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DECEMBER 2010

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Front cover
The Bronx-Whitestone Bridge, USA
Photo: Nicola Evans, WSP

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The world has changed, and in common with all businesses it is our response to the economic dynamics of our markets that will determine the rate of our progress in the future.

WELCOME

WSP's response in the last two years has been to focus on our operational efficiency whilst continuing to strive to be commercially, technically and professionally the best in class.

In recent months I have been working with WSP's senior leadership team on our strategy for the next five years. We have agreed on a clear strategy for growth, underpinned by improved performance. It will give direction for all our stakeholders and will ensure that we are strongly and appropriately positioned both for today's varied markets and tomorrow's opportunities.

Our strategy builds on a strong platform of world-class project delivery for our global clients, as testified by the articles you will read in this issue of *Solutions*. These include descriptions of major infrastructure projects that will play a vital role in the future success of European cities such as Stockholm and Helsinki. We hear from our energy experts on projects ranging from driving down energy consumption in all kinds of buildings to devising an assessment methodology for reducing carbon emissions in industry. We also describe how we are optimising our global expertise in renewable energy to increase our offering for power-generation clients.

It has been a busy and challenging year and I'm sure that, like me, you are looking forward to a well-earned break. May I take this opportunity to wish all our clients a happy holiday season and I am sure you will all join me in wishing for peace and stability in the New Year.

Chris Cole
CEO, WSP Group plc

WSP SELLS and WSP Finland are ‘united by their difference’ in bridge construction, inspection and maintenance. Both are well known: WSP SELLS in North America, WSP Finland in Scandinavia and parts of Asia and Africa. Yet the type of bridge these two businesses see most frequently could not be more different.

UNITED BY BRIDGES



In a move to combine experience and extend their global reach, they experimented successfully with a year-long senior secondment.

Simo Kettunen took time out from his demanding managerial role in WSP’s bridge inspection business based in Oulu, Northern Finland, to assume hands-on duties as a Senior Engineer in New York State. This is what he had to say:

“Finland doesn’t have suspension bridges and most of our bridges were built after 1945, so I’m more familiar with modern steel and concrete structures. My year in the USA has allowed me to work on bridges that date back to the late 19th and first half of the 20th centuries, some of them famous, iconic structures such as the 1939-built Bronx-Whitestone Bridge. Most of these bridges are subject to very heavy traffic flow – far heavier now than when they were first constructed, and therefore need regular inspections and maintenance.

“Finnish traffic is much lighter than in east coast USA, so our bridges experience comparatively less wear and tear – but with all our lakes and waterways, we have a lot more water. So I was happy to share my experience of examining bridges, piers and dams, using underwater sonar scanning to seek out the stresses and strains.

“A highlight during my time in the USA has been working on the Gowanus Expressway, a four-mile long viaduct in Brooklyn, and two large suspension bridges – the Robert F. Kennedy Bridge from Bronx to Queens; and the Bronx-Whitestone. Inspection work on these bridges requires a very good head for heights!

“This experience has convinced me of the value of shared knowledge. It makes our teams more versatile and enhances all our projects worldwide. WSP Finland is involved in some high-profile projects in Vietnam and India currently, and I believe that, by reaching out to many types of experience in many different circumstances around the world, we can devise and apply the best solutions and considerably add value to our global bridge projects.”



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**SHARED KNOWLEDGE
AND EXPERIENCE...
ENHANCES OUR
PROJECTS WORLDWIDE**

Photo: Nicola Evans, WSP

inspirational india

International architects and future-focused developers are working on design and construction projects in India, which rank amongst the world's best. WSP has secured roles on some of the most prestigious, thanks to its global expertise.

The Grand Palladium, Mumbai

DEMAND FOR A SOPHISTICATED APPROACH TO DESIGN AND CONSTRUCTION IS BECOMING FIRMLY ESTABLISHED...

"India's rapid economic growth – approximately 7% per year at present – means the country's real estate industry is undergoing a major transition," says Sidharth Singh, Managing Director, WSP India.

"Demand for a sophisticated approach to design and construction is becoming firmly established, particularly for a new generation of landmark buildings as well as for major residential and commercial developments."

Nowhere is this trend more evident than in Mumbai, where WSP is working on several landmark projects including India Tower, the needle-like skyscraper by Foster and Partners which, at 125 floors, is set to be one of the tallest buildings in the world.

The futuristic Grand Palladium, also in Mumbai, is the new headquarters of the GMS Group. This steel-built, seemingly gravity-defying architectural masterpiece by leading Mumbai architect Kamal Malik, has become a reality thanks to WSP's engineering skills.

An extensive portfolio

"WSP's portfolio of projects in India is very extensive," says Anurag Somvanshi, Business

Development General Manager, WSP India. "It includes retail, commercial, residential, hospitality, aviation, sporting and large township developments."

Just south of New Delhi, WSP brings strategic and technological expertise in transport, infrastructure and energy issues to the master-planning of three linked cities known collectively as 'Jaypee City' for developers the Jaypee Group. This city will be home to more than two million people, three major business districts, the world's largest cricket stadium and India's first Formula One motor racing track, which is to host its first F1 race in 2011.

Other examples of WSP's wide-ranging portfolio include Ahmedabad Stadium Complex, incorporating a 33,000-seat stadium, shopping mall and multiplex building, for which WSP is providing multi-disciplinary services; and Indira Gandhi International Airport, where WSP is providing structural design services for much of Delhi Aerocity – the 230 acres of land earmarked for commercial development.

Why WSP?

Sidharth Singh believes WSP India has a set of unique strengths that make it the partner of choice for many leading architects and developers.

"Firstly, we are well established regionally. WSP India has been in business since 2004, and now has more than 130 staff in Delhi and Mumbai with multidisciplinary skills and international design experience.

"Additionally, we draw on the expertise of the WSP Group around the world," he explains. "That's why we can take on work involving signature architects and achieve the results they demand. Currently our UK, US, Australia, Middle East and Environment &



Images courtesy of SOM and Tom Leader Studio



Masterplan for Jaypee City, near New Delhi

Working closely with world-leading master planning practice SOM, WSP UK provided international best practice for infrastructure planning including strategies for water, waste and renewable energy management. Urban design and transport experts prepared strategies for a multi-modal transport system to encourage use of public transport rather than cars.

Energy businesses are all involved in projects in India."

US-based WSP Cantor Seinuk, internationally renowned for excellence in high-rise structural engineering, is one of the WSP businesses with a strong portfolio of work in India.

Jeffrey Smilow, Executive Vice President at WSP Cantor Seinuk in New York, has spent the past two years working closely with the WSP India regional team.

"I've had a very positive experience and learned a great deal about India," he said. "As a business, we've both offered and taken in new ideas. Harmonising approaches isn't about compromise, however. In fact, the work we are doing with our partners in India is uncompromising in its excellence."

The development company Hiranandani, for example, has chosen to work with WSP Cantor Seinuk on numerous major projects in Mumbai, Chennai and Bangalore, each consisting of multiple towers ranging from 15 to 36 storeys.

Examples include the 1,000,000 sq ft of development in Chennai (the Edina, Oceanic and Bayview towers), the 700,000 sq ft of development in Mumbai (the Sierra and Belicia towers) and the 1,000,000 sq ft of development in Bannerghatta, Bangalore (Club Meadows and Lake Verandahs towers).

"Our work with the Hiranandani team has grown over time and we've been able to offer more and varied input," says Jeffrey Smilow. "As our relationship develops, so do our mutual achievements."

"It's an exciting time for design and construction in India," concludes Sidharth Singh. "Cities that offer the very best in modern living are in vogue and this is revolutionising our business here."

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India Tower, Mumbai

WSP Cantor Seinuk has been commissioned to engineer the India Tower.

DOUBLE DECKER PLAN FOR STOCKHOLM

Freely flowing traffic is a key aim in most cities around the world and it's often one of the most difficult goals to achieve. A unique project in Stockholm is increasing road capacity and turning under-utilised land into a new district of the city.



"If I had to compare the design, management and engineering of this project to anything, it would be to open heart surgery," says WSP project manager, Lars Kallrén. "It sounds dramatic, but what we are doing is keeping the city functioning whilst completely reconstructing key road arteries and creating a new district for housing and life-science-focused offices."

WSP has two clients involved in this major strategic project: the Swedish Transport Administration (STA) and the City of Stockholm.

For the STA, WSP is managing most aspects of constructing part of the Northern Link by-pass to relieve congestion in Stockholm city centre while increasing capacity of one of the Northern Link's main feeder roads, the Essinge Link.

The City of Stockholm, meanwhile, has agreed with its northern neighbour, the City of Solna, to connect the cities with a new district for housing and offices focused on the Karolinska Hospital and the adjacent Nobel Institute. The new district and

the section of the Essinge Link for upgrading are in the same place – the under-utilised North Station area.

WSP's solution for the City of Stockholm involves driving the Essinge Link through tunnels then building the new district on decking above it.

The challenges of over-decking

Carrying out such a complex project in such a busy city is challenging and the planning stages have involved extensive consultation.

"Since 2008, WSP has been working on the master plan for the new district, the work plan for the STA and comprehensive environmental analysis for both the City and the STA. We are now involved in detailed planning, which is set to continue until March 2012 and will include producing tender documents for 12 separate contracts," explains Lars Kallrén.

"Meanwhile, construction of the Northern Link has already started and with completion scheduled

for 2015, time is tight. Space on the construction site is limited and we have to keep the city functioning while all this work is going on. This involves a great deal of consultation with a wide variety of stakeholders."

Eskil Sellgren, WSP Sweden's Civils Director, believes that WSP is able to add significant value by being involved in both projects. "We avoid duplication and can devise innovative solutions by looking at the roads, housing and offices scheme holistically rather than as a sum of its parts," he says.



**CARRYING
OUT SUCH
A COMPLEX
PROJECT
IN SUCH A
BUSY CITY IS
CHALLENGING**



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The Northern Link is a 13km, mainly tunnelled highway connecting Sweden's major freight harbours and ferry terminals serving the Baltic states, Finland and Russia. It is due to be completed in 2015.

The Essinge Link is the original Stockholm by-pass built in the 1980s.

New North Station district will comprise approximately 4,000 homes and offices for 10,000 people. Construction is expected to continue until 2025.



Sarajevo suffered serious damage during the infamous four-year siege. Only now, fourteen years on and despite the global financial crisis, is the city showing the first signs of regeneration and growth, thanks largely to foreign capital investment.

The first international investor in the region, Triland Development, owns, develops and manages real estate assets, including office, residential and retail properties in Bosnia and Herzegovina (BiH). Its founder, Tie Sosnowski, purchased a green field site in the heart of the city as the ideal location for the 23,000 m² shopping mall. The building is immediately adjacent to the Holiday Inn Hotel, which housed many of the foreign journalists during the conflict, and is probably the most recognisable building in the country.

Tie Sosnowski generally aims to employ only local architects, engineers, contractors and construction companies. However, it became apparent that outside support was needed to complete the building services design to ensure that international standards were achieved throughout the scheme. "Our MEP team haven't had the opportunity to work on new building projects of this scale and complexity," he said. "Additionally Bosnia does not yet have conventional shopping mall buildings, so this was a steep learning curve for the local team."

WSP was appointed to support the local engineers with a small, highly experienced retail team headed by Technical Director Simon Long. It's a project he finds extremely rewarding. "This is really pure consultancy, engaging with good but generally inexperienced engineers, and discussing new techniques, available options and working practices appropriate for a

modern construction project," he said. "The project design and the procurement is divided up into numerous packages (as is normal practice in BiH) with separate companies or individuals responsible for each. Therefore, significant time has been spent ensuring that co-ordination, interfacing and integration of the building services systems is completed effectively."

In terms of building design, Sarajevo's climate, ranging from around -20 °C in winter to 35 °C in summer, is challenging and the choice of systems is very important. Alta Mall includes a number of innovations, including the extensive use of water source heat pumps, connections to the town district heating system, heat recovery via large thermal wheels, and variable volume systems. The scheme also benefits from fully integrated electronic systems (believed to be a first in the country), innovative lighting design solutions, and high-quality audiovisual facilities.

Tie Sosnowski added: "WSP has been on site regularly, supporting the local MEP team, attending meetings with local contractors, resolving problems and generally providing consultancy for the entire project. They have added enormous value, and helped us move the project towards completion."

The Alta Shopping Centre will open this December, providing the people of Sarajevo with a fresh new shopping experience as well as a large number of jobs for the local workforce. WSP is now working with Triland on its next project in Sarajevo, a large office block close to the shopping mall.

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SARAJEVO READY FOR NEW SHOPPING EXPERIENCE

The Alta Shopping Centre is the first modern retail complex to be built in Sarajevo since the end of the Bosnian War in February 1996.



future ENERGY

Changing the way we generate, manage and use energy, in particular electrical power and heat, is one of the greatest challenges facing our world today. The developing world is being reshaped by rapid economic growth, urbanisation and population growth; and in the developed world, much existing energy infrastructure is at or near the end of its planned life.

WSP is launching a new business stream to focus on energy generation and distribution. Future Energy brings together our world-leading expertise in renewables and provides a focused, value-added consultancy offering for power-generation clients.

We have a part to play at every stage of energy production, distribution and consumption. We're helping energy producers develop renewable energy supplies, with projects ranging from hydropower to wind farms to solar energy. Our involvement starts with the first feasibility studies, when we provide advice on strategic, technical, financial, regulatory and environmental issues, and continues through project management advice, engineering design and long-term operational management support services.

We develop cost-effective and environmentally appropriate methods of generating heat and power, and distributing the energy into the grid and on to the customer. WSP also helps consumers of energy – governments and local authorities, property owners and developers, industry and the public sector – manage their energy consumption and create value by incorporating renewable energy generation technologies into their assets.

In helping our clients transition to a low-carbon, energy-efficient world with a range of clean and renewable technologies, WSP is playing its part in enabling the world to manage and meet its energy requirements and thus help ensure sustainability for future generations.

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www.wspolutionsmagazine.com

Our *Renewable Energy* special online edition of *Solutions* contains a range of articles and case studies demonstrating our diverse capabilities in the renewable energy sector worldwide. These include:

1. Bio-energy for Diageo

A WSP-designed bio-energy plant for Diageo will use spent grain from the distillery process to replace 80% of the electricity and 98% of the natural gas Diageo buys and bring down carbon emissions by more than 60%.

2. Stockholm Royal Seaport

WSP developed the vision for a new district for Stockholm, founded on energy efficiency, low emissions and local production of renewable energy.

3. Hydropower in Uganda

The new Bugoye River power plant in Uganda will increase the country's electricity supply by around 7%.

4. Ground source energy at Danderyd University Hospital

A ground source cooling and heating scheme for a new emergency unit at Danderyd University Hospital in Stockholm will generate estimated energy savings of 40 kWh/m² per year with a payback time of just over six years.

5. Kalahari Solar Project

WSP was appointed for the environmental impact assessment to assess the most beneficial options for the Kalahari Solar Project. This aims to provide a secure sustainable energy supply to support South Africa's rapidly expanding need for power.

6. Beaulieu to Denny overhead transmission line

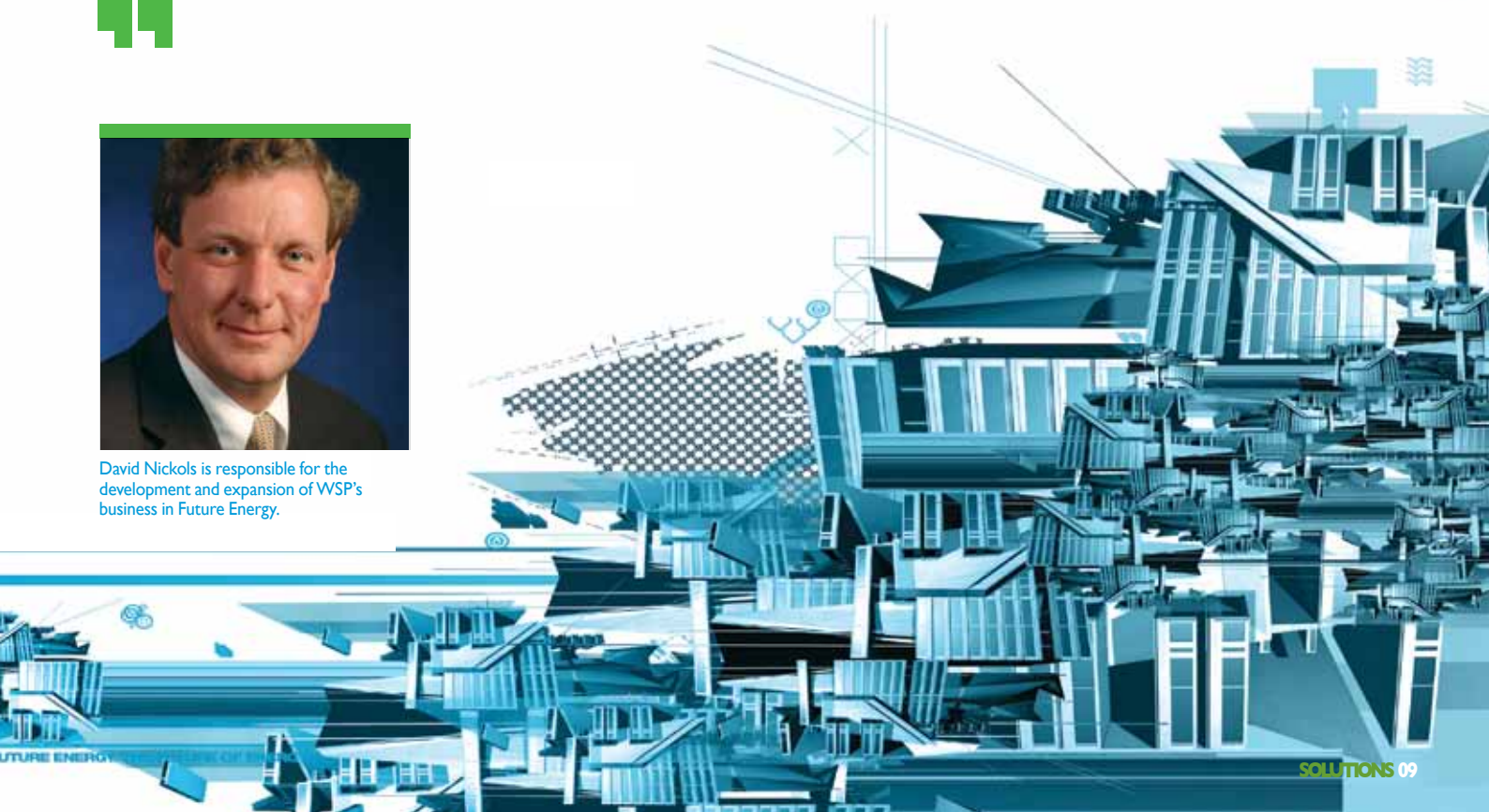
A very successful example of WSP's skill in helping major utility companies identify environmentally sensitive routes for the overhead transmission lines required to connect new renewable energy plants to the national grid.



WSP IS PLAYING ITS PART
IN ENABLING THE WORLD
TO MANAGE AND MEET ITS
ENERGY REQUIREMENTS



David Nickols is responsible for the development and expansion of WSP's business in Future Energy.



HELSINKI RING RAIL

First impressions matter, and for visitors arriving at Helsinki-Vantaa airport their first glimpse of Finland on the 30-minute journey to Helsinki city centre is a landscape of glittering lakes and deep-green pine forests.

Currently the only travel options are by road – bus, taxi or private car, but soon a new direct rail link will make the journey smoother and more environmentally sustainable.

Due to open in mid-2014, the Helsinki Ring Rail Line is a circular rail route that will carry travellers and commuters around the capital and connect the airport directly to the city centre. WSP is providing planning services for the track, stations and bridges of the railway on behalf of the Finnish Railroad Administration.

Our role includes rail, street and bridge design, geotechnical, structural and environmental planning for the western part of the 18 km line – of which 7 kms runs in tunnels – and architectural design of three stations. We are also carrying out quality assurance for the whole planning project.

Project Director Markku Hulkkonen, says: "In a high-profile urban project such as this, the design of stations and their surroundings is a challenging job. The Ring Rail Line is not only a public transport project but also the first impression that Helsinki gives to international visitors.

"Keeping local communities involved is an important part of our work, too. When undertaking a large project in a densely populated region, it's essential that we keep local residents and businesses informed about what is going on and how it affects them. Involving stakeholders in the planning process has created acceptance and enthusiasm towards the project."

The line will bring rail services to new areas in the Helsinki region, particularly the city of Vantaa, and feeder traffic will also allow people living further away to take advantage of services. Moreover, in reducing the need for bus and car traffic and its associated environmental impacts, the Ring Rail Line plays an important role in Finland's commitment to meeting the EU's climate policy objectives.

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RING RAIL LINE IN FIGURES

- > estimated cost €605 million
- > 2-track passenger line
- > maximum speed on line 120 km/h
- > length of railway line 18 km
- > 4 new stations and 4 station reservations
- > feeder traffic parking for 500 cars and stands for bicycles
- > nearly 2,000 passengers per hour per direction during peak hours



Images courtesy of B&M Architects Ltd

RHUR REVIVAL

At the centre of Germany's largest conurbation – the industrial heartland known as the Ruhr – sits the city of Essen, the European capital of culture 2010. WSP opened an office in Essen just over a year ago to service a growing portfolio of clients in the region. Amongst its flagship projects is the Küppersmühle Museum for Modern Art.



THE DESIGN OF THE MUSEUM EXTENSION PRESENTS A SIGNIFICANT STRUCTURAL ENGINEERING CHALLENGE



For the five million people who live in the Ruhr, projects to transform redundant industrial buildings are fairly familiar, yet none has caught the imagination quite so much as the extension to the Küppersmühle Museum on the Rhine, due to open in 2011.

The conversion of a former grain mill, which has been empty since 1972, is one of the highlights of a comprehensive master plan by Sir Norman Foster to renovate, redefine and revive the Ruhr. WSP has been involved from the outset and when completed, the striking building will house modern art.

Frank Milbrath, Project Manager at WSP CBP, explains how his team's involvement has grown: "We were first appointed to this project back in 2008. Initially, it was a project management role. During 2009, however, we were drawn into technical building services. Then in June this year, we were commissioned for tender and construction services."

The design of the museum extension presents a significant structural engineering challenge. The extension comprises a 1,350-tonne cube – 55 metres long, 29 metres wide and 17 metres high – fitted as a suspended beam on to the 36-metre tall silo building of the Küppersmühle.

The silo is being strengthened with a reinforced concrete supporting structure and the steel body-shells of the silos are being used as lost formwork. The innovative secondary facade, made of single-layer ETFE foil, under tension from all sides, is believed to be unique in this size of construction.

When complete, the extension will completely transform the building and represent a stunning achievement for the architects, Basel-based Herzog & de Meuron, who also worked on the original conversion of the mill in the late 1990s.

"It is a real privilege to work on such an amazing project," says Frank Milbrath. "It will give the district of river-side mills and warehouses, formerly known as the 'breadbasket of the Ruhr,' a whole new lease of life."



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AIMING FOR ZERO CARBON

“The global sustainability market is constantly innovating, as regulatory demands, national sustainability funding and stakeholder requirements push the boundaries of what is needed and what can be achieved.”

David Bownass, an expert in energy efficiency at WSP, explains how he sees the future unfolding in the challenging journey towards zero carbon.

“WSP has many credible projects that provide the foundations of the next steps in the journey to zero carbon and holistically sustainable developments.

“Three sustainable buildings case studies from across our global businesses are presented opposite. They are representative of our developing leadership in the market.

“Looking forward, projects like these will provide the learning that we as a business and the industry as whole need to help make the transition to zero carbon buildings. Future zero carbon buildings will continue to squeeze out energy demand in use through a combination of educating end users, passive design and new and existing technologies, while also efficiently generating low or zero carbon energy on site. However in most applications, particularly in urban environments, it is unlikely that these actions alone will meet the

target of zero carbon. So the changing demands of buildings will have to be balanced by significant infrastructure improvements that synergistically work with the buildings and their occupants.

“We already have the foundations for the next steps; we continue to innovate not just in our technical solutions but in how we effectively provide them; we understand our clients and their needs in terms of generating value, and, working together, I look forward to what will be achieved in the future.”



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THE BEST IN SUSTAINABLE HEALTHCARE

Great Ormond Street Hospital for Children NHS Trust (GOSH) – one of the world's leading children's hospitals – has partnered with the EU BUILD HEALTH programme to help the healthcare sector make the right decisions on energy use and optimising comfort for patients, staff and visitors.

GOSH needs to refurbish and upgrade its facilities in London to meet the demands of modern clinical care and has an extensive four-phase development programme to replace early 20th-century buildings on the site by 2025.

As a key consultant providing structural and building engineering advice, WSP is now involved in the

second phase of the programme, which will take six years to complete.

At the outset GOSH wanted a sustainable, leading-edge clinical facility employing low-energy solutions. WSP's design solution included de-centralised interconnected primary heating and cooling systems creating an energy loop, CCHP, mixed-mode ventilation, high-performance building façade, a green roof, reduced cement content resulting in reduced embodied energy and off-site construction.

When the 3MW CCHP installation is complete in 2016, the installation will reduce the GOSH campus's CO₂ emissions by more than 3,000 tonnes per year and the building

will achieve a BRE-assessed NEAT excellent rating, making GOSH one of the most innovative healthcare clinical facilities in Europe.

Paul Naish, WSP Director leading the project, explains why his team is so proud to be involved: "We are lead contributors to a sustainability strategy that has already won awards for the energy savings it is likely to yield – a Building Better Healthcare Awards 2008 for Best Environmental Strategy and Building Better Healthcare Awards 2009 for Best Ecological Product.

"We've also made moves to futureproof the buildings. For example, there is capability to make a switch to bio-fuel when supplies become available."



MELBOURNE UNIVERSITY ACHIEVES 46% ENERGY DRIVE-DOWN

Melbourne University has almost halved the electricity consumption of its new Faculty of Economics and Commerce building compared with three existing similar buildings on the campus. The cost saving for the university has been estimated at approximately \$260,000 (Australian dollars) per year.

WSP Lincolne Scott and Built Ecology provided an integrated service that included building services and sustainable design to both the base building and fit-out. Built Ecology provided post-occupancy tuning.

David Jarratt, Director and National Leader for Built Ecology said of the 46% power saving in the 16-storey building: "This is an impressive result, particularly when viewed relative to the very high equipment power consumption in the lower half of the building, which is used for teaching, with up to 13 hours of operation a day and computers running 24 hours per day."

The new building features chilled-beam technology and significant reduction in potable water usage through efficient fixtures and fittings,

rain water reuse, adiabatic coolers and black-water recycling.

Unusually, the project specified the use of passive chilled beams manufactured in Australia, resulting in a reduction in transport embodied energy and emissions.

The building is the first Victorian university building rated under the Green Building Council of Australia's Green Star Education tool and it was awarded a 5 Star Green Star Education (Pilot) rating, representing Australian Best Practice in sustainability.



SUSTAINABLE RETRO-FITTING IN ROSENGÅRD

In Rosengård, Malmö, the housing co-operative HSB Hilda brf, is striving to use 50% renewable energy by 2014 and become energy self-sufficient within 10 years. What is remarkable about this project, in which WSP Sweden is one of the key advisors, is that the energy savings will be achieved through a retrofit project, rather than new-build.

Rosengård comprises eight high-rise and eight low-rise apartment blocks built in the late 1960s and the 2500 residents will all play a role in the sustainable retrofit.

Charlotte Hauksson of WSP explains: "The quantity and variety of sustainable measures that Rosengård will implement simultaneously, in such a short period of time, make this project stand out. The whole community will need to be involved in making Rosengård resource-efficient and economically sound, comfortable, safe and accessible."

The bold vision and the ambitious plan will need external funding to be fully implemented. Immediate measures include fitting new pipes for hot and cold water and sewage disposal, establishing the infrastructure for individualised

water metering and household waste collection, via kitchen sink waste disposal mills, for biogas production.

Façades will get an extra layer of insulation, energy saving radiators and windows will be installed, the new ventilation system will reuse heated indoor air and new lighting for shared areas will operate on

solar energy. Solar panels and collectors will provide electricity and hot water; low-rise buildings will be clad with green roofs and rainwater harvesting will be introduced. Sustainable transport initiatives will include an electrical bicycle pool and real time display of bus and train service information in the building stair-wells.



Devising an assessment methodology for carbon emissions is complex and demands meticulous attention to detail. Jon Taylor and Mike Huisenga, who work for WSP in the US, have brought a broadly similar approach to two very different industries in a bid to drive low carbon strategies through a recognised system of measurement. Here they explain their world of numbers and the real-world problems they are helping to solve.

WHY

METHODOLOGY



...THIS NEW METHODOLOGY CAN HELP CAPTURE METHANE FROM ABANDONED COAL MINES, WHICH WOULD OTHERWISE CONTINUE TO VENT TO ATMOSPHERE...



THE GLOBAL MINING INDUSTRY...

Mike Huisenga has developed a methodology for WSP client, Vessels Coal Gas Inc., relating to fugitive methane emissions from abandoned coal mines. The methodology has recently been successfully validated by the Voluntary Carbon Standard (VCS) Program and approved for use worldwide.

Vessels Coal Gas, which acquires methane-producing assets and operations in the Rocky Mountain and Appalachian coal basins, recognised that by getting emission reductions certified for sale in voluntary carbon markets, they could create a valuable revenue stream and at the same time drive the mining industry towards investment in emission

reductions and low carbon solutions.

“To be certified, voluntary carbon offsets must result from activities that go beyond business-as-usual, and must be measurable, permanent and independently verified,” explains Mike Huisenga. “We had to work out the details by which engineering estimates of emission reductions could be calculated for this type of project, and we had to show that these reductions met the ‘additionality criterion’; i.e. that they were net reductions compared to business-as-usual.

“Project developers using this new methodology can capture methane from abandoned coal mines, which would otherwise continue to vent to atmosphere, then either scrub the gas to

pipeline natural gas quality and inject it into natural gas transmission lines or use it as fuel to generate heat and/or power. The revenue stream created by the sale of the projects’ carbon offsets can be used to improve the financial performance of these projects, thereby helping to justify their capital expense.”

This work is the latest in a series of achievements in the methodology arena, starting with co-authoring the world’s first methodology to be submitted to the governing bodies of the Kyoto Clean Development Mechanism.

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A methodology is a technical document that lays out in precise detail the step-by-step process by which a series of engineering calculations are made to arrive at an estimate of the net reduction in carbon emissions that the project will produce.

The methodology also argues the case for why the particular project will produce net carbon emission reductions which are additional to the carbon emission reductions that would have occurred without the project.

Finally, the methodology lays out in detail the actions that are required to accomplish monitoring and verification of those emission reductions over time.

THIS WILL ULTIMATELY HELP TO REDUCE THE GLOBAL FOOTPRINT OF ALL INDUSTRIES

MATTERS...

THE GLOBAL ICT INDUSTRY...

Jon Taylor's team in San Francisco has been working with the Boston Consulting Group (BCG) on a methodology to calculate the carbon-saving potential of products and services from the information and communication technologies (ICT) sector.

Developed for the Global e-Sustainability Initiative (GeSI), an international partnership of ICT companies, the project involved 18 GeSI member companies, including AT&T, BT, Cisco, Microsoft, Nokia Siemens Networks, and Verizon.

Jon Taylor explained: "The fundamentals of the assessment methodology came down to Life Cycle Assessment (LCA) guidelines as defined by ISO LCA standards. The methodology enables the quantification of emissions saved when ICT solutions are

applied. Automating or digitising a process and the use of smart motors, logistics or smart grids, are a few examples of how ICT can reduce emissions."

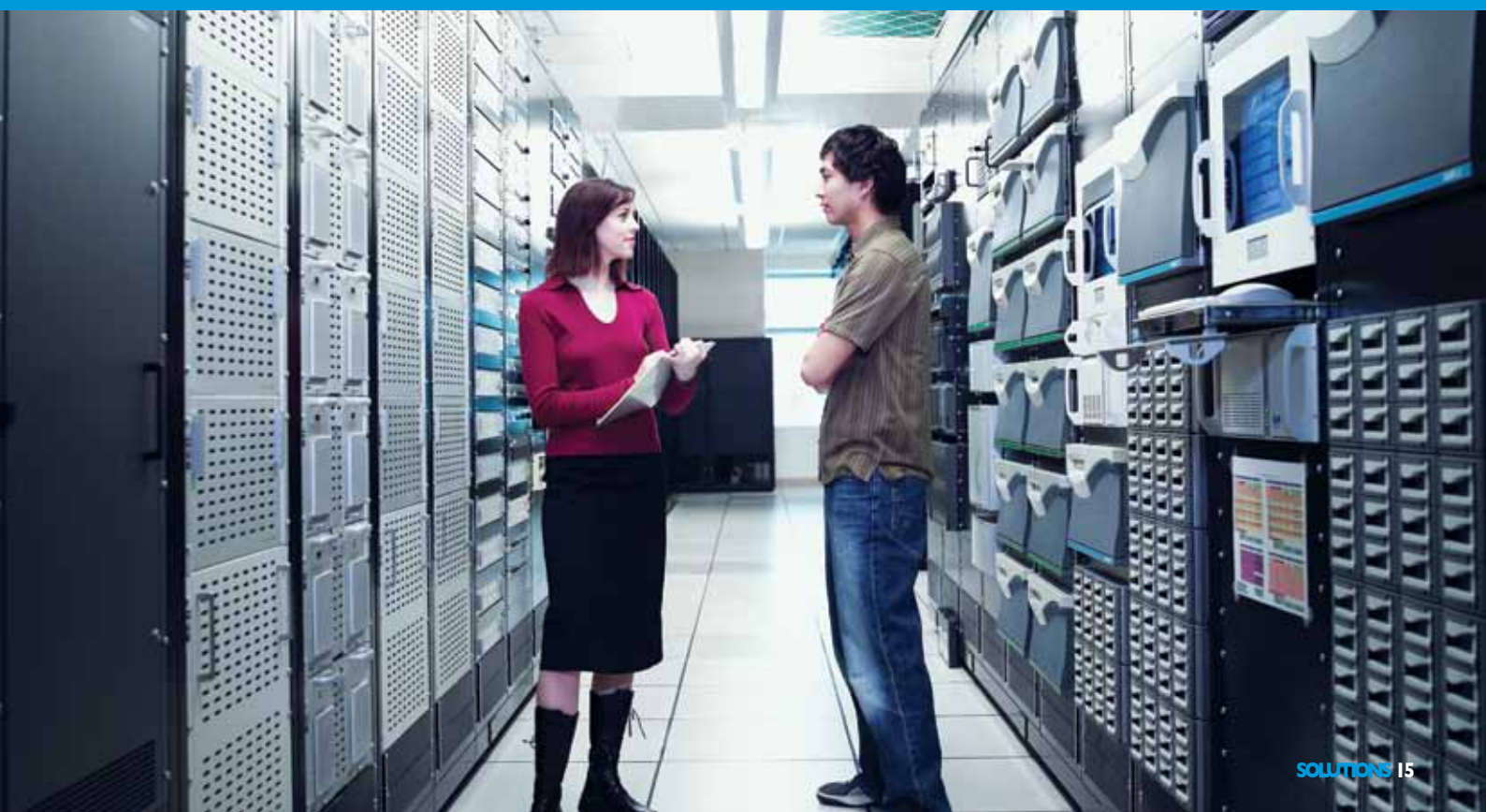
GeSI's SMART 2020 report, published in 2008, estimates ICT solutions could cut global greenhouse gas emissions by as much as 15% by 2020. "Applying this assessment methodology will help to quantify the benefits of different ICT products in a consistent manner and enable decisions based on carbon benefit," says Jon.

Evaluating the carbon-reducing impacts of ICT: An Assessment Methodology is available on the GeSI website (www.gesi.org/ReportsPublications/AssessmentMethodology.aspx).

"This will ultimately help reduce the global footprint of all industries; allowing stakeholders to understand better the positive impacts of ICT solutions, and thus drive higher adoption of new efficient technologies and lead to greater carbon reduction globally.

"We're delighted to have contributed to the methodology and WSP is well placed to help companies in all industries work through this type of analysis."

Further information:
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MILESTONES

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> In New York, WSP Cantor Seinuk has been commissioned to provide full structural engineering services for a 33-storey, 365,000 sq ft residential tower for developer Forest City Ratner and Obelisk Architectural Consultants together with SHoP Architects. The tower is the first of 16 mixed-use, commercial and residential high-rise buildings planned to be built over the train yard that is utilised by the Long Island Rail Road.

> After nine months of preconstruction planning and 30 months of intense construction activity the M1 widening scheme between Junctions 25 and 28 is now operating both four-lane carriageways at full speed and capacity. This major motorway-widening project designed by WSP in partnership with Gifford has delivered a major infrastructure upgrade along a 24 km stretch of this very busy motorway.

> Enabling works have begun for the \$772 million Mall of Egypt, one of the biggest shopping centres in North Africa. WSP is providing all engineering services, including structural, M&E, fire, vertical transportation and transportation.

> A study commissioned by Microsoft and conducted by WSP and Accenture reveals that businesses choosing to run their applications through cloud computing can reduce energy consumption and carbon emissions by a net of 30% or more, compared

to using traditional on-site server rooms.

> WSP has been appointed to undertake investigations for improvements to Road 222, Varmdoleden-Skurubron in Stockholm, including the construction of a new bridge.

> We have continued to strengthen our relationship with retailer Tesco, and have recently undertaken 120 hot and cold surveys across their UK estate. WSP undertook building services and sustainability consultancy for the recently completed Southam store, which boasts the UK's largest grid-connected PV installation, generating a peak output of 100 kW and covering the entire roof area of the 20,000 sq ft store.

> The City of Dortmund has commissioned WSP CBP's project management team to run an architectural competition throughout the EU for the design of the German Soccer Federation's soccer museum in Dortmund, as part of the tendering procedure for freelance and professional services.

> In the UK, WSP has been appointed as the Independent Certifier for the construction of two new secondary schools under the Building Schools for the Future programme for each of three local authorities: Wolverhampton City Council; London Borough of Barking and Dagenham; and London Borough of Greenwich

> WSP Hong Kong has been awarded the contract to carry out civil, structural

and geotechnical engineering consultancy for the master planning of the whole site and full design of Lot 1 of a large-scale urban redevelopment at Chancheng, Foshan in China – a 1,000,000 m² residential district with shopping malls, offices, gardens and other facilities.

> With a growing number of project wins in Vietnam, including the 65,000 m² headquarters of the Vietcombank and the 115,000 m² TNVC Tower, WSP Lincolne Scott has opened a new office in Ho Chi Minh City.

> WSP SELLS has been awarded a two-year on-call inspection services contract, with a two-year extension option, for the Newport Pell Suspension Bridge in Newport, RI, by the Rhode Island Turnpike and Bridge Authority.

> WSP Environment & Energy has been selected as a US consultancy partner to the Carbon Disclosure Project (CDP). This means that WSP is now referenced by CDP as a US approved partner to help reporting organisations measure and manage their greenhouse gas emissions.

WSP IN PARTNERSHIP WITH GIFFORD HAS DELIVERED A MAJOR INFRASTRUCTURE UPGRADE ALONG A 24 KM STRETCH OF THE M1

> In Bucharest, WSP has completed the fit-out of the Romanian headquarters of PricewaterhouseCoopers and Royal Bank of Scotland in one of the first office buildings in Bucharest to have BREEAM accreditation. WSP was involved in the projects from concept-design stage through to the full relocation of staff, which completed at the end of July 2010.

> WSP is one of five consortium members in a successful team appointed to Project 'Jessica' – a two-year framework with the European Investment Bank (EIB), with an additional two-year option, for Urban Development and Regeneration for the 27 countries of the EU. Countries will apply to the EIB for EU funds to regenerate areas. WSP is providing all Development Planning, Development Infrastructure and Urban Planning.

APPOINTMENTS

> In June, Paul Dollin was appointed as Managing Director of WSP UK and Executive Director of WSP Group plc. He was formerly Managing Director of Design and Engineering at WS Atkins.

> WSP Flack + Kurtz has appointed new Managing Directors to two of its regional divisions – Allan Montpellier becomes MD for Boston and Tom Marseille will be the Seattle MD.

> Dr Paul Toyne has joined WSP as Global Head of Sustainability to lead the continuing development and implementation of WSP's Sustainability Strategy.

ENABLING WORKS HAVE COMMENCED FOR THE \$772 MILLION MALL OF EGYPT