

RIBA 

**Good design –
it all adds up**



RIBA 

Good design —
it all adds up

RIBA 

Royal Institute of British Architects
66 Portland Place
London W1B 1AD
T 020 7580 5533
www.architecture.com

Cover image: Wren Academy,
Friern Barnet, London,
Penoyre & Prasad
Photo: Tim Soar



'There is a danger that in the rush to cut costs we lose more than money from our building projects. To avoid diminishing the quality of life that good design brings, it is necessary to identify the value created by thoughtful and responsive architecture. This report, which is one of my presidential initiatives, seeks to do just that.'



Ruth Reed
RIBA President 2009–2011

Introduction

What *is* the value of architecture? Is it worth the expense? Is design dispensable?

As expenditure on construction schemes of all kinds, from schools to hospitals to regeneration projects, comes under the microscope, we hear these questions more and more.

Maybe design has become synonymous with luxury and the high street, and its role in making ordinary objects desirable and expensive has overshadowed that of making things and places safe, understandable, durable, energy-efficient and affordable.

The evidence assembled here counters the argument that design is a luxury in the production of the built environment, especially in straitened times.

What this report brings to light is the true value of good architecture. Design that resolves problems and answers needs will pay for itself over a building's lifetime. Good architecture has its price. But bad architecture – or no architecture at all – will cost you more.

We summarise the research assessing the value of good design; include case studies that provide the evidence of good practice; and show how clients and those who live and work in a building can get the most out of it when it is created together with an architect.

Architects: creating value

An architect brings more to a building than aesthetics and form. The kind of building a business inhabits is a reflection of its values and standards. So the architect's contribution can have a considerable impact on how the business or brand is perceived and how it performs. And, in adding value, a good designer will turn a building into a tangible asset.

For that to happen, the architect needs to be brought on board early and to work with the client to understand their business or organisation. That way they can design a building, a masterplan or an interior that fits exactly what the client needs, with architecture that is practical and functional, but also a pleasure to live in, work in or visit.

Involving an architect early on also opens the door to cost savings – both in constructing and operating the building – through innovative design solutions. And using an architect to manage the project and coordinate the work of consultants and contractors can save time and money in the long run.

Invest now – or pay later

Using an architect makes sound financial sense. Of course, good advice has its price – but skimping on design quality will end up costing much more over the long term. Design fees are usually just a small fraction of the total cost of construction, and they fade into insignificance when measured against the operating costs of the building over its whole life.

Good design can maximise a building's efficiency and reduce its operating costs. Appointing an architect at the start of a project gives them time to consider and design the building as a whole, and to take measures that will make it cheaper to run and capable of commanding greater value in the long term.

Developing a solid working relationship with an architect, and spending time to flesh out the brief, the timeframe, the budget, and the nature and cost of other professional resources, will dramatically increase the chances of success.

Good design in action Jubilee Library, Brighton



A building of beauty and economy, completed on time and to budget, that the public have taken to their hearts... Jubilee Library is one example of the rewards of thorough preparation and close communication between the client and the design team.

Designed by Bennetts Associates and LCE Architects for a derelict city centre site, the building incorporates a host of bill-busting energy efficiency features, including heating and cooling systems that utilise winter sun, natural ventilation, solar shading, wind towers and even the heat generated by people and equipment in the building.

'The library has been a great success with the customers, who find the building thrilling. We feel that we have achieved with our partners an astonishingly beautiful building combining a very strong aesthetic with its overall function, to truly work as a space for learning, contemplation and interaction.' Katherine Pearce, project manager for Brighton and Hove City Council

Photo: Peter Cook/Bennetts Associates



Building houses, making homes

Nowhere do we feel the benefit of good design more than in our own homes and the spaces around them. We eat, sleep, work, rest and play here. In an increasingly complex and rapidly changing world, our homes represent stability and security. As more of us now work from home, the division between work and home becomes more blurred.

For thousands of years, people have designed and built their own habitats, to fit their own needs. Today, when our homes and neighbourhoods are created independently of us, they can often fail to provide the flexibility, functionality, comfort, privacy or freedom that we need, and our quality of life can suffer. And if a home fails to withstand the test of time – and of market changes – that negative impact on our lives can be prolonged.

We know what makes a good home. It should offer enough room to accommodate its occupants and their lifestyles in comfort, in a peaceful, secure, private space, and use energy efficiently. Its surroundings or neighbourhood should provide a balance between private, semi-private and public space, and offer all residents easy, unfettered access.

There is no shortage of evidence of the significant impact good housing design can have on quality of life.

Quality counts: the true impact of good design

Better places to live

Simple, affordable environmental improvements can make a more contented, secure community. On the Westwood Estate in Peterborough, for example, residents' mental health and satisfaction with their housing development were surveyed either side of an improvement programme. The differences were dramatic. Road narrowing, traffic calming, new garages and hardstandings, new landscaping and lighting were all introduced. Alleyways were blocked off to deter intruders. Properties received secure windows, porches and refurbished kitchens and bathrooms.

The improvements transformed the social atmosphere of the estate. Three years after the first survey, the boost to the mental well-being and satisfaction on the estate was put down to the physical changes and residents' perceptions of them.¹

The survey concluded: 'The research presented reminds us that environment matters – that the design of houses, developments and cities has significant and demonstrable effects on the behaviour and well-being of the people who live in them.'²

Good design and maintenance of neighbourhoods can help bring together potentially divided communities. A study of six areas of Bournville in Birmingham, where 40 per cent of housing is in the social rented sector, identified several key principles for improving the harmony of neighbourhoods with mixed tenure: a high-quality natural environment; high

architectural quality; an imaginative and coherent planning framework; a sustained estate management capacity; a socially mixed community; and community involvement in the management of the neighbourhood.³

Healthier places to live

The link between poor housing and poor health is well established. But only now has the true cost to society of poorly designed homes been quantified.

The Building Research Establishment (BRE) reported in 2010 that almost a quarter (4.8 million) of homes in England contain defects that can give rise to Category 1 hazards (measured by the Housing Health and Safety Rating System) – hazards that can lead to serious health risks such as cardio-respiratory disease, stroke, asthma and even death caused by falls, excess cold and other events. Estimates put the cost to the NHS of these hazards at £600 million per year, and the cost to individuals and society from loss of earnings, for example, at £1.5 billion per year.⁴

More than four million of these hazardous homes are owner-occupied or rented in the private sector. The BRE says that its model 'clearly demonstrates that money invested in improving poor housing could have a significant impact on improving health and reducing the financial burden on the NHS.'⁵

The social cost of poor housing is also underlined by a study by the Royal Institution of Chartered Surveyors (RICS). The RICS estimates that the UK spends up to £2 billion per year treating illnesses arising from poor homes – more than is spent by local authorities on their own housing stock.⁶

More marketable homes

According to a 2009 survey, more than three-quarters (78 per cent) of UK property agents believe good design to be either important or very important in the residential market. Almost the same number said good design had a positive effect on rental and capital values, and 89 per cent of agents claimed it had an important or very important impact on occupancy and take-up rates.⁷

Good design in action Chimney Pot Park, Salford

In the 1990s, Chimney Pot Park's rooftops featured in the opening credits of Coronation Street. But in the empty and vandalised streets below, vibrant community life had all but vanished, and by 2002 Salford City Council had earmarked the terraces for demolition.

A combination of public protest, government cash and commitment from the developer Urban Splash saved them. In just five years, Urban Splash and architects shedkm replaced the threat of demolition with the clamour of buyers queuing to secure a desirable, affordable new home. The typical price of a Chimney Pot Park property has risen from £8,000 to as much as £150,000, but with a mix of tenure the high-quality design has been enjoyed by a wide range of residents, who enthuse about the open spaces and the bright, vibrant interiors of their homes.

Photos: Morley von Sternberg



1 Halpern D (1995) *Mental health and the built environment: more than bricks and mortar?* Taylor & Francis, London
2 Ibid
3 Groves R, Middleton A, Murie A and Broughton K (2003) *Neighbourhoods that work: A study of the Bournville estate, Birmingham*, The Policy Press for the Joseph Rowntree Foundation

4 Roys M, Davidson M, Nicol S, Ormandy D and Ambrose P (2010) *The Real Cost of Poor Housing*, BRE Trust Report FB23, BRE Press
5 Ibid
6 Barrow M and Bachan R (1997) *The real cost of poor homes: footing the bill*, RICS, London, cited in CABE (2001) *The value of good design*, CABE, London

7 Survey by Spirul Research, February 2009



Good design in action Accordia, Cambridge

Replacing dilapidated prefabricated units and old government buildings, the Accordia scheme provided both good design and a high number of affordable units (30 per cent of the scheme). All properties are close to open spaces, slow speed streets and communal play areas.

In 2008, Accordia, designed by Feilden Clegg Bradley Studios with Maccleanor Lavington and Alison Brooks Architects, became the first housing scheme to win the RIBA Stirling Prize. High-density housing at its best, Accordia marked a paradigm shift in British housing. It sent a message to house builders and politicians that housing is about homes, not units: good residential design is fundamental in shaping the quality of people's lives and their attitudes to society.



Photos: Tim Crocker (top) David Grandorge (left)

Good design can help ...

... build strong communities

Well-designed neighbourhoods are where people feel safe, included and at home. They are where residents can feel a sense of social identity and civic pride, where they are encouraged to interact with their neighbours in ways that help to strengthen the community. In such places, there are, in turn, benefits to people's health, prosperity, good will, morale and self-esteem. New neighbourhoods like these, with well-designed homes, spaces and facilities, can retain and improve the appeal of an existing area.

... create spacious, flexible homes that keep their value

We all need the space to live our lives. In family homes, kitchens with the space for a table can bring family members together, over meals, homework, games or around a computer. Homes should be flexible, too, to adapt to a household's changing needs over time. Is there room for a stair lift or a downstairs bathroom, for example?

... reduce crime

The natural surveillance provided by passers-by, or by windows and balconies overlooking streets and open spaces, is enough to deter most crime and vandalism. Well-designed neighbourhoods promote this casual policing, which can work alongside more formal schemes for watching over one another's homes. Thoughtfully sited car parking and bicycle storage, as well as well-integrated refuse and recycling bins, contribute not only to a sense of order but also reduce litter, vandalism and theft. Police services award Secured by Design certificates to homes and developments whose design deters crime. It considers the materials and design of entry points such as doors and windows, the deployment of burglar alarms and video entry systems, and the natural surveillance offered by windows to open spaces.

Educational buildings, and design lessons that last a lifetime

When we talk about improving the quality of the built environment for future generations, shouldn't we start with schools?

School is not just for schoolwork: it is where many of our most important values, ideas and relationships are shaped. Likewise, the school environment is not just a backdrop for these experiences: it plays an active part in all of them. Not only that, our schools leave an indelible impression on our minds – one that we carry into adulthood – of how public buildings should be. What better way to encourage higher standards of design than to instil them in the next generation?

The numerous benefits of good design in schools and other educational buildings – and the hazards of poor design – are well established. As long ago as 1874, E R Robson, architect to the London School Board, stressed the importance of sunlight and fresh air in school: 'They are to a young child very much what they are to a flower'.⁸

Today, those classroom observations are backed up by the evidence. We know that poor air quality can

lead to drowsiness and affect concentration, and that overheating has a similar effect.

An over-reliance on electric lighting can increase the frequency of headaches, eyestrain and fatigue; lighting classrooms naturally instead not only saves energy but has also been shown to improve concentration. And good acoustics that support communication are fundamental to good academic performance and inclusive teaching spaces.

Design is no less vital in creating and equipping the range of spaces needed in successful higher education buildings: spaces that encourage informal conversations and the exchange of ideas; breakout spaces for more formal discussions held at short notice; conference rooms for team-based meetings; and social spaces where students and staff can relax or mingle with colleagues from other disciplines.

Without necessarily adding to the cost of educational buildings, we can offer young people a lesson in design that lasts a lifetime.

Quality counts: the true impact of good design

Environments that enhance learning

Design dictates the basic environmental conditions – air quality, temperature, noise level – that determine the quality of learning in a school. A major review of existing research by a team at the University of Newcastle's Centre for Learning and Teaching found strong evidence that the quality of learning can suffer if minimum standards in these variables are not achieved by a school building.⁹

We know enough about the effects of poor design on learning to make the mistakes of the past avoidable. We know that, in poorly ventilated classrooms, the build-up of carbon monoxide can lead to drowsiness among pupils,¹⁰ and that airborne bacteria exacerbate asthma.¹¹ We know that high noise levels make learning harder.¹² And we know about the benefits of natural lighting: a 1999 US study found that students with the most daylight in their classrooms progressed 20 per cent faster in maths tests and 26 per cent faster in reading tests than those with the least daylight.¹³

Happier schools

Research by PricewaterhouseCoopers reported that capital investment in school premises and IT had a measurable impact on learning,¹⁴ and that investments in improving school buildings increased staff morale, pupil motivation and effective learning time.¹⁵

Other studies have charted the rewards of good school design and planning, such as improved relationships with the local community, better recruitment and retention of staff, and easier supervision of pupils at break and lunch times to reduce truancy, bullying and vandalism. In a recent survey, the overwhelming majority of teachers (95.8 per cent) agreed that the school environment had an influence on pupil behaviour.¹⁶

Higher-quality higher education

A major study commissioned in 2003 investigated how high-quality buildings can affect recruitment, retention, behaviour and performance of higher education staff and students.¹⁷ The research was based on the opinions of staff and students at five campuses in the UK with new, high-quality buildings. The results, published in 2005, showed that around 60 per cent of students and staff believed that the design quality of their institution positively influenced their decision to work or study there and 70 per cent believed that the functions and facilities of the buildings they worked in improved the way they feel and behave. Design quality was especially important for academic staff (65 per cent) and postgraduate students (72 per cent).



Good design in action Christ's College secondary school, Guildford

The new Christ's College secondary school, designed by DSDHA and opened in 2009, replaces a failing 1960s school. The design of the new building helps to deter disruptive behaviour, reduce opportunities for bullying, reconnect the school with the local community, and instil a sense of civic pride.

The innovative 'breathing wall' system provides each classroom with sustainable heating and ventilation through a perforated brick skin.

↑
[There has been] a huge, huge change in the behaviour of the students, a huge change in the academic proclivity of the students. Our children respect this building; we have no graffiti, we have almost zero litter. The kids have risen to the challenge of the building.' Paul Riley, senior assistant principal, Christ's College secondary school

Photo: Dennis Gilbert

⁸ Robson E R (1874) *School Architecture*, John Murray, London
⁹ Higgins S, Hall E, Wall K, Woolner P and McCaughey C (2005) *The impact of school environments: a literature review*, produced for the Design Council by the University of Newcastle

¹⁰ Myhrvold A N, Olsen E and Lauridsen O (1996) 'Indoor environment in schools: Pupils' health and performance in regard to CO₂ concentrations', *Indoor Air* 1996, vol 4, pp 369–71
¹¹ Environmental Protection Agency (2000) *Indoor air quality and student performance*, EPA report number EPA 402-F-00-009, Washington DC

¹² Schneider M (2002) *Do School Facilities Affect Academic Outcomes?* National Clearinghouse for Educational Facilities
¹³ Heschong Mahone Group (1999) *Daylighting in schools: an investigation into the relationship between daylighting and human performance*, prepared for the Pacific Gas and Electric Company

¹⁴ PricewaterhouseCoopers for Department for Education and Skills, 2003
¹⁵ PricewaterhouseCoopers for Department for Education and Skills, 2001
¹⁶ 2010 Schools Environment Survey by the Teacher Support Network and the British Council for School Environments (BCSE), with the Association of Teachers and Lecturers
¹⁷ CABI (2005) *Design with distinction: The value of good building design in higher education*, CABI, London



Good design in action Sunfield, Stourbridge



At Sunfield, a residential school for children aged six to 19 with severe and complex learning difficulties, new purpose-built premises have made a dramatic difference to pupils' well-being.

GA Architects' design responded directly to the particular needs of staff and the young autistic people in their care. Soundproofing has instilled an air of calm and quiet. Radiators – potential climbing frames for some children with autism – have been replaced by underfloor heating. Curved corridors help to guide children around the building and the large number of windows allows them to play outside with more autonomy while being supervised unobtrusively.

Children are calmer, more independent and enjoying better sleep. There has been a noticeable drop in challenging behaviour, too. Living together has become a whole lot easier, for both staff and children.

Photo: GA Architects



Good design in action Bristol Brunel Academy, Bristol



At Bristol Brunel Academy, the first Building Schools for the Future school to be completed, the National Foundation for Educational Research (NFER) studied the impact on pupil behaviour before and after the new school building opened in 2007. The design, by Wilkinson Eyre Architects, emphasised the theme of communications, the school's specialism, by arranging the three storeys of educational spaces around a long central 'street', with a series of internal footbridges criss-crossing between the balconies. The project included improvements to the landscaping and playing fields to allow community use of the grounds.

The before-and-after study by NFER found that incidents of vandalism had fallen by more than 50 per cent, the number of pupils who said bullying was an issue for them was down by 23 per cent, and the number saying they felt safe at school was up 30 per cent.¹⁸



Photos: James Brittain

¹⁸ Rudd P, Reed F and Smith P (2008) *The effects of the school environment on young people's attitudes to education and learning*, NFER



Good design in action Wren Academy, Friern Barnet, London



Wren Academy, designed by Penoyre & Prasad, specialises in design and the built environment, and its revitalised premises – a mixture of refurbishment and new-build – have been designed to support the curriculum and inspire students, with a clearly expressed structure and an emphasis on materials and transparency.

Learning spaces are easily adaptable to different class sizes and teaching methods, and natural ventilation, daylighting, super-insulation, airtightness and a biomass boiler have helped achieve a BREEAM rating of 'very good'.

'I think that our students are immensely proud of the building. We invited them to bring their parents – and they did in their hundreds. That's evidence that this is something that they care about and also of their confidence and security.' Michael Whitworth, headteacher, Wren Academy

Photo: Tim Soar



Good design in action Centre for Collaborative Construction Research, Loughborough University



The shape of higher education and research changes faster than buildings can, and institutions face a continuing challenge to modify and improve their teaching and research accommodation to fit these new demands.

With academics and researchers scattered across four separate buildings in poor-quality environments, unable to interact effectively, Loughborough University's Engineering Faculty's plan to establish a Centre for Collaborative Construction Research sought to bring them all together. Swanke Hayden Connell Architects united the group by adding a curved, cellular, three-storey building to the existing block. Now, staff and students can work individually in the offices of the new extension, collaborate in the newly created open spaces of the existing building, and mix informally in the atrium in between.

'The combi-office has been particularly successful in allowing staff to work undisturbed in a study or to work and relax with others in the open areas. We see much more of each other! At the same time it has been important to give undergraduate students direct access to tutors in either private or open and informal locations.' Simon Austin, Professor of Structural Engineering, Centre for Collaborative Construction Research, Loughborough University

Photo: Andrew Puttlet

Good design can help ...

... support learning and encourage good behaviour

Well-designed schools are easy to navigate for both pupils and staff, and offer good visibility for the supervision of pupils, which can help cut down disruptive behaviour, bullying and truancy. Natural lighting, a supply of fresh air and good acoustics should be the minimum requirement for a good-quality learning environment, while using durable materials and systems can reduce vandalism and maintenance bills.

... build higher education environments with strong identities

Many of the UK's newer universities have used design to help create a strong, clear identity for themselves that can attract staff and students. It has been shown that the appearance, features and facilities of new university buildings have a strong bearing on how staff and students feel, behave and perform there.

Good design can help address the needs of a modern university department, creating spaces for private study, collaboration, formal and informal meetings, and socialising.

Healthcare buildings: a suitable case for treatment

Ever since Florence Nightingale wrote about the recuperative benefits of fresh air, daylight and views of the outside world, architecture has played a part in patient care. Hospital design doctrines have come and gone, but experience has told us what works and what doesn't, and taught us the value of including every kind of user – specialists, nursing staff, patients and public – in the planning and designing of healthcare facilities from the outset.

This kind of well-informed advanced planning leads to efficient, effective, flexible facilities in which medical staff have more time to spend on caring for patients and advising their families. It allows staff to concentrate on what they do best, and reduces stress, fatigue and the chances of mistakes. Patients in wards that are carefully planned are easier to observe and monitor, which gives patients greater reassurance. Single-occupancy rooms offer more privacy and are less prone to the kind of errors, accidents and airborne infections that can afflict larger wards.

Good, user-centred design by integrated teams of design professionals and users can give us the hospitals and healthcare facilities we all want. With sufficient upfront investment of time and resources for proper planning, the places where people recover can live longer, healthier, happier lives themselves.

Quality counts: the true impact of good design

Shorter stays for patients

There's a long history of research into therapeutic environments and their impact on patient recovery. A survey in 2004 of the literature extracted key findings,¹⁹ which included:

- patients with access to daylight and external views require less medication²⁰ and recover faster^{21 22}
- single-occupancy rooms can reduce medical errors and encourage friends and family to visit, which in turn leads to greater support and faster recovery
- patients recover faster in quieter environments, where they are able to rest and sleep more easily.²³

Noise levels also affect how stressed nursing staff feel.²⁴

There's also strong evidence that nature – whether a garden or courtyard or view from a window – does much more than provide a pleasant setting. Research shows that it can have a direct impact on reducing stress and pain and speeding up recovery.²⁵

Over 90 per cent of nurses and all directors of nursing believe that a well-designed environment is significantly linked to patient recovery rates.²⁶

Contented staff

Research looking at nurses' opinions of their working environment has clearly demonstrated the importance that health workers attach to the quality of their working environment.²⁷ Six out of seven nurses (87 per cent) believe that they could do their job better in a well-designed hospital. Three-quarters (74 per cent) say that the quality of a hospital building, its interiors and setting make a significant difference when looking for a new job. And 90 per cent of directors of nursing claim that patients behave better towards their nurses in well-designed wards and rooms.

Less hazardous hospitals

There is strong evidence that hospital-acquired infection rates are lower in single-bed rooms than in multi-bed wards: airborne transmission is reduced and there are fewer surfaces shared by patients. The chances of medication errors are less than in larger wards, too, where patient transfers can lead to mistakes.

Research suggests that making more washbasins and alcohol dispensers available in readily accessible locations has an impact on hospital-acquired infections,²⁸ and that airborne transfer of diseases to medical staff can be reduced by good ventilation systems with regularly serviced filters.²⁹

Good planning of healthcare units can cut the amount of time nurses spend walking and give them more time with patients and their families.³⁰

Good design in action Jubilee Gardens Primary Care Centre and Library, Ealing, London



The patient journey was key to the design of the Jubilee Gardens Primary Care Centre and Library, completed in January 2010. Architects Penoyre & Prasad carefully considered the approaches to the centre, the quality of the waiting spaces and the ease with which people could find their way around. The spacious, two-storey glazed entrance provides access to GP practices, treatment rooms, minor surgery facilities, audiology, health visitor and district nurse services – as well as the library.

The highly sustainable building – which achieved a NEAT (NHS Environmental Assessment Tool) rating of 'excellent' – will be able to adapt as the nature of healthcare evolves: larger rooms will allow spaces to be used for a range of potential services.

Staff have benefited from a fit-for-purpose working environment that allows them to focus on what really counts – delivering exceptional healthcare.

Photo: Nick Kane



19 CAGE/PricewaterhouseCoopers (2004) *The role of hospital design in the recruitment, retention and performance of NHS nurses in England*, Appendices, CAGE, London
20 Lawson B and Phiri M (2003) *The architectural healthcare environment and its effects on patient health outcomes*
21 Beauchemin K and Hays P (1998) 'Dying in the dark: sunshine, gender and outcomes in myocardial infarction', *Journal of the Royal Society of Medicine*, vol 91, 1998, pp 352-354
22 Beauchemin K and Hays P (1996) 'Sunny hospital rooms expedite recovery from severe and refractory depressions', *Journal of Affective Disorders* 40, 1996, pp 49-51

23 Southwell M and Wistow G (1995) 'Sleep in hospitals at night: are patients' needs being met?', *Journal of Advanced Nursing* 1995, 21, pp 1101-1109
24 Bayo M V, Garcia A M and Garcia A (1995) 'Noise levels in an urban hospital and workers' subjective responses', *Archives of Environmental Health* 50(3), pp 247-251
25 Ulrich R and Zimring C (2004) *The role of the physical environment in the hospital of the 21st century: a once-in-a-lifetime opportunity*, The Center for Health Design, CA
26 Attitudes towards hospitals, CAGE/ICM study, cited in CAGE (2003) *Radical Improvements in Hospital Design*, CAGE, London

27 Ibid
28 Ulrich R and Zimring C (2004) *The role of the physical environment in the hospital of the 21st century: a once-in-a-lifetime opportunity*, The Center for Health Design, CA
29 Menzies D, Fanning A, Yan L, Fitzgerald JM (2000) 'Hospital ventilation and risk for tuberculosis infection in Canadian health workers', *Annals of Internal Medicine*, 2000, vol 133, no 10, pp 779-789
30 Jones D, Mitchell A, Lean Enterprises Academy UK (2006) *Lean thinking for the NHS*, NHS Confederation



Good design in action The Arches Centre, Belfast

Bright, cheery colours... an airy, daylight, street-like atrium... softly curved walls and balconies... a three-storey light-based artwork... and a fully grown fig tree in the middle of it all. Not the picture of your typical district health centre, is it? The Arches Centre is one of three new healthcare centres in east Belfast, which together replace a collection of 42 smaller specialist units scattered across the area. A key aim of the Arches project was to create, by design, a healing and uplifting environment for patients and staff. Good space standards, lots of natural light, colour and texture, easy wayfinding



and high-quality materials, furnishings and fittings are all vital elements. Architects Penoyre & Prasad, together with Todd Architects, also focused on providing accommodation that was flexible and able to meet the needs of rapidly changing practice and technology.

'These buildings spell out something positive, something bright and fresh. They've been recognised as something good in Northern Ireland.' John Cole, Chief Executive, Northern Ireland Health Estates

Photo: Dennis Gilbert

Good design can help

... build healthier hospitals

Good design and planning can maximise the use of space in a building and increase the number of single-occupancy rooms in a hospital without significantly adding to the project cost. Single rooms increase privacy and encourage visitors, which can aid recovery, reduce hospital-acquired infection rates and lower the risk of medication errors. Well-designed hospitals also maximise the amount of daylight, fresh air and external views throughout a hospital, which have been shown to speed up recovery times.

... improve the lives of health workers

When a facility has been carefully planned with the input of its users, medical staff have what they need closer to hand and are able to spend more time on patient care. Wards are easier to monitor, staff stress and fatigue are reduced and the building becomes easier to navigate for visitors. Design that makes use of good-quality materials, furniture and fittings, natural lighting and views – internal and external – can lift the spirits of staff as well as patients, and help to attract and retain talented doctors, nurses and other staff.

At the new Skypad Teenage Cancer Trust Unit in Cardiff, for example, a lead nurse said: 'It's a much more relaxed and pleasant place for all of us – and that lifts everyone's morale.'

Hard-working workplaces

The days have long passed since employers and property developers could get away with office buildings that offered no more than a place to put desks. Today, three-quarters of UK GDP is generated by the largely office-dwelling service industries – and for most employees their work is done at desks.

The demand for high-quality workplaces is rising all the time and forward-thinking businesses are realising the asset value of commercial properties with higher exchange or rental values.

Good design can create offices that employees want to work in. There is comprehensive evidence of user-centred workplaces contributing to the recruitment and retention of staff, to productivity, well-being and reduced absenteeism. Simply getting elements such as workstation layouts, space allocations, air quality, acoustics and lighting right can make the difference between a hard-working office and a less productive one.

Good buildings are good business, whatever the economic climate. But workplaces can inspire, too. Innovative, engaging, flexible workplaces are more likely to encourage forward thinking and fresh ideas than anonymous, lifeless spaces. They also say a lot about the employer. Much can be read into a brand not just from the way its employees are accommodated, but also from how issues such as sustainability are addressed through its buildings.

Companies that use architecture to create buildings that add positively to the urban fabric, and can respond to social, economic and environmental changes, are making a statement about their values and also about their confidence in their own future. They are creating an inheritance for the built environment that everyone, not just the occupants, will value.

Quality counts: the true impact of good design

A more valued, more productive workforce

There is plenty of evidence that poor indoor air quality and poor thermal comfort affect productivity in the workplace. But, according to a research team that has studied office buildings extensively, there are four 'killer' variables of productivity that are directly influenced by building design and management:

- the degree of personal control for employees over blinds, windows and building services that affect their environment
- responsiveness of facilities managers to staff discomfort
- building depth, which tends to reduce productivity and satisfaction as it increases
- workgroup size: smaller, more integrated groups are perceived to be more productive.³¹

In leading businesses, the procurement of new bespoke headquarters is frequently seen as part of a wider process to transform how the company does business. In a study of 10 top companies in 2004, the most highly rated motivation was to improve employee satisfaction, with businesses aiming to boost profitability by reducing hierarchy and encouraging creativity and communication.³²

³¹ Leaman A and Bordass B 'Productivity in buildings: the "killer" variables', in Clements-Croome D (editor) (2000) *Creating the productive workplace*, E & FN Spon, London
³² Rouse J (2004) 'Measuring value or only cost: the need for new valuation methods', in Macmillan S (2004) *Designing Better Buildings*, Spon Press, London, pp 55-71

In 2003, a *Management Today* survey reported that 94 per cent of office employees regard the quality of their workplace as an indication of how highly they are valued by their employer.³³ Only 39 per cent believed their offices had been designed with users in mind. Other extensive research brought together in 2005 provides evidence that well-designed workplaces support the recruitment and retention of staff, reduce absenteeism, improve profitability and project a positive corporate image.³⁴

Profitable premises

Good design makes good business sense. Studies have correlated high-quality design with higher returns on investment. Research by the Property Council of Australia³⁵ for example, found that all eight buildings in a group chosen by a design selection panel brought in higher-than-average returns.

Property owners are enjoying a handsome payback from ‘green’ architecture, too. Recent evidence based on US data shows that, even in difficult economic times, more sustainable office buildings can offer economic benefits to investors, including higher rents and lower risk premiums. The study found that green office buildings performed better during the economic downturn of 2008 and 2009 than comparable non-green high-quality property investments. Rents and occupancy rates were higher for properties with energy-efficiency measures built in.³⁶

33 CABA (2005) *The impact of office design on business performance*, CABA, London
34 Ibid
35 Property Council of Australia (1999) *The Design Dividend*, PCA, Canberra
36 Eichholtz P, Kok N and Quigley J (2010) *Sustainability and the dynamics of green buildings: new evidence on the financial performance of green office buildings in the USA*, RICS, London



Good design in action
Far Gosford Street, Coventry

Not everything was lost in Coventry in the bombing raids of 1940. Some shreds of the historic city survived the destruction, including Far Gosford Street, which is undergoing transformation into an industrious, creative neighbourhood with a mix of commercial properties. Stripping away hoardings and modern façades, masterplanners PCPT Architects discovered buildings from the 16th century to the 1950s. The restoration of these for occupation by small businesses such as retailers and cafés will be followed by the addition of new-build offices, social housing and student accommodation. Close to both the city centre and Coventry University, the new, pedestrian-friendly ‘FarGo’ will offer a vibrant business district capable of attracting high-quality small business tenants.

Rendered image (top): PCPT Architects
Photo (above): Andy Moore



Good design in action
30 Finsbury Square, London

Skilled architects can create external forms and façades that soften the impact of large office buildings on sensitive city centre sites, and in so doing help secure all-important planning consent.

The Eric Parry Architects design for 30 Finsbury Square won consent for developer Scottish Widows plc in a central London conservation area by reconciling the demand for large open-plan office floors with that for a building envelope that didn’t overpower its surroundings.

The flexible, column-free floors and light-filled central atrium provide an enviable workplace, while the façade offers an open and transparent face to Finsbury Square with floor-to-ceiling recessed windows of varying size.



Photos: Hélène Binet

Good design can help...

... boost productivity

There are many physical and environmental influences on the way people work in offices – and it takes a good designer to get them all working in a building’s favour. The factors to think about include: the control of air quality, temperature, humidity, lighting, glare and acoustics; space planning, from individual workstations to shared spaces to circulation and access; and the creation of flexible work spaces that can accommodate a wide range of working patterns and meetings.

... turn an overhead into an asset

Commercial buildings with perceived architectural merit are worth more on the balance sheet. Not only that, they can add value to the brand and project a positive corporate image – just look at how the architecture and environmental engineering of the ‘Gherkin’ have brought Swiss Re to popular attention.

Public space: a place for us all

The quality of public space in our cities and towns is more important than ever – to both our individual well-being and that of our communities.

How our streets, squares, parks and open spaces are planned and designed has a direct impact on our feelings of identity, belonging and personal safety. They define our experience of an urban environment just as much as – possibly more than – the buildings in it. They influence strongly how we feel about a neighbourhood or district, and whether we want to spend more time there, or even live or work there. For that reason, they can make or break local economies.

Good planning and design bring out the character of a neighbourhood and strengthen its sense of identity. They create a sustainable mix of uses – homes, shops, businesses and civic facilities – that encourages walking, cycling and social interaction, which can also be a powerful deterrent of crime and unsociable behaviour.

Quality counts: the true impact of good design

Healthy communities

The whole community feels the benefit of a commitment to good green space. Greater biodiversity, better air quality and a healthier population are just some of the rewards.³⁷ Research reported in *The Lancet* confirmed that access to green space is beneficial to people's health, regardless of their economic circumstances, and that how well green space is used is directly related to its quality.³⁸ Evidence from deprived areas with higher levels of physical inactivity among residents showed that 'investing in the quality of parks and green spaces is an important way to tackle inequalities in health and well-being'.³⁹

Research carried out in 2002 revealed that people felt that the quality of public space and the built environment had a direct impact on their lives and the way they feel.⁴⁰

Sustainable transport

When a district or town or city is able to connect a network of well-designed, well-managed public spaces, residents are encouraged to get around under their own steam. In Copenhagen, for example, the creation of such a network, together with traffic calming measures, led to a 65 per cent rise in bicycle use over 25 years.⁴¹

Desirable properties

In 2005 a detailed study of eight recently refurbished parks around the country revealed clear evidence of a premium in the property market for homes that overlooked or were close to good-quality parks, gardens or squares.⁴² The premium on properties surveyed ranged from zero to 34 per cent when close to a park and from 3 to 34 per cent when overlooking a park – and averaged around 5 per cent.



Good design in action George Street Quarter, St Helens

The area of St Helens richest in historic buildings was, until recently, one of its most neglected and unwelcoming. Its regeneration has included major improvements to the public realm, such as new pedestrian surfacing, street furniture, signage and lighting, as well as new road alignments and parking arrangements. A derelict park and former burial ground have been remodelled as new green spaces. The public space improvements, designed by Taylor Young, together with those to shop fronts, the train station and historic buildings, have helped to reduce crime, increase rental values, revive the area's housing market and give a measurable boost to the performance of local businesses.

Photos: Stuart Rayner Photography



Good design in action Liverpool ONE

The creation of an entirely new quarter in Liverpool's city centre involved a modernising approach to urban design that retained a deep sensitivity to ideas of place, identity and scale, knitting the development into the existing street pattern and connecting it with the waterfront. Just as important to its success as the retail space, bars, restaurants, cinema and 600 apartments are the rehabilitated streets and spaces, which include a remodelled five-acre park overlooked by a new hotel.

Masterplanner BDP also provided the landscape designers to rethink the public realm, and a team to design the lighting across the scheme, which has unified and revitalised the city and helped to create 3,500 new jobs. Liverpool ONE welcomed over 24 million visitors in 2010, and the number continues to grow.

Photo: David Thrower

Good design can help... ...revitalise run-down neighbourhoods

The way urban design can give new life to neighbourhoods and communities is by giving people more reasons to go there. Design that reinforces an area's distinctiveness, improves connections, encourages a mix of uses and creates inviting public spaces can give local people more choice, make their lives more convenient, attract visitors and support local businesses.

Public spaces can be transformed by design that uses robust materials for hard and soft landscaping, and signage and street furniture that are attractive, durable and serviceable, and by regular cleaning and maintenance.

37 CABI (2004) *The value of public space*, CABI, London
38 Mitchell R and Popham F (2008) 'Effect of exposure to natural environment on health inequalities: an observational population study', *The Lancet*, vol 372
39 CABI (2010) *Urban green nation: building the evidence base*, CABI, London

40 CABI (2002) *Streets of shame: summary of findings from Public attitudes to Architecture and the Built Environment*, CABI, London
41 Gehl J and Gemzoe L (1996) *Public spaces, public life*, Danish Architectural Press, Copenhagen
42 CABI (2005) *Does money grow on trees?* CABI, London

The ingredients
of good design

... and how
to get it

- delivering what the client has asked for
- inclusiveness and accessibility for all
- fitness for purpose, without expensive add-ons
- sustainability, integrated into the fabric and use of the building
- low-as-possible running and maintenance costs
- delivering a return on investment
- having a positive impact on the environment
- completion on-time and on-budget
- providing the flexibility for a future change of use
- cost-effectiveness: in the long term, good design always costs less than bad design
- delivering value over the whole life of the building

Good design, above all, is about delivering to the client what they want. Which is why the process of establishing exactly what that is is the most important of the entire design phase. Every good building starts with a good brief.

So what makes a good brief? It should capture all the client's needs from a building, and reflect all their aspirations for it. It should describe the function of the finished project and how it will be used, state expectations and special requirements, indicate a design direction, establish a single point of contact on the client's side, and set a realistic timeframe and budget. And it needs to be clear and unambiguous so that it can act as a roadmap for the project and guide the different groups involved in delivering it.

It's a tall order – one that an architect will be happy to help with. In jointly formulating the brief over a number of discussions, the client and their architect can also establish, at the outset, the dialogue and understanding that will be vital to the final success of the project.

'We were involved from an early stage. The design process was a genuine partnership. There has been an excellent exchange of ideas. It has been fascinating to see the education and design approaches brought together – the combined approaches of the architect and the teacher. We have got the building that we needed.' Michael Whitworth, headteacher, Wren Academy

But even before the brief – when first beginning to think about a project – a client may find that they need guidance in the right direction. This is where a Client Adviser accredited by the RIBA can help. RIBA Client Advisers are experienced construction professionals trained to give independent advice on how best to maximise quality and value. Their input can be invaluable when the project gets off the ground, helping it run smoothly and efficiently and achieving the best value.

Good design in action

Skypad: Teenage Cancer Trust Unit, Cardiff

Skypad, a Teenage Cancer Trust Unit, is a good demonstration of the value of thorough upfront thinking and discussion between client and design team. The young patients themselves, their families and friends all worked closely with the Trust, specialist doctors and nurses and ORMS Architecture Design to create a place that meets their needs, both clinical and non-clinical.

A range of rooms and spaces makes sure patients have access to privacy and different forms of relaxation whenever they need it. These include a chill-out pod, an outside terrace, a parents' room and a 'den' between each three-bed bay, where patients can come together to read, study, chat or go online. For patients needing the most sensitive care there are single-bed bays with ensuite bathrooms, music, study stations, TVs and seating for parents.

One 15-year-old patient said: 'When I was on the regular ward, time really dragged. Now, while I wouldn't say I look forward to going to hospital, at least time goes quickly. I meet other people who are in the same boat as me and we play pool and hang out. It's like home – except more fun!'

And another: 'It doesn't feel like being in hospital. It makes having treatment a lot easier as I'm not focusing on that – there's other things happening.'

Photos: James Brittain

