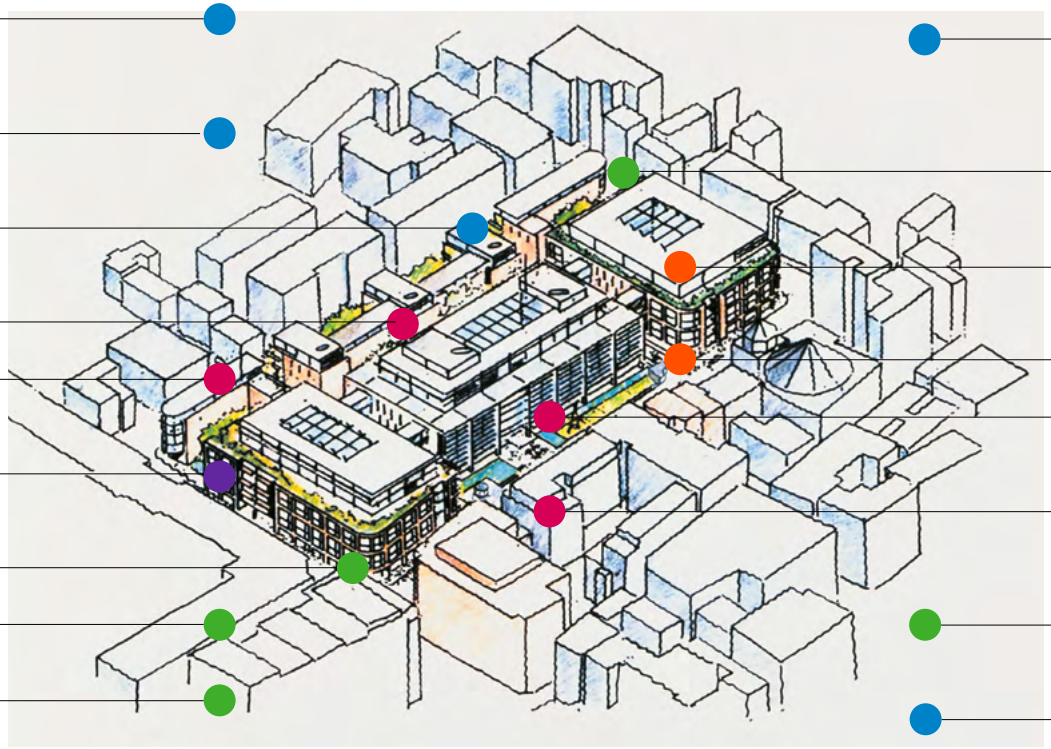
Remaking lost street frontage and reinstating the area's historic pattern

Art strategy facade acts as sunscreen

Cycle parking facilities

Proximity to amenities

Recycling, provision of waste storage area



40% reduction in CO_2 emissions over Part L of Building Regs, due to unique energy transfer

95% of occupants are within 5.5m distance from windows of courtyard

Extensive green roof: Biodiversity and rainwater harvesting

Grey water recycling

Building internal heat regulation system installed

100% of electrical energy sourced from renewable sources

Good provision of public transport

Builder user guide on operation and environmental performance of building

MASTERPLANNING

GREENWICH PENINSULA

A masterplan providing for four new residential neighbourhoods, an office and a retail district structured around the bus and tube interchange, five public parks and 12 public squares

- Economy and Technology
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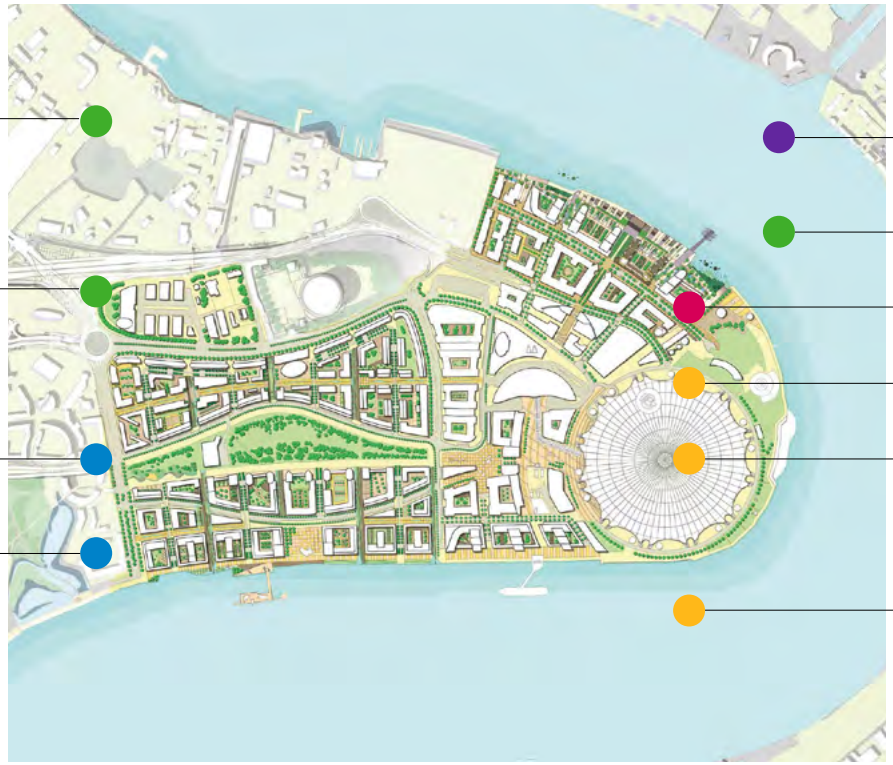


Travel Plan: The creation of high density development in close proximity to a transport interchange

Community Service Plan: A range of services and facilities to serve the new Peninsula community

Infrastructure

Sustainability Management Plan: BREEAM and ECO HOMES EXCELLENT rates are required for every building



Ecological Management Plan: To protect and enhance the local ecology

Bio-diversity

Buildings built to last

The Environmental Statement

Integrated Management System (IMS): To limit environmental impact when developing the Peninsula.

Landscape Management Plan: The methods employed to safeguard and promote existing and new landscapes