Sustainable Construction Materials and Technologies

Monday, June 11, 2007 to Wednesday, June 13, 2007
Opening reception Sunday, June 10, 2007
The construction materials industry is a major user of the world’s resources. While enormous progress has been made towards sustainability, the scope and opportunities for further improvements are significant. This conference is intended to highlight case studies and research that show new and innovative ways of achieving sustainability of construction materials and technologies.

Over 180 papers from over 40 countries will be presented which will be of interest to:

Civil Engineers
Architects
Construction Managers
and all other professions related to the construction industry.

Committee Members

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Tarun R. Naik, UWM Center for By-Products Utilization
Eshmaiel Ganjian, Coventry University
Rudolph N. Kraus, UWM Center for By-Products Utilization
Chris March, Coventry University
Mark Tyrer, Imperial College London

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Eshmaiel Ganjian, Coventry University
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Chris March, Coventry University
Bruce W. Ramme, We Energies, Milwaukee, Wisconsin
Mark Tyrer, Imperial College London
Julia Stegemann, University College London
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Steve Goodhew, Plymouth University
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Venue

The conference will be held at Coventry University. The campus is in the City-Centre within easy walking distance of a wide range of shops and other facilities. The City of Coventry is in the centre of England and is just 15 minutes from Birmingham airport and 90 minutes from London Heathrow by car.

Coventry was the original centre of the British car industry and, in particular, Jaguar cars. The City-Centre has numerous shops, cafes, pubs, and museums and many historic buildings including the three cathedrals. The first one was demolished during the dissolution of the monasteries and only the foundations remain. The second one was bombed in the great raid of 1940 and the walls and tower remain. The third one is one of the most famous examples of 20th century architecture and a major tourist attraction.

On each day of the conference lunch will be served in St Mary’s Guildhall. This spectacular medieval hall is just 3 minutes walk from the conference venue.

St Mary’s Guildhall served as the centre of King Henry VI’s court during the Wars of the Roses and as a prison to Mary, Queen of Scots. William Shakespeare is thought to have staged his plays here and writer George Elliot, who knew the hall well, used it as the setting for a scene in one of her novels. Its kitchens have prepared banquets for visiting monarchs and have fed starving weavers. It has been the good-humoured starting point for the famous Godiva Processions and been damaged in violent election riots. It was scarred by, but survived, the Blitz of Coventry during the Second World War and it continues to this day to welcome visitors from all over the world.

Coventry Cathedral
Daily Programme

Tours will be subject to an additional charge. Please note that tours may be cancelled if under-subscribed and that tickets may not be available if they are over-subscribed.

Sunday 10 June 2007
8.00 am-12.00 pm Pre-conference tour to Stoneleigh Abbey
Founded in 1154 by a group of Cistercian monks, Stoneleigh Abbey reflects a rich mixture of more than 800 years of history. The estate was the home of the Leigh family from 1561 until the late twentieth century. Many famous people have connections with the Abbey: Charles I was entertained here when the gates of Coventry were closed against him, Jane Austen stayed at the Abbey and uses descriptions of its grand interiors and gardens in two of her novels, and in 1858 Queen Victoria and Prince Albert stayed at Stoneleigh.

2.00 pm-4.00 pm Pre-conference walking tour of Coventry
The city of three cathedrals, a medieval Guildhall where Mary Queen of Scots was held, the legend of Lady Godiva, and the largest transport museum in the World will be featured in the tour. Coventry was also the place where a Parliament was held and was once the capital of England, whilst writers such as George Eliot were educated here and she later used the city as a backdrop to two of her novels.

Opening Reception, from 5 pm: Coventry Transport Museum
Welcoming addresses from the Vice Chancellor of Coventry University and the Lord Mayor of Coventry. A buffet will be served. Entertainment with ‘Lady Godiva’ and visit to the Coventry Transport Museum exhibits.

Monday 11 June
Conference presentations: Opening plenary session followed by four parallel sessions
Lunch in St Mary’s Guildhall
Accompanying persons tour: Warwick and Stratford upon Avon
Warwick Castle was the home of the Earls of Warwick and is now owned by Madame Tussauds. Besides being considered the most complete castle in England, it also tells a story of its history and the part it has played in The War of The Roses, The English Civil War, and the 100 year with France. Explore and see the Kingmaker exhibition of 1471, The Royal Party visit of 1898, and, of course, the Great Hall which has seen much entertainment over the years.
**Stratford upon Avon**
The birthplace of William Shakespeare and now an attractive town that keeps alive the story and plays of this great writer. Visit any of the five houses associated with this great man and explore the town and its links to English history including the canal system which runs to the river Avon. With all its gardens, it is an attractive place to spend time and explore its historical environment.

At the end of the conference sessions coaches will be provided to

**The Royal Shakespeare Theatre at Stratford upon Avon.**
We have reserved a limited number of tickets to a performance of King Lear with Ian McKellen. Delegates wishing to attend should reserve a ticket on the conference registration web site as soon as possible. All delegates may enjoy the delightful riverside town and its many excellent restaurants.

**Tuesday 12 June**
Conference presentations: Four parallel sessions. Lunch in St Mary’s Guildhall

**Accompanying persons tour Oxford & Blenheim Palace**
A city that is famous for the quality of its education and is linked to many famous people around the world. Nearly 30 of this country’s Prime Ministers have been educated here including Tony Blair and Margaret Thatcher, while others like Bill Clinton also attended. Explore the links to such people as Lewis Carroll and see where Alice in Wonderland was created and walk along the floors featured in all of the Harry Potter films. Find out more about the work of C. S. Lewis and others who over the 800 years of existence, have attended one of the world’s greatest places to be educated.

**Oxford**

**Blenheim Palace**
The birthplace of Winston Churchill, one of this country’s most famous Prime Ministers and a house that compares to no other in this country with amazing views.

**Conference Dinner.**
The dinner will be held at the Coventry Hilton hotel. (Transport provided) Entertainment with the Ladyes of Coombe.

**Wednesday 13 June**
Conference presentations: Four parallel sessions followed by closing plenary session Lunch in St Mary’s Guildhall

**Accompanying persons tour to Birmingham**
A city of a 1,000 trades that grew up in the industrial revolution and is now this country’s second largest city. Explore its past by visiting the Jewellery Quarter, something unique in this country and find out about its part in producing pens for the World. Learn more about its link to the Cadbury family and see where J. R. Tolkien got some of his inspiration for Lord of the Rings. Also take time to shop in the recently rebuilt Bull Ring shopping complex.

**Thursday 14 Jun**
Post-conference day tour to the Cotswolds
The Cotswolds is always an attractive and beautiful place and one of the most visited parts of England since the Romans came nearly 2,000 years ago. Today you can explore the heart of the area by visiting Bourton on the Water, Stow on the Wold, Broadway and many other places in this attractive part of England, best seen during the summer months. Have lunch in restaurants overlooking a stream running down the middle of the village and enjoy the splendour of the famous and historic Cotswold stone houses.
Opening session

Koji Sakai
Kagawa University
Contributions from Concrete Industry towards Sustainable Development

Jean Pera
Institut National des Sciences Appliquees de Lyon
Development of insoluble gypsum using calcium sulfonate cement

Peter Claise
Coventry University
Site trials of concrete with a very low carbon footprint.

Tarun R. Naik
University of Wisconsin-Milwaukee
Sustainability and the Future of Cement and Concrete Industries

Session in honour of Professor Nemkumar Banthia

Nemkumar Banthia is a Professor of Civil Engineering, Distinguished University Scholar and a Canada Research Chair at the University of British Columbia, Vancouver, Canada. His main research interests are in cement-based and polymer-based fiber reinforced composites, with particular emphasis on testing and standardization, fracture behavior, constitutive modeling, strain-rate effects, and repair performance. He has edited/co-edited ten volumes, published over 200 technical papers, and holds three international patents.

Ibrahim Bennimokrane, Anir El Ragaby, Ebah El-Salakawy
University Of Sherbrooke
Fatigue Performance Of Concrete Bridge Deck Slabs Reinforced With Glass FRP Reinforcing Bars

Vivek Bindiganavile, Nemkumar Banthia
University Of Alberta, Edmonton
Parametric Studies On Rebound In Dry-Mix Shotcrete

L. Corninoli, C. Fallai, G.A. Pizzari, L. Sorelli
Universita Degli Studi Di Brescia
Hybrid Fiber Reinforced Concrete For Enhanced Structural Elements

Takayuki Kojima , Kenta Hibino
Japan Nuclear Energy Safety Organization
Fem Study On The Bond Behaviors Between Sprayed Fiber Reinforced Plastics (Fsp) And Concrete By The Use Of Discrete Elements

Rudolph N. Kraus, Tarun R. Naik, Yoon-moon Chun
University of Wisconsin - Milwaukee
Recycling of Industrial and Post-Consumer By-Products In Flowable Self-Compacting Skurry

Sidney Mindess
University Of British Columbia
Thirty Years Of Fibre Reinforced Concrete Research At The University Of British Columbia

Afhab A. Mufti, Baider Bakht, Gamil Tadros
University Of Manitoba
Second Generation Steel-Free Deck Slabs For Bridge Rehabilitation

Sušterić J, Jovici V, Zač A, Ercegović R
Irma Institute For Research In Materials And Applications
Early Age Behaviour Of Fibre Reinforced Shotcrete

Lucie Vandewalle
Mechanical Properties Of Hybrid Fiber Reinforced Concrete

M. H. Zhang, M. S. H. Sharif, G. Lu
National University Of Singapore
Resistance Of High-Strength Fiber-Reinforced Concrete To Projectile Impact

Session in honour of Professor Giacomo Moriconi

Professor Moriconi of Universita Politecnica Delle Marche has contributed to the state-of-the-art in the area of concrete durability and sustainable construction. His contributions had the advantage of the opportunity he had as a professional engineer to connect research activity to experience in the field. As a professional engineer he was able to implement an effective technology transfer policy as applied to research and the construction industry in a synergistic sense. Over time, this methodology resulted in improved standards for civil engineering construction projects and a culture of high-grade training for the work force in the construction industries.

I. Widjatmoko, A. Dunster, M. Moultrie
Scott Wilson, Consulting Engineers
Performance and benefits from using waste plastic-based aggregate in asphalts

P. Jiareekul, S. Sunarjono, S.E. Zoorob, N.H. Thom
Nottingham Centre for Pavement Engineering
Early life performance of cement and foamed bitumen stabilised reclaimed asphalt pavement under simulated trafficking

Musanat H Mohammed, Gordon Airey, Andrew Collop, Chris Hayes, Tony Parry
Nottingham Centre for Pavement Engineering
Synthesis of asphalt binders from renewable resources and their rheological properties

Xavier Carbonneau , Jean Pierre Hennat , Francis Letraudin
Colas group
Environmentally-friendly energy-saving mixes. A safe response to the problem of “warm” mixes

Rebecca Cooper, Paul Edwards, Tuts Kagga, James Brown, Andrew Dawson
Scott Wilson, Consulting Engineers
Using Post-Consumer Tyres to Deliver Sustainable Construction for Public Rights of Way

I Carswell, J C Nicholls, R C Elliott, J Harris, A Sell, J T Williams
TRL Limited
Feasibility of Recycling Thin Surfacing Back into Thin Surfacing Systems

Closing session

K. Sakata, T. Ayano, T. Fuji
Okayama University
Use of steel-making slag in concrete as sustainable construction material

Giacomo Moriconi
Università Politecnica Delle Marche
Waste materials in concrete technology: sustainability or durability

Nery Banthia
University of British Columbia
Is Fibre Reinforced Concrete a Sustainable Material?

A. A. Ramezanianpour
Amirkabir University Of Technology, Tehran
Durability Of Concretes Containing Supplementary Cementing Materials In Marine Environments

The Nottingham Transportation Engineering Centre Session

The Nottingham Transportation Engineering Centre (NTEC) is part of the School of Civil Engineering at the University of Nottingham. It provides internationally leading research, education, and laboratory facilities for transportation infrastructure and related applications including pavement engineering.

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**Sustainable alternatives for cementitious materials in concrete**

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<td>M. Maslehuddin, O.S.B. Al-Amoudi, M. Shanneen, M. K. Rehman, M. Ibrahim</td>
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<td>D Bondar, C. J Lynsdale, A A Ramezanipour</td>
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**Note:** The table includes authors, institutions, and titles related to sustainable construction, focusing on various aspects such as cement, waste materials, and environmental impacts.
Making concrete sustainable

A. Katsanos, S. O. Nwaubani, M. Mulheron
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“Green”, Non-Corrosive De-Icers: A Remedy For Concrete Bridge Corrosion, But Can They Harm The Paste?

Panagiotis Koulouris, Sunny Nwaubani, Mike Mulheron, Athanasios Routoulas
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Non-Destructive Monitoring Of The Corrosion Of Reinforcing Steel With The Use Of Strain Gauges.

D.V. Reddy, J.C. Bolivar, R. Wheeler, T. Iverson, S. Hincapie, V. Gutierrez
Florida Atlantic University
Use Of Supplementary Cementing Materials For Cost-Effective Repair Of Marine Corrosion Damage

Taiga Suginooue, Hiroshi Seki
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Change Of Concrete Properties Due To Impressed Current Of Cathodic Protection

E Farahi, P Purnell, N R Short
University of Warwick
Advanced Calcareous Ceramics via Novel Green Processing and Super-critical Carbonation.

Takafumi Noguchi , Jung-Mi Kim , Satoshi Fujimoto Hitonori Nagai
University of Tokyo
Evaluation and Minimization of Life Cycle Environmental Risk of Concrete Structures

S. J. Shaw, C.L. Page, A.R. Brough, J.P. Forth and M.M. Page, T.R. Jones, M. Carsana
University of Leeds
Supercritical Carbonation of Casamic

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Heat barrier for concrete

Bhavin Bhayari , Thomas Holsen, Narayanan Neelilathal
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Investigations On The Efficiency Of Enhanced Porosity Concrete In Containing Vehicular Oil Spills

Yixin Shao, Arthur Zhou
Mcgill University
CO₂ Uptake By Concrete Hardened In Flue Gas

M. Marrocchi, M. Nobili, A. Telesca, G. L. Valenti,
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Early Hydration Of Calcium Sulfoaluminate-Based Cements For Structural Applications

L.J. Vandepeperre, M. Liska, A. Al-Taabaa
University Of Cambridge
Reactive Magnesium Oxide Cements : Properties And Applications

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John N Karadelis, Zhou Jiebin
Coventry University
Optimum Design For Sustainable Concrete Pavements & Overlays, The Case Of Warping At The Edges.

John N Karadelis, Aftab Khan
Coventry University
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Hanaa El Sayad, Hadid S. Haddad
Cairo University
Effect Of Loading Level, Cooling Regime, Polypropylene Fibers, And Coating Type On The Behavior Of High Strength Concrete Columns In Fire

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Impact Resistance Of Single-Span Concrete Frames Reinforced By Polypropylene Fibers

Hanaa El Sayad
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A.A. Maghsooeli, S.Mohamad pour
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A. Sadromontazi, M.A. Mehrdad, F. Balalai, K. Ashinina, A. Azhari
University Of Gulan
Comparison Of The Mechanical Properties Of SCC With Rice-Husk Ash And Normal Concrete.

A. Sadromontazi, A.H. Modarai, J. Bierenjani, L. Bargerme, A. Azhari, K. Ashinina
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M.H. Baluch, M.K. Rahman, A.H. Al-Gadhib, A. Raza
King Fahd University of Petroleum and Minerals
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Ebertt Persson
Lund Institute Of Technology
Thaumasite Sulphate Attack On Self Compacting Concrete With Limestone Filler
Sustainable use of gypsum and lime

  - Scott Wilson Ltd
  - Demonstrating How Plasterboard Can Be Collected More Efficiently On Construction And Demolition Sites In The UK

- Mehmet Ali Yurdusev, Ahmet Al-Kumanliu Iu, Yüksel Abalı, M. Sadrettin Zeybek, Fethullah Canpolat
  - Celal Bayar University
  - Neural Investigation Of Phosphogypsum Use In Light Brick Production

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- Christian Meyer
  - Columbia University
  - The Economics of Recycling in the United States

- Mary Christiansen
  - Milwaukee School Of Engineering
  - Economic And Waste Diversion Benefits Of Construction Waste Recycling

- G. Craig Plunk, Dave Goss
  - Boral Material Technologies Inc
  - Impact Of Federal Environmental Air Emission Policies On Fly Ash Marketing In The United States

- Tamara F. Vandivort, Paul Ziemkiewicz
  - West Virginia University
  - Environmental Concerns And Public Perception Related To The Use Of Coal Combustion By-Products For Sustainable Developments

- Dean Smith, Bill Boone
  - USACE - Construction Engineering Research Laboratories (CERL)
  - Sustainable Approaches To Landfill Diversion Utilizing Technology
### Use of organic materials in sustainable construction

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<td>Brenda K.C. Chan, A.W.L. Dudeney</td>
<td>Imperial College London</td>
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<td>Marcia R. Q. Silva And Tarun R. Naik</td>
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<td>Chunwaiq Qian Hongbo Wang, Xiulan Wang</td>
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### Sustainable use of soil and natural fibres

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<td>O. A. Abaza, An-Najah National University, Nablus, Palestine</td>
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### Sustainable technologies

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<td>Delegates</td>
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<td>people before February 1, 2007</td>
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<td>Authors, Committee members, students, retired</td>
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