

ECONOMIC BULLETIN



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The Iraqi War – what impact on the UK economy?

It is becoming more apparent just how crucial, both economically and politically, this year may be for the UK. Recent events have been dominated by the US-led attack on Iraq in which the UK is playing a major role. This has all managed to detract the glare of the public away from the future of the economy and, at the same time, silence the debate on the UK joining the European single currency.

Throughout 2002 the UK stood out against the other major European economies. Whilst Germany appeared to stagnate, the UK – supported by soaring house prices and high levels of consumer spending – looked to be at least stable. However, as forecasted, the Bank of England's Monetary Policy Committee cut interest rates to 3.75%, the lowest for 48 years. This could be a sign of the Bank attempting to bolster an economy in danger of stagnation. The stock market has experienced one of their worst periods and consumer confidence has dropped dramatically since the turn of the year. House prices have been rising at such a rate over the past 18 months that they may now have reached a threshold in terms of the amount buyers are willing, and able, to pay for a property. The recent falls in the stock market and the erosion of the high consumer spending levels that helped to sustain the UK economy

throughout 2002 could well be symptoms of a loss of investor and consumer confidence brought on by the Iraqi war. Forecasts expect a recovery in 2003 to 2.1% growth with a similar level of expansion at 2.4% in 2004.

The Government's unswerving support for action in the Middle East has led to political tensions both domestically and internationally. The dominant members of the eurozone – France and Germany – have voiced their objections to a war not backed by the United Nations. This has served to further distance the UK from the 12-nation bloc that has adopted the Euro and the Prime Minister has set about forging a relationship with the Bush administration akin to the Thatcher-Reagan era of the 1980s. The polarisation of the UK and the 'old European nations' at opposite ends of the Iraqi question reinforces the view that the UK will not be joining the single currency within the next 12 months. The pro-Euro British Government is extremely unlikely to call the promised referendum on the subject while public attention is being focused on events in the Middle East. Furthermore, the poor performance of the major eurozone economies in 2002 may have left doubt in the mind of those undecided about which route would actually be best for the wellbeing of the country.

The belief is that there will not be a referendum until the Iraq situation is entirely resolved and the eurozone economy begins a sustained recovery.

The construction sector has posted a strong showing in 2002 with growth of 6.5%. Public sector spending continues to fuel this expansion in output through attempts by the Government to fulfil election pledges on improving public services especially transport, health and education. Furthermore, the public housing sector is likely to sustain its growth through the provision of affordable housing for key workers in house price hotspots.

The house price boom and reported shortages have been a major contributing factor to the strength of the private housing sector although this is likely to experience a slow down in growth over the next two years as prices stabilise.

The commercial sector looks set to follow a similar model as weak company profits begin to erode the office market and the prevailing belief is that the sector will contract over the next two years. Yet again the industrial sector has under-achieved compared to other industry components and as the only sector to experience a fall in output over the course of a year, the future continues to look ominous.

Our forecast shows that tender prices will remain above the level of retail inflation throughout the survey period, although tender profit margins are expected to start cooling as work uncertainty materialises. Retail inflation is likely to rise in 2003 before dropping marginally in 2004. Material prices, closely linked to the general trend of retail inflation, are unlikely to change over the forecast period. Table 1 shows our forecasts for 2003 and 2004.

Table 1 Average Annual Inflation %

Index Name	2002	2003	2004
All-in Tender Price Index	9.10	6.10	4.00
Building Cost Index	5.70	5.20	2.70
Construction Labour	6.50	7.70	5.50
Construction Materials	1.90	2.60	2.40
RPI	1.60	3.25	2.80



A view from the chair

by Guy Leonard, Managing Director

A revival in the global economy

The arrival of the new millennium has, so far, not delivered all that was hoped from it. The initial devaluation in technology stocks, followed by the downturn in the wider markets, the globalisation of business markets generally and the overall destabilising effects of the “war on terrorism” have led the world economy into possibly its worst economic period since the end of the Second World War.

However, despite the dismal recent past and remaining future uncertainties, there is cause for some optimism on the horizon. Indications are that growth in the global economy is likely to accelerate over the next three years. From an estimated 1.8% rise in 2002 we believe that a 2.2% growth will be achieved this year rising to 3% in each of the following two years. This overview masks regional disparities and we forecast that the rate of recovery will differ significantly across the geographic regions of the world.

North America, home to the world's largest economy in the USA, once again began to look strong in 2002, achieving a 2.5% rise after the dismal previous year when growth reached just 0.3%. The belief is that the North American economy will continue to grow at 2.5% in 2003, but returning confidence in the US will facilitate a 3.3% increase in GDP in 2004. This is then expected to cool slightly in 2005 to a level of 3.1%.

The major characteristic of Western Europe during the forecast period is likely to be one of wide variance in the individual States' performances. As a whole the Western European economy grew by just 1% in 2002 and despite the continual weakness of the older more established economies, this is expected to accelerate to 1.4% in 2003, driven for the most part by the young dynamic economies such as Ireland and Greece. The slow rise of the growth rate will probably persist throughout the forecast period reaching 2.2% in 2004 and 2.3% in 2005. Domestically, the UK's economy is expected to experience a higher growth rate of 2.1% this year with a further rise to 2.4% anticipated for the following year.

One of the few regions to continue posting strong growth figures, despite the problems being encountered by others, was Eastern Europe. Although the growth rate slowed in 2002 to 3.9%, from 4.4% the previous year, forecasts indicate that there will be resurgence in the final two years at 4.3% in 2004 and 4.5% in 2005.

In contrast South America has had a torrid time over the past twelve months. Economic free-fall in Argentina, stalling growth in Brazil and the perilous political situations in Colombia and Venezuela have seen investors extricating their capital from the region. However, there is some hope for the future, dependent on recoveries in the US and EU, and strengthening of export

markets could see GDP growth reach 1.8% this year. Further expansion of their markets may lead to growth figures of 3% and 3.4% being recorded for 2004 and 2005 respectively.

The Asia-Pacific economy suffered a huge downturn in the late 1990s and has since been in a state of continuous but fragile recovery. Most notably, the traditionally high performance Japanese economy is recovering from its third recession in a decade. This time it is countries with the huge domestic markets that are paving the road to economic growth. China, India, Korea and Vietnam have experienced a degree of insulation from world economic events through strong domestic demand and this is likely to remain for the duration of the forecast period. China in particular has seen foreign investment in their economy leap in recent years and this is expected to continue. As a whole, the Asia-Pacific region is likely to attain a growth level of 2.5% in 2003 with further accelerations to 3.2% in 2004 and 3.3% in 2005.

Sub-Saharan Africa, as a whole, has seen steady growth over the last three years, although this tends to skate over the inherent volatility of the region. South Africa, traditionally the most stable of the Sub-Saharan economies, did experience a slackening of its export markets but this was offset by a continuation of solid domestic demand. However, the South

Africans are feeling the effects of the crisis involving neighbouring Zimbabwe. As the major export markets improve, especially in the US and EU, it is thought the region's economic growth will pick up speed reaching 3% this year with an even better 3.7% expected in 2004.

When it comes to uncertainty about the future, no other region comes close to that faced by the Middle East and North Africa. With the war on Iraq, it is no surprise that forecasts for the world's major oil producing region are less than impressive. An estimated 1.4% rise in GDP was achieved in 2002 obviously hampered by the current geo-political factors affecting the region. The view for this year and 2004, assuming that the Iraq situation will be resolved in the first half of 2003, is for the region to stage a recovery in the latter half, achieving a growth rate of 2.9%, followed by much stronger growth of 4% in 2004.

Despite the continued uncertainties facing the world over the next 6–12 months, the majority of indicators are pointing to a revival of the global economy towards the latter part of 2003. We believe that there will be a resurgence in fortunes around the world during 2004 and into subsequent years.



Commodity analysis – Steel

The global economic recovery, which was initially anticipated to start in 2002, showed little of its potential and predominantly remained fragile. Metals commodity prices showed some signs of impact throughout 2002, however the subdued recovery did not impact on most commodity prices as anticipated.

Steel has been one of the more widely publicised commodities over the last two years. In March 2001 the US imposed steel tariffs of up to 30% on imports for three years affecting many construction related products. The tariffs were called for by US steel manufacturers who were complaining of cheaper imported steel disrupting the US production market and forcing prices down. The steel tariffs have been opposed by most, if not all, steel producing nations and a fear of an all-out trade war looms over the World Trade Organisation (WTO). Many American steel using companies have also recently begun to voice their concerns over high steel prices, with some manufacturing companies claiming price rises of between 20-50%. This could result in long-term job losses, as manufacturers look overseas to purchase steel at lower prices.

US trade representatives, who have come under more and more pressure to resolve this problem, have recently begun to consider requests for reliefs from the tariffs on certain steel products and will release a final decision on any new exclusions in March 2003. Some market experts have suggested that any ease in the tariffs will only be moderate as recent declines in spot steel prices indicate that the US steel market is stabilising.

Despite the US tariffs, global crude steel production has increased by 11.7% since 2001. Figures hit a record high in 2002, with production in December the highest ever recorded.

Conversely, production in the EU dropped by 1.2 million tons in the latter stages of 2002. However, results indicate an 8.3% rise over

late-2001 figures. In the UK, output has continued to decrease, dropping by 1.9% as compared to December 2001. Over the course of 2002, France and Germany both increased their output, by 5.4% and 0.4% respectively. Italy, however, decreased production by 1.9%.

Crude steel output in the other European countries continued to increase, reaching 4.1 million tons in December 2002, a rise of 26.8% over December 2001 and a 121,000 ton increase over November's results. Turkey's production rose by 33.7% from 2001 to 2002. The entire region increased steel output by 4.7% over 2002.

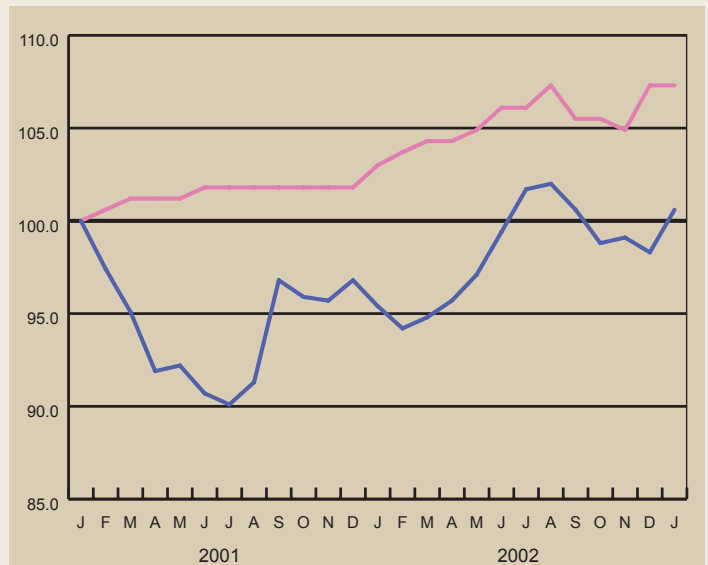
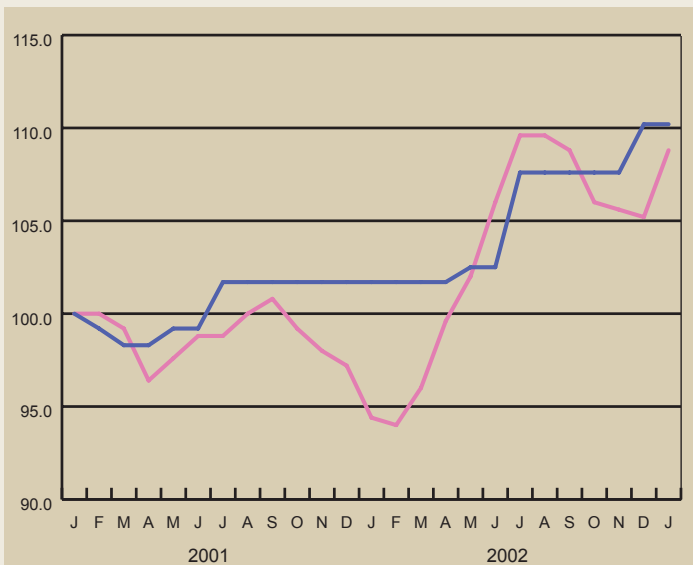
The Confederation of Independent States, as a region, increased output by 1.8%. South American steel production has risen 10.6% since December 2001. Year to date figures show a 10.8% increase for Brazil and a 9.1% rise for the region as a whole.

Production in Asia reached 34 million tons in December 2002, an annual increase of 9.8%. China attributed 16.6 million tons to the total figure, and its production increased by 11.3% as compared to December 2001 figures. The entire region increased by 11.6% from 2001 to 2002.

Elsewhere around the globe, the Middle East witnessed an increase in production of 8.7%. Output for the entire region increased by 6.1%, as compared to 2001 figures. Production in Africa rose by 1.9% as compared to December 2001, totalling 1.2 million tons. South African output also rose by 3.1% annually which equates to over 780,000 tons. Finally, Oceania figures showed an increase of 4.8% as compared to 2001 figures.

The following two charts are included to further display the relationship between international commodity trading prices and UK construction steel components.

Relationship between International Commodity Trading Price and UK Cost Index



— International Commodity Trading Price for Steel Bar
— UK DTI Steel Reinforcement Cost Index

— International Commodity Trading Price for Medium Sections & Beams
— UK DTI Structural Steel Cost Index

Spotlight on China

A Booming market

Area: 9.6 million km²

Population: 1.27 billion (estimated in 2001)

Official Language: Chinese

GDP per capita: US\$930 (2001)

Exchange rate: 1 GBP £=13.08 RMB Yuan;

US\$1=8.28 RMB Yuan (Jan 2003)

Macroeconomic overview

China's path-breaking initiatives, which began in the late 70s, are leading to a total transformation of the economy. Its impressive accomplishments over this period are capped by near double-digit growth and, as a consequence, the uplifting of hundreds of millions of people out of absolute poverty. China has, in fact, made the largest single contribution to global poverty reduction of any country in the last 20 years.

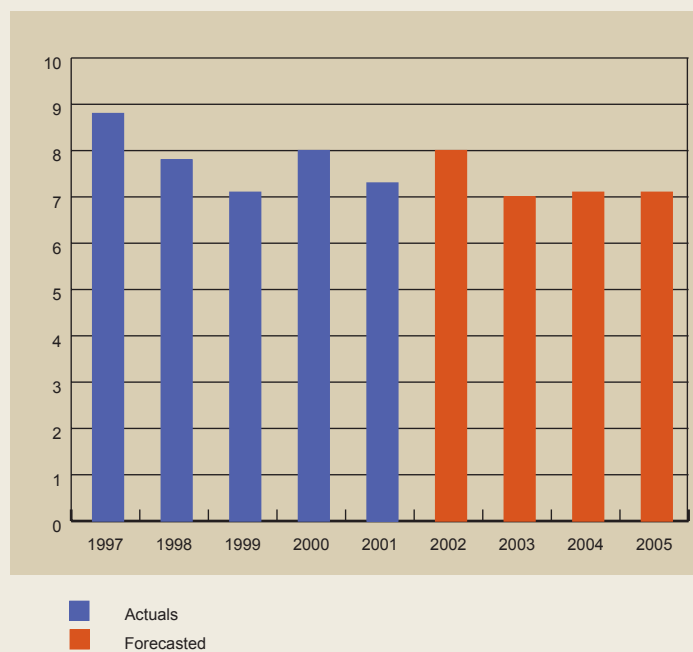
Over the past five years, external demand for China's output has been affected by the shocks of the Asian financial crisis (1997-98) and the global economic slowdown (2001). In addition, the increasing pace of corporate reform as well as weak rural income put downward pressure on domestic consumption and investment. However, the economy managed to maintain an average growth rate of 7.8% over the period 1997-2001.

Expansionary fiscal policy, especially an increase in government infrastructure spending, continued in 2002. The government has also raised a series of substantial approaches to stimulate the economy. By raising civil servants' pay from 1 July 2002, the fourth hike after those in 1999 and 2000, the measures have contributed to maintaining growth in domestic demand. Monetary policy and interest rate cuts in successive steps have also been broadly stimulating throughout the past five years. By October 2002, it was clear that China's economy had regained its growth momentum. This was due to the combination of an increase in external demand resulting from the moderate recovery in the global economy and expanding Foreign Direct Investment (FDI), as well as the effect of the domestic stimulating measures. China attracted a record US\$52.7bn (£33.7bn) in FDI last year, surpassing the US to become the world's number one destination for investment inflows.

Economic trends

China's GDP growth accelerated from 7.3% in 2001 to 7.6%, 7.8% and 7.9% in the first three quarters of 2002. Real GDP is estimated to grow by 8% in 2002 supported by both domestic demand and faster export growth. Industry was the key engine of growth, with output increasing from 8.7% in 2001 to reach 10% in the first three quarters. Manufacturing output increased from 9.9% in 2001 to 12.2%. Indicative of the FDI and export driven growth, output of foreign funded enterprises rose by 12.7% in the first nine months. The services sector, which had slowed from 7.4% in 2001 to 6.2% in 2002 Q1, turned around to grow robustly by 7.0% in Q2 and 6.6% in Q3. On the other hand, growth in agriculture, which had increased from 2.8% in 2001 to 3.3% in 2002 Q1, fell to 1.9% in Q2.

China: Real GDP Growth %



In line with the government's focus on the less developed regions, investment growth in capital construction in the first-half was particularly strong in Gansu, Guizhou, Hunan, Jiangxi, Inner Mongolia and Shanxi, rising by 25-50%, compared to the national average of 23.6%. Property investment, which rose 33% in the first-half, accounted for about a quarter of total fixed asset investment. Property sales reached about 7.5% of GDP. There was also significant linkage to the financial sector through loans to the construction sector, property developers and households. RMB Yuan 150 billion (£11.54 billion) new bonds have been issued in 2002 to finance infrastructure projects, technology upgrades and development of the central and western regions. Given the continuing strong domestic demand and exports growth, as well as the country's commitments to the WTO, China is expected to retain its sustainable economic growth trends.

Strategy of development

Nevertheless, substantial challenges remain in China. Over 200 million Chinese, many in remote and resource-poor areas in the western and interior regions, still live on less than US\$1 a day, often without access to clean water, arable land, or adequate health and education services.

China is pursuing policies to meet these challenges through its 10th Five-year Plan (2001-2005), which aims in part at economic growth, restructuring and reform. The spread of market forces is being encouraged. Building the legal, social, human, physical and institutional infrastructure needed to spur private investment and rapid growth is supported. Essential to its development strategy, China continues to go forward for its integration with the world economy, building on its success in gaining WTO membership. The government investment, primarily in infrastructure throughout the western region, where per capita income is less than half of those of east coastal provinces, has been stepped-up with this strategy. Human capital development, environmental protection and an improved investment climate – with flexible markets, basic physical infrastructure, and a social protection system – have also been addressed as the key issues to maintain the economic growth trends.

The government has also introduced tariff-free and VAT-exemption imports of capital equipment for projects within the hi-tech and priority sectors such as energy, agriculture, transport, infrastructure, as well as in the pillar industries. These moves are targeted to attract high-quality overseas investment, introduce high technologies and know-how to rationalise the country's industrial structure.

Construction sector

China is in the midst of its building boom which began prior to Beijing being awarded the 2008 Olympic Games. The construction sector has contributed on average nearly 7% of GDP since 1997. With its new accession to the World Trade Organisation (WTO), there is even more good news to the world's largest market as well as potential investors. Barriers to foreign architectural, engineering, surveying and other construction related firms are coming down, as are restraints on foreign ownerships of office buildings, industrial sites and hotels. In the past decade, the Chinese GDP on average increased at an astonishing 8% per annum. In 2001 the construction sector added value reached RMB 646.2 billion Yuan (£49.7 billion), 7.4% higher than in 2000.

Non-residential construction is forecast to grow 13% annually for the remainder of this decade and beyond despite worldwide economic recession since 2001.

A glimpse of large projects

In terms of project size and strategic plans announced by Chinese governments, nothing rivals the series of forthcoming projects in China. The US\$12 billion (£8 billion) deep-water port on Yanshan islands, announced by Shanghai officials last year, will be completed in 2022, followed by a construction agenda to build a new town in the surrounding area. Shanghai, China's commercial capital, has also won a hard-fought competition to host the 2010 Expo, a victory which complements the choice of Beijing to host the Olympic Games two years earlier. The city estimates it will directly invest US\$3 billion (£1.9 billion) in the site, with spin-offs for other businesses, such as telecommunications and related construction projects worth anything from US\$15 to US\$30 billion (£10 billion to £20 billion), according to city government documents.

Undertaking the largest Olympic construction programme in its history, China plans to build 22 new competition venues and an Olympic village by 2007, which will contain stadia, shooting ranges, water sports centres and other facilities. In addition, a US\$22 billion (£14.7 billion) budget in infrastructure improvement is also planned. Outside Beijing, additional Olympic construction is planned in Shanghai, Tianjin, Qingdao and Shenyang. China is expected to dominate the world construction economy for the foreseeable future.

Franklin + Andrews has recently published a Little Black Book on construction costs in China. This unique publication provides high level perspective covering physical building cost data as well as building services costs in the context of the present economic status of China. Copies of this free publication can be obtained by e-mailing michelle.swales@franklinandrews.com

Table 1 Major Economic Indicators

Sustainable Solution	1997	1998	1999	2000	2001	2002E
Real GDP growth (% annual)	8.8	7.8	7.1	8.0	7.3	8.0
GDP (US\$bn)	909.5	954.0	999.6	1,080.6	1,179.6	1,288.2
Current account balance (US\$m)	36,963	31,472	21,115	20,519	20,207	12,747
Current account balance (%GDP)	4.1	3.3	2.1	1.9	1.7	1
Goods & services exports (%GDP)	22.8	21.8	22	25.4	25.7	26.2
Inflation (% annual change)	2.8	-0.8	-1.3	0.4	0.7	-0.8
Unemployment rate (%)	3.1	3.1	3.1	3.1	3.6	4.8

(Source: National Bureau of Statistics of China, World Bank, Asian Development Bank, 2001)

E=estimated



Sustainable Construction

Just another 'buzz phrase'?

The roots of sustainable development can be traced back to the 1987 United Nations World Commission where the following definition was formulated:

*"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."*¹

Sustainable development provides a framework within which economic, social and environmental systems operate and interact. Within this framework the construction industry has a vital role to play in 'sustainable construction'.

As a linch-pin of the economy, construction in the UK accounts for approximately 8% of GDP with a total annual output of £58bn employing 1.4 million workers. Between 250–300 million tonnes of materials are quarried each year to supply the construction industry with aggregates, cement and bricks. However, 72 million tonnes of waste is generated annually; a 17% proportion of the total for the UK, and approximately 50% of energy use occurs in buildings, the vast majority of which is utilised in an operational capacity, for example heating, lighting and other power functions. With consumption at these levels, efficient management of all aspects of the construction process – from the earliest feasibility studies to the demolition of the product, – needs to be implemented to achieve a fully sustainable construction industry.

Sustainable construction has been viewed by some in the construction industry with cynicism believing it to be the latest 'buzz phrase' The belief amongst the cynics is that sooner or later it will be usurped by something new. Prevalence of this view can be attributed to the short life cycle which many concepts that hit the industry headlines seem to follow. Sustainable construction, however, is fundamentally different.

A number of factors from outside the construction industry may act as the driving force behind the continuing prominence of sustainable construction. Increasing public awareness of, and commitment to, the issues encapsulated by sustainability has led companies to realise that it may in fact be advantageous to their business to actively pursue these principles, and investors are now becoming more selective in the organisations they lend their financial support to. A reputation built upon social and environmental responsibility can be a lucrative tool, and we are now seeing more and more clients looking for construction solutions to reinforce their commitment in these areas. Add to this increasing legislation brought in by central government such as the Building Regulations Part L, and it begins to become apparent that the drive to sustainability is increasing in momentum. Those forward looking companies within the industry which recognise the potential of sustainable construction will see the benefits in the years to come – those who do not will find themselves outpaced and unable to compete.

The key aims of sustainable construction are the minimisation of greenhouse gas emissions, energy consumption and water usage.

The route to achieving these aims is paved with many possible solutions. An indicative selection of these may include:

- Minimising heat loss through the walls, floors, roof and windows of a building.
- Designing buildings with a high thermal mass to aid heating and cooling.
- Avoiding deep plan buildings that utilise artificial ventilation and lighting systems.
- Using atria and stairwells for stack effect natural ventilation.
- Orientating buildings and providing solar panels to take advantage of the sun's natural and renewable energy.
- Designing façades to provide the appropriate natural shading.
- Incorporating green roofs into a building's design as a way of providing extra insulation against extreme temperature, and limiting run-off in periods of heavy rain thereby reducing the pressure on drainage systems.
- Utilising recycling systems for rainwater and grey water.
- Using local materials.
- Using timber from sustainable sources and avoiding tropical hardwoods.
- Specifying low energy lighting.
- Installing intelligent energy management systems.
- Choosing natural above synthetic materials where possible.
- Procuring materials with low embodied energy and free of or low in toxins.

A major barrier to the adoption of materials or systems that are classified as 'sustainable' is the perception of increased capital costs with potential benefits being either minimal or non-financial. However, there are more long-term benefits that can be attained by the client who specifically commissions a sustainable building such as reducing the operational costs of the facility through the installation of efficient building services systems.

¹ World Commission on Environment and Development (1987) *Our Common Future*. WCED

The range of sustainable solutions to environmental design problems is formidable. In this article we look at the options both direct and indirect, and highlight the potential financial benefits.

Conserving energy can be achieved through two means; firstly by utilising renewable sources of energy and, secondly, by reducing consumption through improved efficiency.

Arguably the simplest source of renewable energy to use in supplying a facility with power would be solar. Contrary to popular belief, solar energy is a viable option in the UK, each square metre of south facing roof is exposed to 1000 kwh per year and, as technological advances continue to improve the efficiency of the collection systems, the frequency of solar power usage is also likely to increase. Modern solar panels are believed to have an average useful life of 20 years and could last as long as 30 – 40 years with a low level of maintenance. Up to 70% of a household's hot water supplies can be heated via solar means resulting in large financial savings.

Reducing energy consumption is best achieved by eliminating the waste associated with inefficient building systems that currently account for approximately 45% of total energy consumption in the UK. The call for more sustainable uses of energy in buildings has led to the development of 'intelligent' control systems to combat wastage.

Lighting efficiency can be improved by the introduction of intelligent control systems that operate in three ways – by a time operated system, by an occupancy sensor, or by a natural light sensor. Time controls switch lighting on and off at preset times. Occupancy sensors only allow lighting to be on when a room/zone is inhabited. Light sensors detect the amount of natural light available in a particular zone and control the switching of the artificial lighting accordingly. The combination of a light sensor control system and an intelligent luminaire can allow artificial lights to be dimmed or raised automatically as the natural light levels vary through the course of a day. Savings of 35-45% have been achieved by employing a control system akin to the types mentioned above.

Intelligent heating control systems can be used to deliver close temperature control where the heat of the building must remain within a specified temperature range within +/- 0.3 degrees. As well as monitoring the rate of temperature change within a facility to a tenth of a degree centigrade, an intelligent system can compensate for exterior variables, such as solar gain or wind-chill that cause deviations in temperature. Indications are that intelligent heating control systems can facilitate savings of 10-20%.

However, it is not only energy that we should conserve – water resources are equally precious. In the UK we use 150 litres of potable water every day, the majority of which passes through building systems. A possible solution to reducing the amount of water usage would be the introduction of 'grey water' recycling systems. In essence this recycles water that has already been used for one purpose, for instance in wash hand basins, and utilises it again for a more noxious use, eg flushing of toilets. Estimates suggest that grey water recycling system installed into a home can reduce water usage by up to 14%. Other ways in which to reduce water consumption include installing efficient taps and showerheads, and dual low flush WCs instead of the standard single flush system. By utilising all the above water conservation measures savings of 20% can be attained.

The table below shows a comparison of the capital cost and the potential savings of the various sustainable solutions outlined above. The costs are based on the assumption of installation to a typical three-bedroom semi detached house of 125m² gross floor area.

Sustainable Solution	Capital Cost	Potential Savings on Running Costs
Solar power hot water supply	£2,134	70%
Intelligent lighting system	£1,120	35 - 45%
Intelligent heating system	£978	10 - 20%
Grey water recycling	£1,324	14%
Efficient taps	£50 - 100	3%
Efficient shower heads	£50 - 75	4%
Dual low flush WCs	£200 - 300	9%



Inflation analysis

Inflation Cost Driver Analysis

Updating the cost of an historical project to current prices often begins with the assumption that inflation drivers are the same, regardless of the type of project. In almost all cases this leads to the use of a common index to update projects that are in fact subject to very different inflation drivers.

To highlight this point we have conducted a number of project specific inflation studies on different building facility types. In this report we examine the inflation drivers of medical facilities. The study examines the cost input inflation of building material components, labour and plant since January 2000. The

results have been rolled up and summarised into elements to allow ease of comparison.

The results of this study indicate that different levels and choices of specification have experienced different levels of inflation. For example, a family care centre roof structure constructed out of steel increased by approximately 12.4% over the study period, whereas the timber structure of a community hospital increased by only 9.1%.

Mechanical and electrical (M+E) has the largest inflationary impact upon the buildings. Of the M+E elements, services equipment costs on the nursing home have demonstrated the

largest increase at around 18.5%. Conversely, the smallest percentage increase over the period, at around 5-7%, was the lift and conveyor installations. These large increases are predominantly due to the escalation of M+E labour costs of over 21% during the study period.

The greatest variance of inflation was witnessed across all facilities in the three finished elements. Wall finishes for the doctor's surgery, in particular, increased by 18.0% over the period, (which equates to a £7.59 per m² gross floor area rise), whereas the nursing home increased only by 5.6%. This increase displayed as a cost per

bed or a cost per m² gross floor area has also been included to highlight the impact of inflation. The cost of the space heating and air treatment of the general hospital, for example, has increased by 14.0% which equates to an additional £1,064.91 for every bed space.

The study has identified that most of the facilities have increased by at least 11%, with an average increase of approximately 13% for the study period. This equates to a cost increase of £10,652.19 per bed for the family care centre, and a £143.07 per m² gross floor area increase for the doctor's surgery.

Further details of the inflation study are available upon request.

Input cost increases from January 2000 to December 2002

Facility Type	Community Hospital		Nursing Home		General Hospital		Family Care Centre		Doctor's Surgery	
	Cost/bed	%	Cost/bed	%	Cost/bed	%	Cost/bed	%	Cost/bed	%
Substructure	780.40	17.4%	304.15	16.6%	337.09	15.4%	1,318.23	16.7%	20.24	16.9%
Frame	-	-	-	-	13.87	6.8%	566.18	8.3%	-	-
Upper floors	-	-	-	-	145.45	13.7%	243.36	11.8%	-	-
Roof	1,218.97	9.1%	449.39	12.0%	266.17	11.4%	575.98	12.4%	33.33	12.4%
Stairs	-	-	-	-	29.25	10.7%	115.77	8.1%	-	-
External walls	298.34	14.1%	260.17	14.2%	222.12	14.2%	1,083.45	14.7%	19.10	14.0%
Windows and external doors	360.60	11.4%	172.17	14.8%	181.65	7.9%	318.06	4.9%	13.94	16.4%
Internal walls	192.46	13.9%	95.02	8.0%	211.45	11.5%	657.20	13.3%	6.01	14.4%
Internal doors	662.06	17.6%	196.71	15.8%	60.23	4.8%	357.09	6.0%	7.52	17.6%
Wall finishes	265.20	14.6%	40.97	5.6%	193.73	11.8%	349.44	7.1%	7.59	18.0%
Floor finishes	140.42	5.6%	71.02	7.5%	141.96	9.4%	238.49	9.4%	4.19	11.3%
Ceiling finishes	185.45	12.6%	63.28	10.2%	124.74	11.0%	206.92	10.7%	4.23	16.6%
Fixtures and fittings	613.67	13.4%	108.32	12.2%	212.67	13.2%	339.40	10.9%	0.61	13.4%
Sanitary fittings	147.41	14.5%	105.28	14.5%	286.64	14.6%	546.14	14.6%	2.15	14.4%
Services equipment	147.41	8.0%	276.12	18.5%	-	-	-	-	-	-
Disposal installations	12.60	13.2%	17.71	11.0%	40.99	13.1%	123.44	11.2%	0.65	13.4%
Water installations	454.27	11.0%	43.61	3.1%	231.89	11.0%	1,489.68	13.4%	1.28	13.2%
Heat source	331.18	15.3%	-	-	499.41	14.6%	-	-	3.08	15.3%
Space heating and air treatment	493.18	15.1%	449.34	15.7%	1,064.91	14.0%	-	-	6.21	14.6%
Ventilating system	852.66	14.5%	-	-	-	-	422.65	13.6%	-	-
Electrical installation	1,203.18	16.2%	371.59	16.7%	528.49	15.3%	775.41	13.3%	8.17	16.0%
Gas installation	35.23	15.4%	16.76	15.1%	-	-	23.80	14.1%	-	-
Lift and conveyor installations	-	-	-	-	41.90	7.3%	141.65	5.4%	-	-
Protective installations	35.13	10.7%	37.21	17.3%	37.49	12.2%	162.00	14.6%	-	-
Communications installations	354.92	12.2%	179.89	17.0%	136.36	15.1%	364.98	15.3%	1.13	14.9%
Special installations	290.42	12.8%	-	-	-	-	232.90	15.5%	-	-
Builders' work in connection	288.00	22.5%	48.74	22.1%	491.88	22.3%	-	-	3.44	22.2%
Facility increase	9,393.17	13.1%	3,307.46	13.4%	5,500.34	13.2%	10,652.19	11.5%	143.07	14.7%

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