

ECONOMIC BULLETIN



A quarterly update from Franklin + Andrews

Volume 8.2 | June 2005

UK economy – growth is slowing

GDP growth

The UK's economy is still in good shape despite some uncertainty about potential interest rate rises and the effects to business of third-term Labour Government spending plan. However, the economy may not be as strong as Chancellor Gordon Brown suggested in his 2005 Budget Report. Independent forecasters predict that GDP growth will slow to 2.5% in 2005, below the Treasury's forecast of 3.0 – 3.5%. The expected slowdown in GDP growth is driven mainly by lower growth in household consumption, as a result of the cooling housing market. The growth is predicted to fall slightly to 2.4% in 2006 before rising a little to 2.6% in 2007.

Interest rates

At the monthly meeting of the Bank of England's Monetary Policy Committee (MPC) held during May 2005, the committee decided to leave the interest rate unchanged at 4.75%, making the ninth month of no change; the last change being August 2004 when it was raised by 0.25%. Nevertheless, outlook for UK interest rates is uncertain. British Chambers of Commerce (BCC) forecast no change in the interest rates during the next 5-8 months but a few economists believe a further quarter point rise in June or July is likely.

Inflation

According to the Office for National Statistics (ONS) latest data, the annual rate of inflation, as measured by the Retail Price Index (RPI), remained unchanged at 3.2% for March 2005.

However, the annual increase in Consumer Price Index (CPI) rose to 1.9% in March from 1.6% in February driven mainly by transport costs. Retail price inflation is predicted to ease to 2.5% at the end of 2005, increasing to 2.7% in 2006.

Housing market

First quarter 2005 saw UK house prices fall further although at an increasingly slower pace. Slowing activity in the housing market is the main factor behind recent consumer softness and is a worrying factor for the economy. Consumer spending could take a serious knock which in turn could affect both the labour market and the housing market.

Construction output

Total volume of UK construction output rose by 3.5% in 2004 reflecting the growth of the overall economy. Construction output is predicted to increase to 1.6%, 2.1% and 3.1% respectively for 2005, 2006 and 2007 with the expectation that the public sector will continue to be the main driver of output growth.

Construction new orders

Construction new orders rose by 7.6% in 2004. The latest forecast is that new orders will grow by 3.1% during this year, rising to 2.3% next year and increasing to 3.6% in 2007.

Material prices

Material prices increased by 4.5% in 2004 largely due to the sharp increase in steel and oil prices. Steel prices are expected to continue to escalate in 2005 with a tight demand-supply balance whilst oil prices are expected to remain at a high level. Material prices are forecast to rise at around 5.4% during this year, well above retail price inflation.

Labour – earning and wages

The Federation of Master Builders (FMB) reported that the overall difficulty in securing skilled labour, in particular bricklayers and carpenters, has eased. Construction earnings rose by 4.9% in 2004, faster than earnings in the economy as a whole. Construction Industry Joint Council (CIJC) has agreed a three-year wage settlement for building and civil engineering operatives, providing on average, a 9.5% wage increase from June 2005. Wage agreements are also

expected to rise faster than RPI inflation over the next two years.

Tender prices

Tender prices, as measured by Franklin + Andrews's Tender Price Index (TPI), outstripped inflation in 2004 rising by 5.7% compared with retail inflation of 3.1%. Our latest forecast for tender price inflation predicts prices to rise 7.3% in 2005 and 3.8% in 2006, as input cost increases will pass down the line to the client.

Building costs

The annual percentage increase of the general building cost index is forecast to rise to 7.1% and 3.9% in 2005 and 2006. A wage increase of 9.5% for building and civil engineering operatives this summer will keep building costs rising during this year.

Overall the annual growth rate of the UK economy, whilst still positive, is set to slow over the next two years. It is anticipated that construction industry economy, output and orders, will slowdown over the same period, largely due to higher oil prices, uncertainty about interest rates rises and the impact of the government's agenda.

Table 1.1 Construction cost index (annual % change)

	2002	2003	2004	2005*	2006*
Tender price index	8.2	5.4	5.7	7.3	3.8
General building cost index	4.0	5.2	6.1	7.1	3.9
Material cost index	2.0	3.3	4.5	5.4	2.8
Labour cost index	6.5	7.2	6.0	7.5	6.0
Retail price Index	1.6	3.0	3.1	2.5	2.7

*Forecast



A view from the Managing Director

by Andrew Williams

The world economy – just a slowdown or on the brink?

As we proceed through the second quarter of 2005 the uncertainties of the world continue unabated. For some time now Franklin + Andrews has been predicting that world growth would begin to tail-off during 2005. The pace of the slowdown is being heavily influenced by the two major economies, US and China, where monetary policy is gradually becoming tighter.

The US economy is in the midst of a deceleration that will take year-on-year real GDP growth from 5.0% at the start of 2004 to 3.0% by the end of 2005. Rising interest rates, strained household finances, the end of tax cuts and persistently high energy costs are now restraining economic growth. On the positive side, the upturn in job growth, coupled with considerable gains in capital spending, suggest that businesses have gained confidence in the recovery's sustainability.

As China's economy shows signs of a modest slowdown from annual growth, officially reported at more than 9% in 2003 and 2004, there are many who believe China is continuing to move away from a state-driven economy following a series of increases in imports. Between 2000 and 2004, China has increased imports by nearly four times as much as

seen during the whole of the 1990s. During 2004, in particular, China's pull on commodity-exporting markets, which results from its high demand for raw materials, has set world prices for a range of products from steel to Brazilian wood pulp. An example of the seemingly ever-growing economy, China has recently increased its imports of vehicle tyres by nearly 10%.

The current upward trend in oil prices continues to attract a high degree of media attention following last year's surge which was driven almost entirely by strong growth in demand worldwide, especially in the US and in China. It is expected that while average oil prices will be around \$2 per barrel higher this year than last year, at the end of the year prices will actually be \$5 to \$6 lower than at the beginning. This will reduce the drag on growth and help some of the struggling economies, such as Germany and Japan. As investment in oil exploration and drilling increases, prices are expected to continue to slide in 2006 and beyond.

Countries with currencies sensitive to the dollar are likely to experience mixed fortunes. Most of Asia, in particular China, and parts of Latin America are expected benefit from a weaker dollar.

The dollar is anticipated to fall another 7% to 10% over the next year against the Euro, the Yen, Canadian and Australian dollars. For these economies, a weaker dollar will slow export growth and put increased pressure on policy makers to stimulate domestic demand. In particular, Japan and the Euro zone, which enjoyed export growth in 2004, may be forced to take action in order to avoid a prolonged growth slump.

There are also unique factors that will alter the growth pattern of some regions. In particular, the economic aftershocks of the tsunami in the Indian Ocean and the follow-on earthquakes will depress growth for at least two quarters in the most affected countries – Indonesia, Sri Lanka, Thailand, and the Maldives. Subsequently, there is likely to be a recovery as reconstruction gains momentum.

A rejuvenated Latin America continues to focus on a sustained economic recovery, despite significant inflation making an unwelcome return to Argentina. Demand for iron ore to feed steel making in Asia and elsewhere to meet the worldwide recovery is helping to reinstate economic robustness in the region.

The Middle East continues to prosper, fuelled mainly by higher oil prices and increased production. In Iraq, the country's new president will be seeking to establish himself both internally and in the world market by playing an active role in the global economy.

Finally, in the UK we have the impact of a new government agenda upon us. A more detailed appraisal will follow in our next bulletin once the dust has settled. As an interesting diversion from local political issues in this edition we have turned the spotlight on the Australian economy following their recent elections, I hope you will find it of interest.

We also feature another in our series on sustainable construction, in particular green buildings, plus we review steel prices and the impact they represent to specific aspects of construction. I trust you will find these articles as thought provoking as ever.

Australia: a buoyant market

Profile

As the sixth largest country in land area, Australia, is the only nation that governs an entire continent. With a relatively small population it has more than a quarter (six million) migrants from over 200 countries, which have made a significant contribution to shaping the developed country.

Land area: 7.69 million km²

Official language: English

(although over a quarter speak other languages)

Population: 20.3 million (April 2005 estimate)

Currency: Australian Dollar (A\$)

1£= 2.4371 A\$; 1US\$= 1.30 A\$ (April 2005 estimate)

Macro-economy

Australia has one of the strongest economies in the developed world for the past decade, with an average GDP growth of around 4%. Along with a competitive and dynamic private sector, it has a skilled workforce of almost half of its population. Average inflation throughout the 1990s was 2.3%, compared to 3.2% in the European Union and 2.9% in the United States. As a high-growth, low-inflation, low interest rate economy, Australia is more vibrant than ever before as shown in Table 1.

Construction economics

The Australian construction industry is the 14th largest in the world by market size. During the past decade Australia has seen the private sector continuing to increase its share of total construction activities. The private sector, now the industry's largest client, contributed almost three quarters (74.3%) of all turnover in 2003/04. The growth reflects

such trends as continued expansion of private investment, increased reliance on private infrastructure investments by the public sector and the privatisation of public utilities.

Robust consumer demand, the strength of the Chinese and Australian economies, further signs of a sustained economic recovery in the US and signs of a pick up in Japan, all bode well for the construction outlook particularly non-residential.

Total construction activity in Australia peaked at A\$86.4 billion (£35.5 billion) in 2003/4, primarily in residential buildings (nearly 53% or A\$46 billion) followed by engineering construction (28%) and non-residential buildings (19%). However, slight declines, mainly in the residential building sector, are expected over the next two years, with total construction output expected to reach A\$79.9 billion in 2005. The non-residential building sector is estimated to grow by 7% to A\$17.0 billion in 2004 while engineering construction will see a minor increase to \$24.3 billion and will remain reasonably static for the remainder of the forecast period. After this low-point, construction activities are forecast to recover and grow steadily to over A\$100 billion a year in 2011, as illustrated in Figure 1.

Franklin + Andrews, in collaboration with Rawlinsons, has been contributing to the publication of the Australian Construction Handbook, which provides the average cost range for a wide selection of typical buildings, elemental rates and detailed item prices. The latest issue, Edition 23 (2005), has been published and is available by contacting us via michelle.swales@franklinandrews.com.

Figure 1 Australia construction output forecast

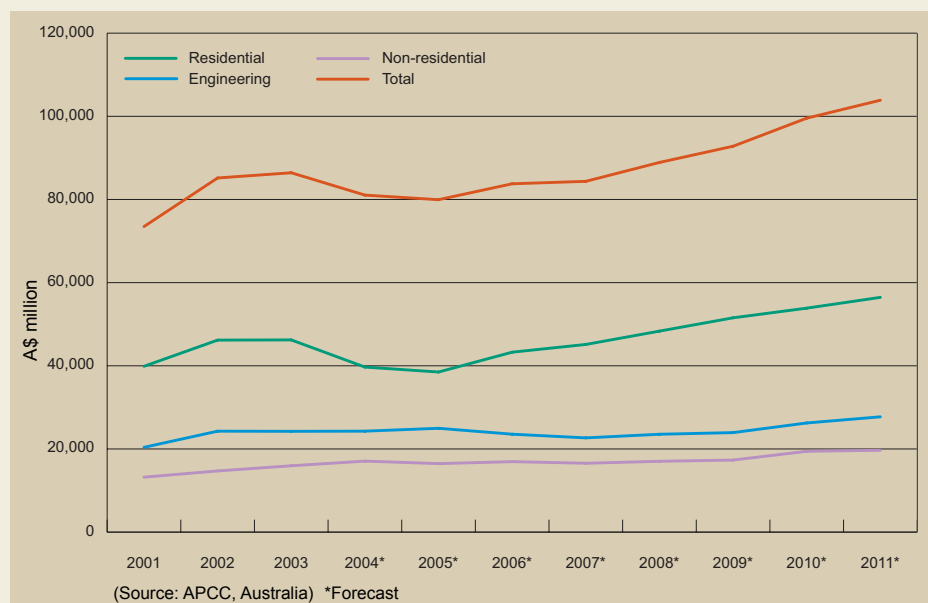


Table 1 Australia economic indicators

	2000	2001	2002	2003	2004*	2005*
Real GDP growth (%)	3.3	2.6	3.8	3.6	2.9	3.1
Inflation (%)	5.8	3.1	3.0	2.4	2.6	2.9
GDP per capita (US\$)	19,598	18,287	20,285	25,601	30,623	32,890

(Source: IMF) *Forecast



Whole life costing

Healthcare facilities

This is the continuation of a series that looks at benchmarking whole life costs for facilities. In this edition we focus on health facilities.

Costs have been rebased to 1Q2005 and reflect typical prices collected throughout the UK. The costs show the capital, occupancy and maintenance of the building including all associated asset replacements and reactive and scheduled maintenance over a 25-year period.

Facilities management costs are excluded so no direct comparison to PFI schemes is recommended.

Whole life costs vary considerably depending on the range and specialisation of the health services provided and the construction specification of the health facility. The costs recorded here are an average of a number of facilities but it is important to note that wide variances are possible especially considering changes in building regulations and technology that make newly constructed facilities perform at a different efficiency level.

General Hospital		
Gross floor area	12500	
	Cost	Cost/m2 GFA
Asset acquisition		
Fees	2,974,454	237.96
Construction cost or rental over period	24,787,119	1,982.97
Asset acquisition subtotal	27,761,574	2,220.93
Occupancy costs		
M&E maintenance	8,882,999	710.64
Fabric	4,974,479	397.96
Cleaning	22,456,221	1,796.50
Waste	224,641	17.97
Electricity	6,932,180	554.57
Gas installations	555,858	44.47
Water	449,094	35.93
Communications	6,632,811	530.62
Post room	164,287	13.14
Porterage	338,077	27.05
Internal moves	4,119,332	329.55
Security	1,363,141	109.05
Management	1,003,122	80.25
Occupancy cost subtotal	50,096,241	4,647.70
Whole life cost over 25 years (NPV)	85,857,815	6,868.63

Health Centres		
Gross floor area	750	
	Cost	Cost/m2 GFA
Asset acquisition		
Fees	128,393	171.19
Construction cost or rental over period	2,069,939	1,426.59
Asset acquisition subtotal	1,198,332	1,597.78
Occupancy costs		
M&E maintenance	227,405	303.21
Fabric	250,405	333.87
Cleaning	568,512	758.02
Waste	5,636	7.52
Electricity	173,935	231.91
Gas installations	13,947	18.60
Water	11,268	15.02
Communications	166,423	221.90
Post room	6,683	8.91
Porterage	13,752	18.34
Internal moves	167,566	223.42
Security	55,450	73.93
Management	40,805	54.41
Occupancy cost subtotal	1,678,787	2,238.38
Whole life cost over 25 years (NPV)	2,877,119	3,836.16

Nursing Homes		
Gross floor area	1500	
	Cost	Cost/m2 GFA
Asset acquisition		
Fees	277,525	185.02
Construction cost or rental over period	2,312,706	1,541.80
Asset acquisition subtotal	2,590,231	1,726.82
Occupancy costs		
M&E maintenance	423,235	322.16
Fabric	568,512	379.01
Cleaning	1,193,875	795.92
Waste	10,293	6.86
Electricity	317,620	211.75
Gas installations	25,468	16.98
Water	20,577	13.72
Communications	303,903	202.60
Post Room	11,361	7.57
Porterage	23,379	15.59
Internal moves	284,862	189.91
Security	94,265	62.84
Management	69,368	46.25
Occupancy cost subtotal	3,406,718	2,271.15
Whole life cost over 25 years (NPV)	5,996,949	3,997.97

Homes for the Elderly		
Gross floor area	1000	
	Cost	Cost/m2 GFA
Asset acquisition		
Fees	166,460	166.46
Construction cost or rental over period	1,387,169	1,387.17
Asset acquisition subtotal	1,553,629	1,553.63
Occupancy costs		
M&E maintenance	341,107	341.11
Fabric	379,008	379.01
Cleaning	795,917	795.92
Waste	7,189	7.19
Electricity	221,830	221.83
Gas installations	17,787	17.79
Water	14,371	14.37
Communications	212,250	212.25
Post Room	8,019	8.02
Porterage	16,503	16.50
Internal moves	201,079	201.08
Security	66,540	66.54
Management	48,966	48.97
Occupancy cost subtotal	2,330,566	2,330.57
Whole life cost over 25 years (NPV)	3,884,195	3,884.19

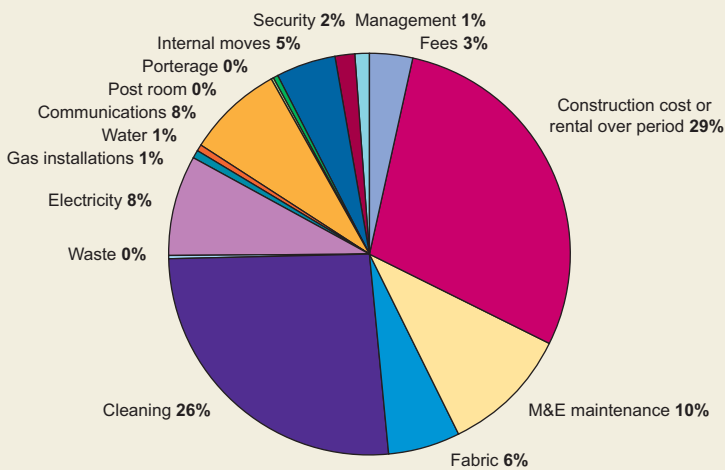
Of the projects analysed, general hospitals have recorded a whole life cost of almost double that of the other health facilities featured, although the capital cost of the facility is only approximately 25% higher.

The variance in occupancy and maintenance costs clearly demonstrates the additional work required in running a general hospital. Most of the occupancy cost headings show typical costs for a general hospital double that of any of the other facilities featured. The only significant item not demonstrate this trend is fabric maintenance which records costs at relatively consistent levels over the facilities. The variance of the cost moves only slightly in facilities where an increased level of damage is likely to be sustained.

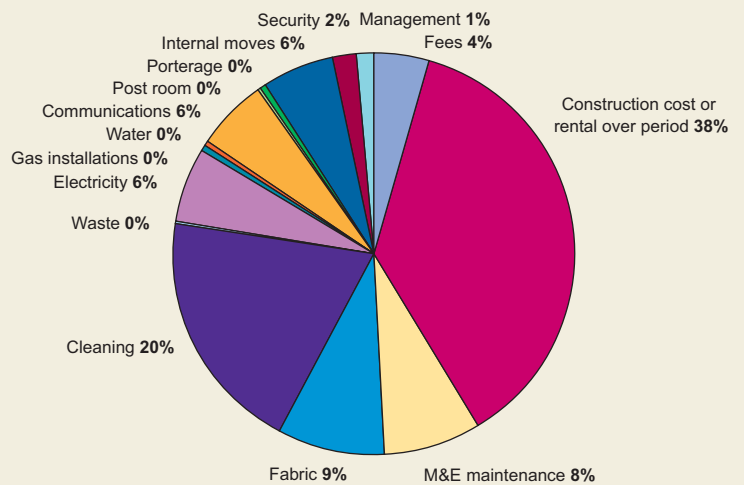
The most expensive item in the study is cleaning costs of general hospitals at over £1,750 per m², which almost equals the initial capital construction cost by itself.

M&E maintenance in a typical general hospital is double the cost of the other healthcare facilities at £710.64 per m². This is predominantly due to the increased level and standard of both mechanical and electrical facilities required in a general hospital. Further inspection of the figures shows that a general hospital records double the cost of utilities than other facilities. This increased level of utility consumption highlights the reason for increased level of M&E maintenance.

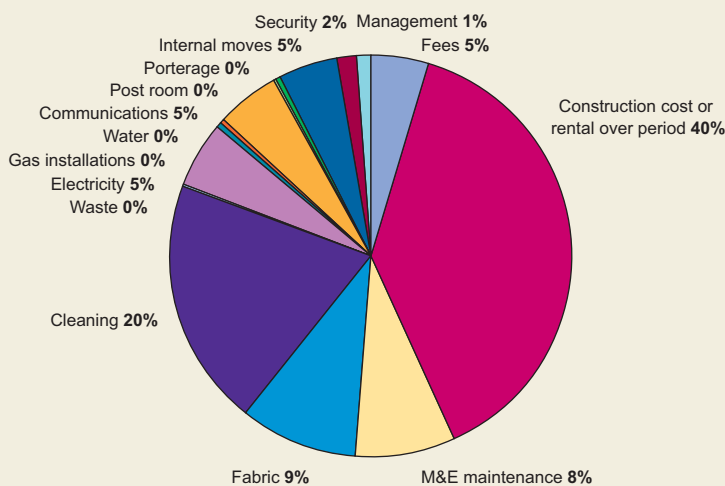
General Hospitals Whole Life Cost



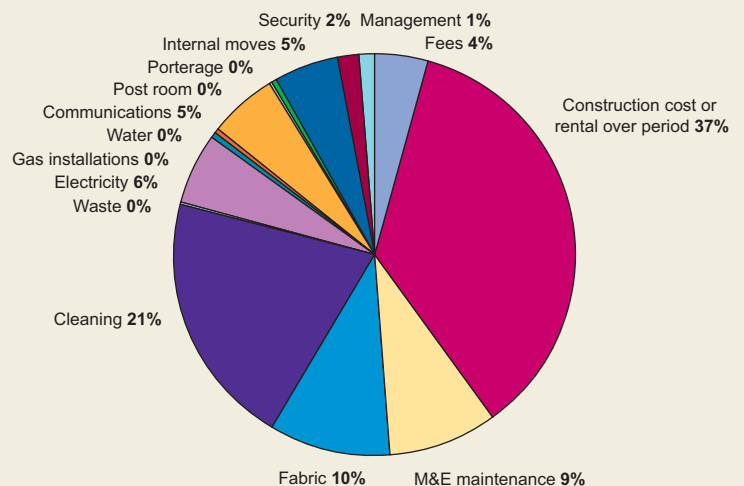
Health Centres Whole Life Cost



Nursing Homes Whole Life Cost



Homes for the Elderly Whole Life Cost





Sustainable construction

Green buildings: the economic and environmental impact

The global construction industry is flourishing with construction spending forecast to grow substantially by 70% up to 2013 with the UK construction industry a major contributor to the prosperity. However, the construction sector has long been claimed as a resource-consumer and construction related activities are one of the major causes of environment pollution. The introduction of 'green' buildings is proving to play a fundamental role in energy saving and reducing natural resource consumption.

Introduction

The concept of green buildings, also labelled as sustainable construction or eco buildings, has increasingly been accepted as a guideline of improvement and innovation for future development in the global construction sector. It involves meeting the needs of present generations without compromising the needs of future generations to meet their own needs and providing a comfortable, energy-saving and human-friendly environment for occupiers.

The UK, the world's seventh largest construction market, is expected to grow significantly within the next ten years and making major contributions to its economic growth. However, the construction sector is also a significant contributor to environment pollution. In the UK almost 60% of total carbon dioxide (CO₂) emissions are related to the construction and occupation of buildings with 60% of timber being used in the construction industry. Construction and occupation of properties in the UK also consumes more than 50% of all energy and produces 70 million tonnes of construction waste per annum, 17% of the UK total. These hard facts have prompted impetus to identify radical changes that need to be implemented in order to achieve a fully innovative and sustainable construction industry.

The use of the green concept in buildings is being promoted through developed innovation themes such as green design, construction technology, intelligent building services, environmental technology, financial control techniques (eg whole life costing) and strategic regulations.

Green design

Green design is concerned with the full range of economic and environmental issues related to sustainable buildings. The principles of a green building design can be implemented wherever possible through the following aspects: almost all have an economic and environmental impact on sustainability:

Low energy consumption: Key design elements include natural ventilation by adopting narrow floor plates, a high wall-to-floor ratio, a high proportion of opening vents and avoidance of subdivision of internal space, minimising the effect of solar heat gain and glare through insulation or external shading and maximising day lighting by adopting high ceilings, perimeter light shelves and control of solar glare.

Low-embodied energy: Embodied energy is concerned with the manufacture, transport and assembly of a building. Key design elements include selecting material with relatively low-embodied energy and controlling the use of sensitive materials such as aluminium, cement and plastics, use of local labour and materials, reuse of materials and on-site disposal and management of recycling including the design of components for future reuse and the building for adaptation.

Prefabrication and construction waste control: Key design elements include the use of prefabricated or modular components to minimise variations, errors, waste and management of recycling of construction waste.

Low water consumption: Key design elements include the specification of low consumption fittings, eg spray taps, low – flush appliance and automatic controls and rainwater harvesting (eg providing water for WCs).

Renewable energy sources: Key design elements include solar collectors for water heating, use of ground water as a source of heating or cooling and power supply from wind energy.

The implementation of green design principles would allow buildings meet environmental targets as well as keeping occupants happy. In addition, maximum use of products made of recycled and waste materials may facilitate buildings attaining better performance in terms of energy consumption and aesthetic issues.

Whole life costing

The whole life costing (WLC) technique is identified as a powerful tool in assessing the cost performance of construction work throughout its life cycle, from inception, completion to disposal, and improving the sustainability of the construction industry. Post-construction costs such as operational, maintenance and disposal costs are largely 'underwater' and invisible, compared to visible capital costs, which account only for a small proportion of the 'iceberg' of life cycle costs.

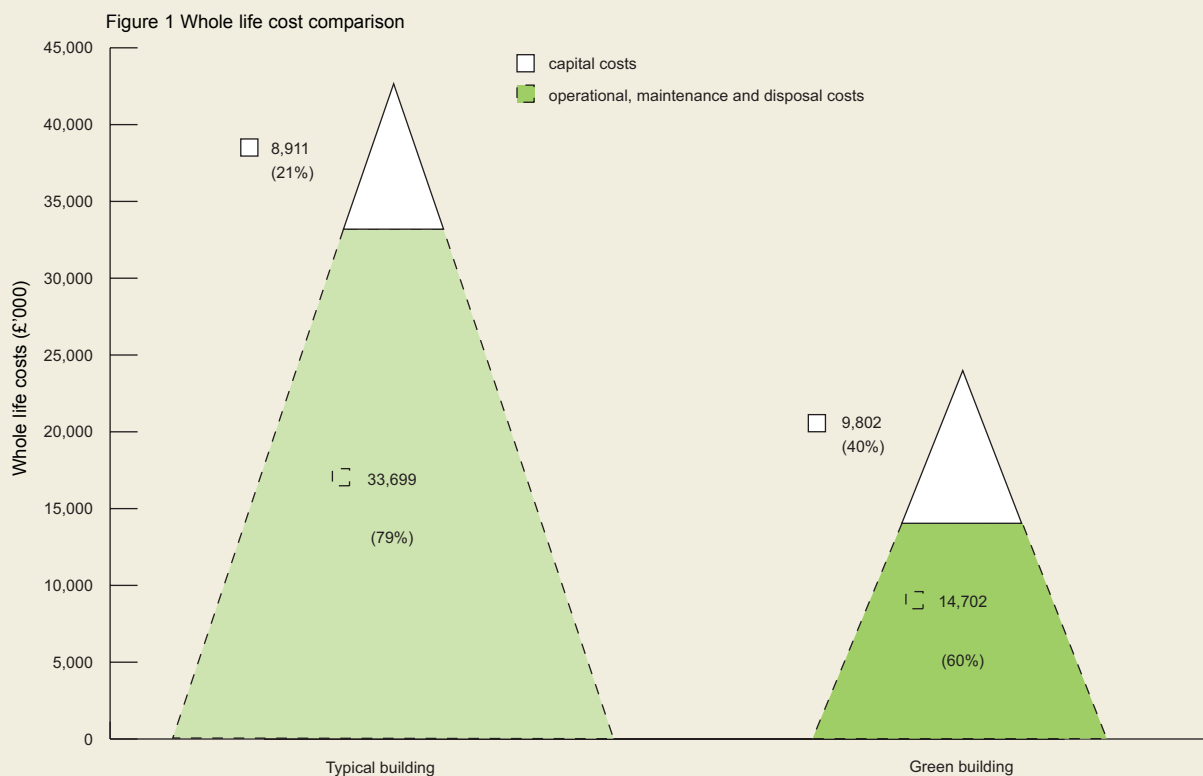


Figure 1 above illustrates the comparison of indicative whole life costs between a green office building and a typical business park office building over a life span of 50 years. The two buildings fulfil a similar functioning requirement and are directly comparable. The estimate for the typical office building is based on the assumption of construction costs at £1,255 per m² with a gross floor area of 7,100 m². The green building of the same gross floor area, using green design solutions, with a capital cost of £1,380 per m², shows a 10% increase in capital costs when compared to the typical building. Despite a higher capital cost, the whole life cycle cost of the green building is much lower than the typical building, as shown above.

Environmental implications

All construction materials and components over their life cycle have a significant impact on the environment. A UK national database, the Environmental Profiles of Construction Materials and Components, which provides access to environmental impact data on all types of construction materials and products, has been developed to enable architects, specifiers and clients to make informed decisions about construction materials and components.

The environmental implication, ie environmental profiles, may be calculated for materials, components and building elements. They are measured on a basis of per tonne or per m², taking into account maintenance, replacement and disposal rates for a nominal life, eg sixty years, and aiming for an environmental improvement in energy, water saving, waste reduction and microclimate.

The strategy of Intelligent and Green (INTEGER) programme for the refurbishment of the 40-storey Glastonbury House in Westminster in central London demonstrates the environmental impact of the green building as shown below:

Energy: target 50% energy savings and a 50% reduction in carbon emissions through improved heating and lighting, insulation and the use of solar water heaters and wind turbines.

Water: target 40% water savings through rainwater harvesting, use of spray taps and grey water recycling.

Waste: reduce waste through off-site fabrication, pre-contract specifications for recycling, considering waste separation and compaction.

Microclimate: improve the microclimate around the base of the building through intelligent landscaping, the introduction of wind-deflectors and making the balconies of the flats more habitable through enclosure.

Strategic regulations

The UK Government has established a number of initiatives and regulatory measures including the revisions to Part L of Building Regulations, the climate change levy, landfill taxation and enhanced capital allowances to encourage the adoption of sustainable practice.

The concept of green buildings promotes the use of innovation to achieve wide-ranging improvements in performance and value through developed innovation themes. Amongst which, green design, whole life cycle costing techniques and strategic regulations are seen as major approaches adopted to improve the overall performance of buildings leading towards a green and sustainable construction industry.



Inflation analysis

Spotlight on steel

The robust upward price performance of base metals and soaring steel prices over the past two years has been a concern for the construction sector. The upturn in prices has, inevitably, been linked to the strong economic growth taking place in China which has set about a dramatic programme of construction. This is inevitably fuelling demand for many products and the impact upon world commodity markets is beginning to see a step-change in China transforming itself from being a net exporter to a net importer for a number of commodities.

The rising cost of raw materials for steel making has also pushed up prices, in particular, a number of iron ore price settlements have risen by 71.5% in 2005, compared to an 18.6% rise last year.

Steel shortages in China and the US will inevitably drive up world boost prices for the metal. And global industry experts are predicting European benchmark steel prices will rise 11% to an average \$590 a tonne in 2005 compared to \$530 a tonne last year. However, price rises are expected to be much higher if iron ore price increases of circa

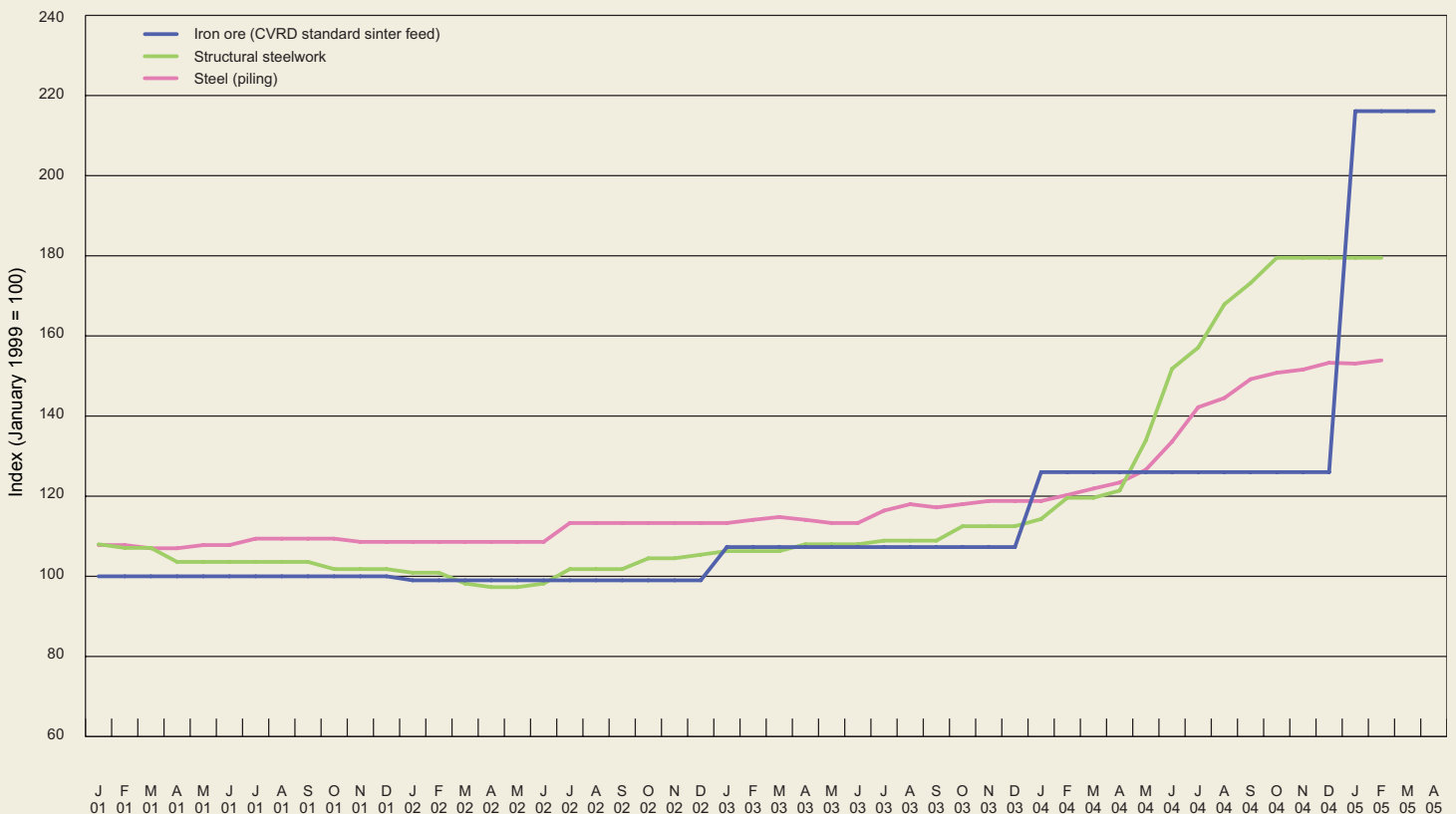
71% become the norm and start to feed through to suppliers towards the middle of 2005.

In order to highlight the impact of rising steel prices, we have applied the published price increases from March 03 to March 05 to a sample project in order to compare the total cost that might be experienced on building a typical three-storey office facility. If the office was constructed using a concrete frame then the total facility cost increases by 0.7% equating to approximately £10/m² GFA. By comparison, the same office featuring a steel frame would

witness a 2.3% rise equating to an increase of £33/m² GFA. If steel prices react in the way we anticipate then the impact on costs will be even greater.

To highlight the relationship between the iron ore price movements and the effect on construction materials, Figure 1.1 below plots iron ore set against product price movements utilising steel as major component parts.

Figure 1.1 Steel materials comparison



(Data courtesy of DETR)

<p>Franklin + Andrews Sea Containers House 20 Upper Ground London SE1 9LZ United Kingdom T: +44 (0) 20 7633 9966 F: +44 (0) 20 7928 2471</p>	<p>Contact Michelle Swales Marketing & Communications Director E: michelle.swales@franklinandrews.com W: www.franklinandrews.com F+A is a member of the Mott MacDonald Group</p>	<p>UK offices</p> <table border="0"> <tr> <td>Birmingham</td> <td>Edinburgh</td> <td>Manchester</td> </tr> <tr> <td>Bristol</td> <td>Exeter</td> <td>Norwich</td> </tr> <tr> <td>Cardiff</td> <td>Glasgow</td> <td>Preston</td> </tr> <tr> <td>Chester</td> <td>Leeds</td> <td>Sheffield</td> </tr> <tr> <td>Croydon</td> <td>London</td> <td>York</td> </tr> </table>	Birmingham	Edinburgh	Manchester	Bristol	Exeter	Norwich	Cardiff	Glasgow	Preston	Chester	Leeds	Sheffield	Croydon	London	York	<p>Overseas offices</p> <table border="0"> <tr> <td>China</td> <td>Norway</td> </tr> <tr> <td>Hong Kong</td> <td>Poland</td> </tr> <tr> <td>Ireland</td> <td>Singapore</td> </tr> <tr> <td>Malaysia</td> <td>Thailand</td> </tr> <tr> <td>Nigeria</td> <td>Venezuela</td> </tr> </table>	China	Norway	Hong Kong	Poland	Ireland	Singapore	Malaysia	Thailand	Nigeria	Venezuela
Birmingham	Edinburgh	Manchester																										
Bristol	Exeter	Norwich																										
Cardiff	Glasgow	Preston																										
Chester	Leeds	Sheffield																										
Croydon	London	York																										
China	Norway																											
Hong Kong	Poland																											
Ireland	Singapore																											
Malaysia	Thailand																											
Nigeria	Venezuela																											

SPECIAL REPORT

Economic Bulletin



June 2005

Railway cost driver analysis

Franklin + Andrews has developed a unique set of indices to reflect both cost and tender price movement of railway construction.

Analysis and discussion with leading specialists within the sector established a need for the indices. The indices are offered as an alternative to the existing use of the Retail Price Index (RPI) to inflate and deflate project budgets. A regular review and updating of the indices with forecasts for future cost and tender movements will be published on a half yearly basis.

Cost components

The following were established as being typical of cost significant components of major railway projects:

- Signalling
- Telecommunications
- Electrification
- Permanent way
- Stations and civil engineering

Through use of weighting existing public domain indices for

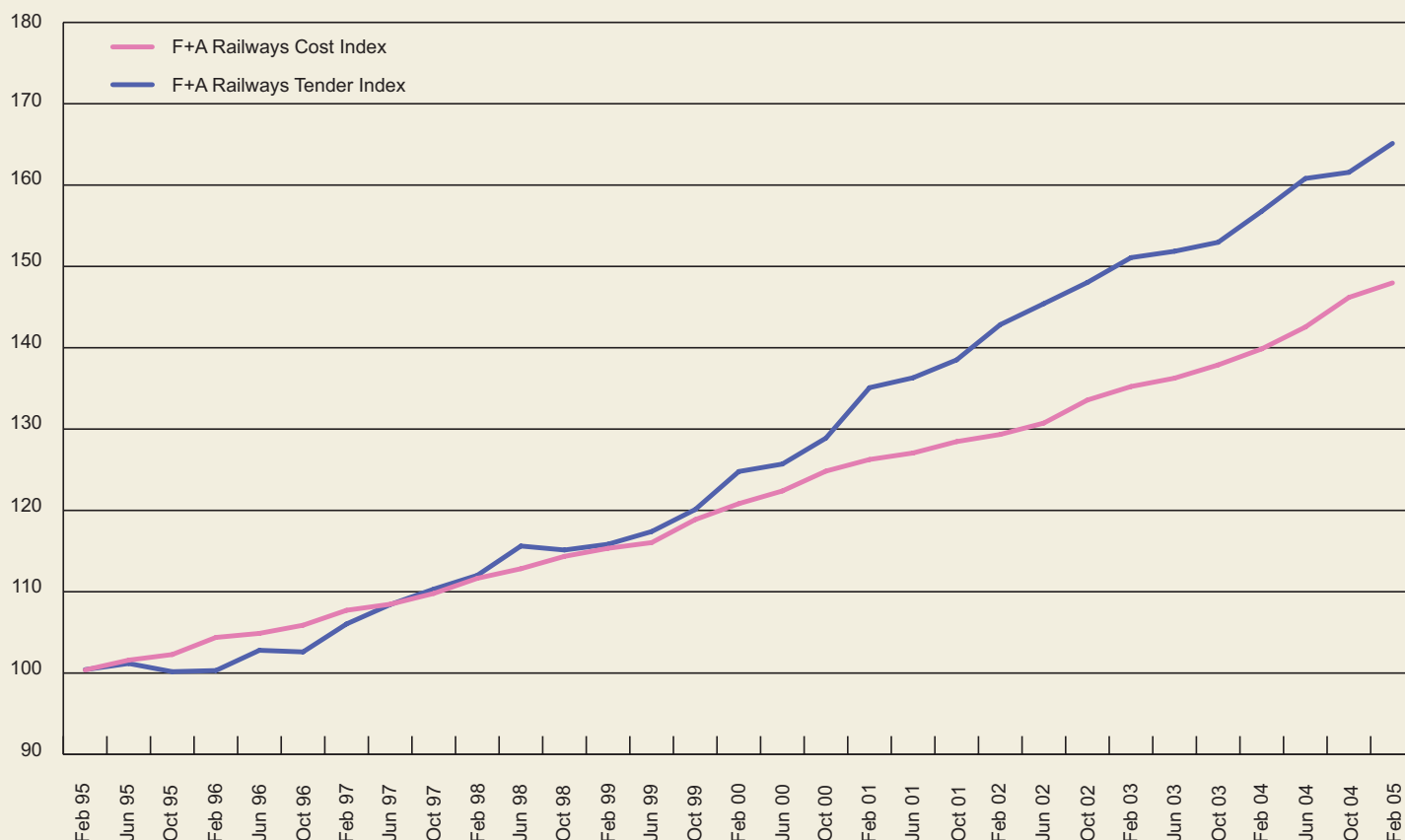
historical movements and linear regression techniques for predictions, cost indices have been created for each of the five components from a base year of 1995. These indices have been weighted to replicate a typical major infrastructure project in order to generate a Railway Project Cost Index.

As a number of the cost components are subject to market forces, a series of tender indices have also been included. These tender indices have been weighted to produce a Railways Project Tender Index.

Cost Indices													
	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05
Management and design Index	144.3	144.9	144.2	144.6	145.0	145.4	145.9	146.3	146.7	147.1	147.5	148.0	148.4
Property	133.0	133.3	133.7	134.0	134.4	134.7	135.0	135.4	135.7	136.1	136.5	136.9	137.3
RPI	127.2	127.7	127.9	127.9	128.4	128.8	129.2	129.7	130.1	130.5	130.8	131.0	131.2
Signalling	142.5	143.3	143.6	143.9	144.5	144.8	148.1	148.2	148.1	147.9	148.5	149.0	149.5
Telecoms	142.9	143.7	144.0	144.1	144.9	145.2	146.5	146.6	147.1	147.6	148.2	148.8	149.4
Electrification	142.9	143.7	144.0	144.1	144.9	145.2	146.5	146.6	147.1	147.6	148.1	148.6	149.1
Permanent way	145.3	143.7	146.9	152.4	153.3	153.5	154.2	155.3	155.8	156.3	156.8	157.4	158.0
Stations and civils	141.3	142.6	143.7	147.8	148.7	148.8	149.6	151.5	152.4	153.4	154.0	154.6	155.2
F+A Railways Cost Index	142.9	143.7	144.0	144.1	144.9	145.2	146.5	146.6	147.1	147.6	148.1	148.6	149.1

Tender Indices													
	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05
Signalling	162.9	166.5	164.5	165.6	160.7	161.4	165.0	166.2	166.9	166.4	167.2	167.9	168.7
Telecoms	163.3	166.9	165.0	165.8	161.1	162.0	163.2	164.5	165.8	166.1	167.0	167.8	168.7
Electrification	163.3	166.9	165.0	165.8	161.1	162.0	163.2	164.5	165.8	166.1	166.9	167.6	168.4
Permanent way	166.1	170.4	168.3	175.4	170.5	171.2	171.8	174.1	175.5	175.8	176.6	177.5	178.3
Stations and civils	161.4	165.7	164.5	170.0	165.3	166.0	166.7	169.9	171.8	172.8	173.5	174.3	175.1
F+A Railways Tender Index	159.1	162.4	160.8	163.8	159.4	160.1	161.6	163.1	164.2	164.4	165.1	165.9	166.6

Railway cost driver analysis



Cost indices annual inflation							
	2002	2003	2004	2005	2006	2007	2008
Signalling	4.27%	3.81%	5.08%	4.12%	3.88%	3.82%	3.83%
Telecoms	3.11%	4.15%	5.44%	4.91%	4.33%	4.11%	4.22%
Electrification	3.11%	4.15%	5.44%	4.12%	3.53%	3.46%	4.35%
Permanent way	6.81%	4.58%	8.48%	4.33%	3.54%	3.21%	3.59%
Stations and civils	7.01%	4.14%	10.59%	4.81%	2.94%	3.13%	3.45%
Typical railways project annual cost inflation	4.21%	3.75%	5.82%	4.10%	3.46%	3.48%	3.83%

Tender indices annual inflation							
	2002	2003	2004	2005	2006	2007	2008
Signalling	6.81%	3.87%	4.84%	4.99%	3.97%	4.70%	4.79%
Telecoms	5.62%	4.21%	5.20%	6.05%	5.45%	5.57%	5.93%
Electrification	5.62%	4.21%	5.20%	5.38%	3.92%	4.43%	4.80%
Permanent way	9.41%	4.65%	8.22%	5.42%	3.65%	4.20%	5.88%
Stations and civils	9.61%	4.20%	10.34%	5.85%	3.74%	4.12%	4.78%
Typical railways project annual tender inflation	6.61%	3.97%	6.08%	5.16%	3.92%	4.39%	4.99%

Franklin + Andrews Sea Containers House 20 Upper Ground London SE1 9LZ United Kingdom T: +44 (0) 20 7633 9966 F: +44 (0) 20 7928 2471	Contact Michelle Swales Marketing & Communications Director E: michelle.swales@franklinandrews.com W: www.franklinandrews.com	UK offices			Overseas offices	
		Aberdeen	Edinburgh	Manchester	China	Norway
		Birmingham	Exeter	Norwich	Hong Kong	Poland
		Cardiff	Glasgow	Preston	Ireland	Singapore
		Chester	Leeds	Sheffield	Malaysia	Thailand
		Croydon	London	York	Nigeria	Venezuela
	F+A is a member of the Mott MacDonald Group					