



Buildings and Sustainable Development

'The NHS is experiencing its largest ever building programme - a huge opportunity for good corporate citizenship. If our new buildings have a positive impact on local communities we can make a real difference to people's health and to the future of the NHS.'

Sir Nigel Crisp, Chief Executive, Department of Health and NHS

The NHS is experiencing a building boom. By 2010, over £11 billion will have been invested in 100 new hospitals and over £1 billion in new primary care buildings, in addition to ongoing refurbishment.

Now is the time for the NHS to **design sustainable healthcare buildings that encourage patient recovery and a healthy population** through promoting strong local economies, social cohesion and a healthy environment.

Building sustainably provides healing environments and healthier workplaces that enhance public health. This helps reduce pressure on healthcare services, contributing to the long-term viability of the NHS.

This publication is the third in a series that explores the NHS contribution to sustainable development. It looks at how and why the NHS should build and refurbish sustainably, highlighting some of the big issues.

Why build sustainably?

By building sustainably you can create a **virtuous circle**. Designing, constructing and managing a hospital, or other NHS building, in accordance with the principles of sustainable development can **benefit the local community, economy and environment**.

This can **improve public health**

and **reduce demand for health services**, improving the NHS's capacity to be a health-enhancing organisation with a viable financial future. Our 'resources to help you make a difference' on the back page provide further useful guidance.



Source: *Claiming the Health Dividend: Unlocking the benefits of NHS spending*, King's Fund, 2002

What does a sustainable NHS building look like?



- Designed to promote patient recovery and staff retention
- Accessible by public transport, walking and cycling
- Brownfield site location
- Site and design that preserve and enhance biodiversity
- Adaptable to change e.g. climate, new ways of working, new technology

- Engages the local community in the planning process
- Provides community resources
- Uses local labour and suppliers in construction and service delivery
- Uses resources, such as energy and water, efficiently in its construction and throughout its lifetime
- Uses environmentally sensitive building materials that are not harmful to health
- Minimises waste by reusing and recycling building and other materials

The Burnley Central LIFT redevelopment combines GP and dental practices, a leisure centre, a community café, a crèche and a training suite on a site that will be accessible by public transport, walking and cycling. Through involving the community in its planning, providing education and professional development opportunities and encouraging physical activity, this redevelopment will play an important role in local regeneration and population health.

'Good design embodies a deep understanding of people and the local and global environment. Pleasant and healthy spaces contribute to how well we work and how quickly patients recover.'

Sunand Prasad, Architect & CBE Commissioner

The big opportunity

Most NHS building and renovation schemes for hospitals and health centres are funded through the Private Finance Initiative (PFI) or Local Improvement Finance Trusts (LIFT), which bring together private and public money and expertise. The challenge for NHS organisations is to make sure that the terms of these funding contracts deliver sustainable buildings by all means possible. For example, designing them to use less energy will cut carbon emissions *and* fuel bills.

DESIGN

Well-designed buildings with features such as natural light, good ventilation and access to green spaces can result in **quicker patient recovery, higher staff retention rates and reduced recruitment costs**. Hospitals designed to include kitchen facilities can provide fresh and healthy meals that promote patient recovery. Healthcare buildings can encourage good health through exercise by providing green space and being accessible by walking and cycling. A sustainable building is designed to accommodate a changing healthcare system, allowing adaptation for future use and maximising long-term value.

- The NHS loses an estimated 8.2 million working days a year to staff absence
- 78% of Directors of Nursing say that hospital design impacts on the recruitment of nursing staff
- A well-designed building can shorten the length of patient stay and reduce the need for painkilling drugs

'The NHS is a substantial energy user. Energy efficiency measures will save us money and benefit health. We aim to reduce our CO₂ emissions by 15% by 2010.'

John Bacon, Group Director of Health and Social Care Services Delivery, Department of Health

ENERGY

Designing and planning for an NHS building to be **energy efficient** during construction and operation can **reduce the health risks** associated with pollution and climate change, **protect the environment** and **save money**. Buildings designed to use natural light and ventilation reduce the need for electrical lighting and air conditioning, which represent over 50% of the primary energy used in a typical hospital. Capital investment in energy saving design and controls can be recovered through lower operating costs. Planning and design that improve accessibility to health services by public transport, cycling and walking will reduce car use and subsequent air pollution.

- Buildings generate 46% of the UK's carbon dioxide emissions, the main gas contributing to climate change
- In England, energy used by the health sector produces about 3.47 million tonnes of carbon dioxide a year
- Estimates show that admissions to hospital linked to air pollution cost the NHS between £17-60 million a year

Whipps Cross University Hospital NHS Trust is a £340 million PFI redevelopment with a strong focus on sustainable development and regeneration. The Trust is working with local colleges and Jobcentre Plus to provide training and support to help local people access resulting job opportunities. A pre-demolition audit aims to reduce waste going into landfill by up to 30% by identifying markets for materials from the old hospital buildings. Under a pilot scheme run by the Waste & Resources Action Programme (WRAP) at least 10% of the materials used in the construction of the new hospital will be recycled.

Supporting the local community and economy



By **training and employing local people** in the construction of NHS buildings, health can be improved and health inequalities reduced. Making goods and service contracts available to **local businesses and enterprises** will support the local economy and contribute to regeneration. By **engaging local people** and organisations in the planning process from an early stage, NHS buildings can be developed as **community resources** with sports, arts, green space and other facilities. Effective consultation will help maximise community benefit and avoid costly delays in planning applications.

- The construction industry employs 3 million people
- The NHS contributes up to 10% of GDP in some regions
- Mortality rates from all major causes are higher than average among unemployed men while unemployed women have higher death rates from coronary heart disease and suicide

'Building new hospitals without kitchens - that's crazy! Wouldn't you want fresh food if you were ill?'

Jonathon Porritt, Chairman, Sustainable Development Commission

WASTE

The NHS can **minimise waste** by ordering goods to demand, using reclaimed materials in construction, reusing and recycling. This can **save money** on landfill tax, reduce energy and natural resource consumption and **minimise health hazards**. Sourcing materials locally and reusing demolition materials **reduces pollution** from transportation.

- Construction and demolition waste amounts to 17% of all waste in the UK
- Between 80 and 150 million tonnes of construction waste goes into landfill every year at a cost of £1 billion in landfill tax

The Rutland Lodge Medical Centre in Leeds is designed to be energy efficient and sustainable, both in use and through the specification of materials. This GP-funded building has a linear design that enables air from the natural ventilation of rooms to be drawn along central corridors and vented through solar chimneys. Photovoltaic panels on the roof convert the sun's energy directly into electricity to power the building. Bronllys Hospital, near Brecon in Wales, used grant funding to install 485 photovoltaic panels with an electricity output capable of covering the base load of the hospital site.

Resources to help you make a difference

The **NHS Environmental Assessment Tool (NEAT)** from NHS Estates measures the environmental impact of new buildings and refurbishments. http://www.nhsestates.gov.uk/sustainable_development/index.asp

The **Carbon Trust Design Advice Service** offers a free consultation on energy efficiency. http://www.thecarbontrust.co.uk/energy/pages/page_67.asp

Achieving Excellence Design Evaluation Toolkit (AEDET), developed by the NHS with CABE and the Construction Industry Council (CIC). http://195.92.246.148/nhsestates/design/design_content/introduction/home.asp?sfdata=4

The London Regional Public Health Group's **Building for Health** initiative includes the **Advisory Navigation Toolkit (ANT)** that directs capital planning teams towards information on sustainability. duane.passman@nwlha.nhs.uk

The **Centre for Healthcare Architecture and Design (CHAD)** http://195.92.246.148/nhsestates/chad/chad_content/home/home.asp

Engage-Construct: how to deliver socially responsible construction projects. www.engageweb.org

The **Future Healthcare Network**, part of the NHS Confederation, offers advice regarding buildings. www.fhn.org.uk

The **Healthy Hospitals** campaign, run by the Commission for Architecture and the Built Environment (CABE) with the Royal College of Nursing. www.healthyhospitals.org.uk

Implementing Action for Sustainability is an appraisal toolkit for projects in the North West. <http://www.nwra.gov.uk/documents/421078445678.pdf>

NHS ProCure 21 from NHS Estates delivers publicly funded buildings and aims to improve procurement standards. www.nhs-procure21.gov.uk

Practical Evaluation Tools for Urban Sustainability (PETUS) has been developed by the Welsh School of Architecture. <http://u001.arch.cf.ac.uk/petus>

The **Sustainability Checklist** is an interactive checklist for local authorities and planners in the South East. www.sustainability-checklist.co.uk

Sust.org is Scotland's first dedicated website to sustainable design in architecture and the built environment. <http://www.sust.org>

The Alliance for Building Sustainability (TABS) is an emerging alliance of leading sustainable built environment organisations. jonbootland@sustainabledevelopmentcorporation.com

The **Code for Sustainable Building** is being developed by government and industry to improve the sustainability of buildings. <http://www.dti.gov.uk/construction/sustaincode/codelead.htm>

The **Health Service Journal Awards 2005** include a Good Corporate Citizenship category for NHS organisations that are promoting social, economic and environmental sustainability, such as through the design, construction and refurbishment of their buildings. www.awards.hsj.co.uk/

The Sustainable Development Commission's *Healthy Futures* project, funded by the Department of Health, helps the NHS to maximise its contribution to the health of individuals, communities and the environment. For more information visit http://www.sd-commission.org.uk/pages/work_streams/health.html. If you are involved in sustainable development in the NHS, or want to be, please call 020 7238 4984/5, or e-mail Susannah.senior@sd-commission.org.uk or Larissa.lockwood@sd-commission.org.uk and we can add your project to our website.