

Keynote Lectures

Concrete bridges: New demands and solutions

J. Combault

How The Netherlands survive, a world wide example

S. Schaap

The World Champions Soccer in South Africa in 2010

D. Jordaan

Dam safety in China and the life span evaluation of old concrete dams

J. Jia, C. Zheng & C. Zhao

The Rijksmuseum in Amsterdam

A. Ortiz

Prefab, the American Way

T.J. D'Arcy on behalf of PCI

The European Standard for Prefabrication

M. Menegotto

Fibres in Concrete, Research, Rules, Practice

E.H. Horst Falkner

Public Private Partnership, tool or trend

A. Echberg

The construction project of the Sagrada Família

J. Gómez, R. Espel & J. Faulí

Oral Presentations

Life cycle design

Assessment of corrosion in reinforced concrete beams

D.I. Banic, D. Bjegovic & D. Tkalcic

Corrosion of reinforcement bars is not anymore inevitability

P. Guiraud & F. Moulinier

New aspects in durability bridge design

M. Empelmann, V. Henke, G. Heumann & M. Wichers

Carbon dioxide as a stimulus for life cycle thinking in cement and carbon neutral concrete building

P.A. Lanser & A.M. Burger

Service life design of concrete structures by numerical modelling of chloride ingress

M.M.R. Boutz, G. van der Wegen, P.E. Roelfstra & R. Haverkort

Influence of curing on the pore structure of concrete

W.J. Bouwmeester – van den Bos & E. Schlangen

Life cycle management of infrastructures: Integration of disciplines as key success factor

A. van der Horst

Residual service-life of concrete façade structures with reinforcement in carbonated concrete in Nordic climate

J.S. Mattila & M.J. Pentti

The role of Controlled Permeability Formwork in life cycle design

P. McKenna & C. Baxi

Designed performance sustainable concrete

B.M. Piscaer & S.W. Danielsen

Tailor-made concrete structures – Case studies from projects worldwide

C.K. Edvardsen

Rebuilding Le Corbusier's World Exhibition Pavilion; The Poème Electronique in Brussels, 1958

R. Nijssse

Why historic concrete buildings need holistic surveys

H.A. Heinemann

Design strategies for the future

Expansion joints with low noise emission

T. Spuler, G. Moor & C. O'Suilleabhain

Overview of PCI's research and development program

C.D. Sutton & P. Johal

Research on volume change movement and forces in precast concrete buildings

G. Klein & R. Lindenberg

The PCI headed stud anchorage research program: Scope and highlights of findings

N.S. Anderson & D.F. Meinheit

Development of a seismic design methodology for precast concrete floor diaphragms

R.B. Fleischman, C.J. Naito & J. Restrepo

Development of a rational design methodology for precast L-shaped spandrel beams

G. Lucier, C. Walter, S. Rizkalla, P. Zia, G. Klein & D. Logan

Underground structures

Real opportunities for ultra high strength concrete in tunneling

T.W. Groeneweg, C.B.M. Blom & J.C. Walraven

North/South Line Amsterdam, underground station CS on Station Island – Complex building techniques on an artificial island

R.M. van der Ploeg, J. Dorreman & J.C.W.M. de Wit

Tunnels of improved seismic behaviour

S. Pompeu Santos

Behaviour of 'segmental/meter panels' for basements and subways

D.K. Kanhere & V.T. Ganpule

The New Rijksmuseum – The art of going underground

D.D.J. Grimmelius & A.M. de Roo

Corrosion monitoring for underground and submerged concrete structures – examples and interpretation issues

R.B. Polder, W.H.A. Peelen & G. Leegwater

Designing cast-in-situ FRC tunnel linings

B. Chiaia, A.P. Fantilli & P. Vallini

Concrete tunnel segments with combined traditional and fiber reinforcement

G. Tiberti, G.A. Plizzari, J.C. Walraven & C.B.M. Blom

Fire resistance of concrete tunnel linings

J.L. Vitek

Monitoring and inspection

Segmental bridge behavior during bridge testing

M. Zupcic, D. Banic, D. Tkalcic & Z. Peric

Monitoring the 352 meter long Monaco floating pier

M. de Wit & G. Hovhannessian

Cambers of prestressed precast bridge girders, prediction vs. reality

M. Chandoga, A. Jaros̃evic̃, J. Halvonik, A. Pritula & P. Ps̃enek

Monitoring of electrically isolated post-tensioning tendons

B. Elsener

Remote monitoring: Cost-effective and self-sufficient

T. Spuler, G. Moor & C. O'Suilleabhain

Monitoring of Moscow Covered Center load-carrying structures

A.I. Zvedov & V.R. Falikman

Diagnosis

Performance predictions of bridge structures based on damage pattern detection and extreme value methods

A. Strauss, R. Wendner, K. Bergmeister, U. Santa & D.M. Frangopol

Diagnosis of the state of concrete structures after fire

E. Annerel & L. Taerwe

Chlorides ingress as an environmental load on Krk bridge

I. Stipanovi c̃ Oslakovic̃, D. Bjegovic̃ & D. Mikulic̃

TBM's backfill mortars – Overview – Introduction of Rheological Index

L. Linger, M. Cayrol & L. Boutillon

Structural behavior with reinforcement corrosion

V.I. Carbone, G. Mancini & F. Tondolo

Filling inspection technology of grout in Japan

T. Oshiro, K. Aoki, M. Hara & A. Shoji

Load capacity assessment of “Antonio Dovali Jaime” bridge using static and dynamic tests

O. Ortiz, J. Téllez, F.J. Burgos, A. Patrón, E. Reyes, V. Robles, C. Cremona & M.E. Ruiz-Sandoval

Safety appraisal of an existing bridge via detailed modelling

M. Pimentel, J. Santos & J.A. Figueiras

Cause and repair of detrimentally cracked beam in reinforced concrete bridge pier

M. Yoshizawa, K. Sasaki, T. Usui, J. Sakurai & S. Ikeda

Innovative materials

Design of two reactive powder concrete bridges

M. Rebentrost & R. Annan

Fire resisting concrete

B.P. Van den Bossche

Innovative ultra-high performance concrete structures

G.A. Parsekian, N.G. Shrive, T.G. Brown, J. Kroman, P.J. Seibert, V.H. Perry & A. Boucher

Strengthening of Huisne bridge using Ultra-High-Performance Fibre-Reinforced Concrete

T. Thibaux

Ductal® Pont du Diable footbridge, France

M. Behloul, R. Ricciotti, R.F. Ricciotti, P. Pallot & J. Leboeuf

Shear carrying capacity of Ultra-High Performance Concrete beams

J. Hegger & G. Bertram

High performance materials – Advances in composite constructions

J. Hegger & S. Rauscher

Textile Reinforced Concrete – Realization in applications

J. Hegger, M. Zell & M. Horstmann

Subsequent sealing of buildings made of textile reinforced concrete

R. Mott & W. Brameshuber

Optimized High-Performance Concrete in Grouted Connections

S. Anders & L. Lohaus

Tailored superplasticisers for tailor made concrete structures

M. Corradi, R. Khurana, R. Magarotto & S. Moro

Jointless prestressed concrete viaduct using ECC

M. Fujishiro, K. Suda & Y. Nagata

Pumping of Self Compacting Concrete: An insight into a daily application

D. Feys, R. Verhoeven & G. De Schutter

Replacement of shear reinforcement by steel fibres in pretensioned concrete beams

P. De Pauw, L. Taerwe, N. Van den Bouverie & W. Moerman

Properties and applications of DUCON® A micro-reinforced ultra-high-performance concrete

J. Schneider & J. Reymendt

Deformation behavior of reinforced UHPFRC elements in tension

V. Sigrist & M. Rauch

Structural performance of pretensioned member with Ultra High Strength Fiber Reinforced Concrete

T. Ichinomiya, N. Sogabe, Y. Taira & Y. Hishiki

Measuring the packing density to lower the cement content in concrete

S.A.A.M. Fennis, J.C. Walraven & T.G. Nijland

Development of a bacteria-based self healing concrete

H.M. Jonkers & E. Schlangen

Use of polypropylene fibres to reduce explosive spalling in concretes exposed to fire

J.A. Larbi, A.J.S. Siemes & R.B. Polder

Steel fibre only reinforced concrete in free suspended elevated slabs: Case studies, design assisted by testing route, comparison to the latest SFRC standard documents

X. Destrée & J. Mandl

Evaluation of the bond strength behavior between steel bars and High Strength Fiber Reinforced Self-Compacting Concrete at early ages

F.M. Almeida Filho, M.K. El Debs & A.L.H.C. El Debs

Research on the cracking control and pumpability of HPC in S-C segment of Sutong Bridge

H. Zhang, S.K. Li & J.F. Tao

Development strategies for foamed cement paste

J.U. Pott & L. Lohaus

Expanding the application range of RC-columns by the use of UHPC

M. Empelmann, M. Teutsch & G. Steven

Quality concrete surfaces mean a longer life asset

D.J. Wilson

Textile Reinforced Concrete (TRC) for precast Stay-in-Place formwork elements

I.C. Papantoniou & C.G. Papanicolaou

Bridges utilizing high strength concrete

J. Strasky, I. Terzijski & R. Necas

Codes for the future

Modelling of shear-fracture of fibre-reinforced concrete

G.G. Lee & S.J. Foster

The American P2P initiative

K.W. Day

Dispersion of the mechanical properties of FRC investigated by different bending tests

B. Parmentier, E. De Grove, L. Vandewalle & F. Van Rickstal

BA-Cortex: Learning tools for EC2

C. Lanos, V. Bonamy, P. Guiraud & C. Casandjian

Shear resistance of bridge decks without shear reinforcement

G.A. Rombach & S. Latte

Transverse flexural and torsional strength of Prestressed Precast Hollow-Core Slabs

A. Pisanty

Influence of bond-slip on the behaviour of reinforced concrete beam to column joints

M.L. Beconcini, P. Croce & P. Formichi

Improvement in the plastic rotation evaluation by means of fracture mechanics concepts

M. Corrado, A. Carpinteri, M. Paggi & G. Mancini

Reliability-based code calibration and features affecting probabilistic performance of concrete bridge

I. Paik, S. Shin & C. Shim

Codes for SFRC structures – A Swedish proposal

J. Silfwerbrand

Shear strength in one- and two-way slabs according to the Critical Shear Crack Theory

A. Muttoni & M.F. Ruiz

Strut-and-tie modelling of short span beams

J. Sagaseta & R. Vollum

Modelling of shrinkage induced curvature of cracked concrete beams

R. Mu, J.P. Forth, A.W. Beeby & R. Scott

Investigation of cracks surface roughness and shear transfer strength of cracked HSC

V.P. Mitrofanov

Problems on Harmonization of Ukraine and EU Normative Bases in the Area of Concrete Structures

P. Kryvosheyev, A. Bambura & Yu. Slyusarenko

Developing non linear analysis methods for codes of practice

D.A. Kuchma

Safety with prestained elastic restraints

D.L. Allaix, V.I. Carbone & G. Mancini

Concrete stress blocks of MC 90 and EC2. How safe are they?

L.C.D. Shehata, A.L. Paula & I.A.E.M. Shehata

Shear design of FRC members with little or no conventional shear reinforcement

F. Minelli & G.A. Plizzari

A new future-oriented Model Code for concrete structures

J.C. Walraven & A.J. Bigaj - van Vliet

A model for SFRC beams without shear reinforcement

P. Colajanni, A. Recupero & N. Spinella

Modifying and adapting structures

Seismic response assessment and upgrading of a complex of seven RC buildings using FRPs

T.B. Panagiotakos, A.J. Kosmopoulos & B. Kalias

First full scale application of a structure strengthened with organic prestressing – A case study

P. Pacheco, A. Guerra, P. Borges & H. Coelho

Eliminating bridge piers using stay cables with unconventional layouts

A.M. Ruiz-Teran & A.C. Aparicio

The widening of Los Santos bridge. A case study of a tailor-made structure

H. Corres Peiretti, A. Pérez Caldentey, J. Romo, J. León González, F. Prieto & J. Sánchez Delgado

Strengthening and design of shear beams

N. Randl & J. Kunz

Assessment of remaining structural capacity by computer simulation

J. Cervenka, V. Cervenka, R. Pukl & Z. Janda

Experimental tests on repaired and retrofitted bridge piers

T. Albanesi, D. Lavorato, C. Nuti & S. Santini

Enhanced safety with post-installed punching shear reinforcement

J. Kunz, M.F. Ruiz & A. Muttoni

Strengthening of prestressed viaducts by means of a reinforced concrete overlay

R.W. Keesom, W.J. Bouwmeester – van den Bos, M. van Kaam & A.Q.C. van der Horst

Advanced numerical design for economical cathodic protection for concrete structures

R.B. Polder, W.H.A. Peelen, F. Lollini, E. Redaelli & L. Bertolini

Architectural concrete

Precast facades elements for the new Museum of Acropolis in Athens

A.N. Apergis

Thin post-tensioned concrete shell structures

S. Dallinger & J. Kollegger

Infra-lightweight concrete

M. Schlaich & M. El Zareef

Challenging concrete structure with a blend of architectural fair faced concrete

V. Gupta

Bond behaviour between GFR bars and infra-lightweight concrete

M. El Zareef & M. Schlaich

Design and construction of open deck bridge

T. Abo, M. Ooba, S. Yoda & S. Suzuki

New Amsterdam Public Library (Openbare Bibliotheek Amsterdam)

J. Paul, F. van Berge Hengouwen, H. Mulder & C. Tait van der Putten

Concrete in the optimal network arch

P. Tveit

The new Lisbon indoor sports complex

J.N. Bastos

New Vodafone building in Oporto – A white concrete jagged shell

C.M. Quinaz & A.P. Braga

Innovative footbridges used as urban furniture for our cities for the future

A. González Serrano

Fabric formwork for flexible, architectural concrete

N. Cauberg, B. Parmentier, D. Janssen & M. Mollaert

Developing a modern infrastructure

Offshore foundation in concrete – Cost reduction by serial production

H. Mathis

Design and construction of an immersed concrete tunnel using an integrated dock facility

C. Bauduin & P. Depuydt

Bridges over Timbábé river: High performance concrete in the middle of the jungle

B.P. Van den Bossche

Precast segmental design and construction in China

D. Xu, H. Li & C. Liu

The use of robots and self-compacting concrete for unique concrete structures

L.N. Thrane, T.J. Andersen & D. Mathiesen

Behavior of a multiple spans cable-stayed bridge

S. Arnaud, N. Matsunaga, S. Nagano & J.-P. Ragaru

Development of a new viaduct structure to achieve a high-amenity under-viaduct space

H. Sugisaki, K. Kobayashi, T. Watanabe & S. Ikeno

Study on structural behavior characteristics of concrete filled steel tube girder bridges

W.J. Chin, J.Y. Kang, E.S. Choi & J.W. Lee

Immersed parking facilities

R.J. van Beek & H.M. Vlijm

Slipforming of advanced concrete structures

K.T. Fossa, A. Kreiner & J. Moksnes

Tagus Crossing at Carregado (Portugal): A project respectful of its sensitive environment

A. Perry da Câmara, A. Portugal, F. Virtuoso & M. Moussard

High Rise Buildings. The challenge of a new field of possibilities for the use of structural concrete

H. Corres, J. Romo & E. Romero

Direct load transmission in sandwich slabs with lightweight concrete core

E. Schaumann, T. Vallée & T. Keller

The Metrolink Finback Bridge, Manchester

S.W. Jones & R.G. Wrigley

Total precast solution for large stadium projects meet tight schedule

T.J. D'Arcy

HPFRC plates for ground anchors

M. di Prisco, D. Dozio, A. Galli, S. Lapolla & M. Alba

Designing structures against extreme loads

Outer concrete containments of LNG-tanks – Design against thermal shock

J. Roetzer & T. Baumann

Economic aspects in design of enhanced earthquake resistant r/c buildings

M. Mezzi

Seismic response of bridges on pile foundations considering soil-structure interaction

F. Dezi, S. Carbonari & G. Leoni

Fastening technique in seismic areas: A critical review

C. Nuti & S. Santini

MRI validation of FEM models to describe moisture induced spalling of concrete

S.J.F. Erich, A.B.M. van Overbeek, A.H.J.M. Vervuurt, G.H.A. v.d. Heijden, L. Pel & H.P. Huinink

Experience and tests of the fire-resistant plaster coating in bored tunnels

F.W.J. van de Linde, B.J. van der Woerd & L. Mulder

The merits of concrete structures for oil and gas fields in hostile marine environments

T.O. Olsen, S. Helland & J. Moksnes

MPU Heavy Lifter – A lightweight concrete vessel for heavy offshore lifting operations

T. Landbø, E.B. Holm & H. Ludescher

Detail design of the MPU Heavy Lifter

H. Ludescher, S.A. Haugerud & M. Fernández Ruiz

Computer modeling and effective stiffness of concrete wall buildings

M.I.J. Schotanus & J.R. Maffei

Inelastic seismic response and damage analysis of a tall bridge pier

X. Zhu, J.-W. Huang & L.-Y. Song

Experimental investigation on the seismic behaviour of connections in precast structures

R. Felicetti, G. Toniolo & C.L. Zenti

Design approach for diaphragm action of roof decks in precast concrete building under earthquake

L. Ferrara & G. Toniolo

Increasing the speed of construction

Just in time mixture proportioning

K.W. Day

Dubai metro challenge for a fast track construction

Y. Gauthier, S. Montens, P. Arnaud & T. Paineau

Balanced lift method – A new bridge construction method

S. Blail & J. Kollegger

Fast track construction of 9.5 km long elevated expressway by largescale, prefabrication of superstructure

S. Sengupta

An alternative tunnelling approach to accelerate urban underground excavation under water

F. Cavuoto, G. Colombo & F. Giannelli

Poster Presentations

Life cycle design

The influence of high slag dosages in cement on frost and de-icing salt resistance of concrete

S. Uzelac, A. Hranilovic´ Trubic´, I. Šustic´ & D. Würth

Case study: LCC analysis for Krk Bridge

I. Stipanovic´ Oslakovic´, D. Bjegovic´ & J. Radic´

Effect of GGBS additive on chloride ion binding of cements

K. Kopeckó & Gy. Balázs

Design strategies for the future

Optimised Concrete Quality Control

K.W. Day

Full-scale test on a pile supported floor slab – steel fibre concrete only or in a combination with steel

J. Hedebratt & J. Silfwerbrand

Monitoring and inspection

Damage assessment of fiber reinforced cement matrix under cyclic compressive load using acoustic emission technique

Y.S. Kim, S.W. Kim & H.D. Yun

Online-monitoring of concrete structures: Cost-effectiveness and application

Y. Schiegg, L. Steiner & S. Rihs

Diagnosis

Systematic condition investigation of concrete structures

J. Lahdensivu, S. Varjonen & M. Pentti

Seismic response of corroded r.c. structures

A. Saetta, P. Simioni, L. Berto & R. Vitaliani

Non destructive tests for existing R.C. structures assessment

S. Biondi & E. Candigliota

Innovative materials

The research on early age thermal cracking control of C50 HPC in main tower of Sutong Bridge

G.Z. Zhang, L.Q. Tu & S.K. Li

Rock-fill Concrete, a new type of concrete

M. Huang, X. An, H. Zhou & F. Jin

Structural concept, static and dynamic properties of RPC-BSS with high durability

L. Jiang, R. Gao & L. Li

By-product materials in the production of next generation SCC

A.D. Kanellopoulos, M. Mathaiou, M.F. Petrou, I. Ioannou & M. Neophytou

Low strength self compacting concrete for building application

K.K. Sideris, A.S. Georgiadis, N.S. Anagnostopoulos & P. Manita

Confirmation tests of integration of UFC forms left in place

M. Katagiri, K. Kakida & T. Nihei

Optimizing ready mix concrete for specific environmental conditions

J.A. Ortiz, M.E. Zermeño, A.C. Parapinski, A. Aguado, L. Agulló & F.A. Alonso

Tailor made bridge design with Ultra-High-Performance Concretes

R.P.H. Vergoossen

Development of Self-Consolidating Concrete in Hawaii using basalt aggregates

I.N. Robertson, G.P. Johnson & R. Ishisaka

Improved self-compacting concrete mixes for precast concrete industry

A. Ioani, O. Corbu & H. Szilagyi

UHPFRC prestressed beams as an alternative to composite steel-concrete decks: The example of Pinel Bridge (France)

T. Thibaux

Ultra High Performance Concrete: Mix design and practical applications

N. Cauberg, J. Piérard & O. Remy

Shear strength of reinforced concrete beams with recycled aggregates

S.K. Ji, W.S. Lee & H.D. Yun

Codes for the future

Comparing the EC2, ACI and CSA shear provisions to test results

E.C. Bentz & M.P. Collins

Review of European standards and guidelines for grouts for pre-stressed structures

J. Tritthart, I. Stipanovic Oslakovic, P.F.G. Banfill & M. Serdar

Biaxial tensile strength of concrete – Answers from statistics

L. Lemnitzer, L. Eckfeldt, A. Lindorf & M. Curbach

Measurements of the transmission length of pre-tensioned strands

C. Bosco & M. Taliano

A hybrid RC-encased steel joist system

C. Amadio, L. Macorini, F. Patrono & G. Suraci

Strengthening of reinforced concrete roof girder with unbonded tendons cracking due to the exploitation

A.S. Seruga & D.H. Faustmann

Development of field data for effective implementation of the mechanistic empirical pavement design procedure

N. Ala, M.A. Stanigzai, A. Azizinamini & M. Jamshidi

The effect of wire drawing lubricant residues on the bond characteristics of prestressing strand

A. Osborn, J. Connolly & J. Lawler

Wind loading parameters – Measurements vs. Croatian standard

A. Krecak & P. Sesar

Post-tensioned slab on ground

C.K. Cheong

Architectural concrete

NSP Arnhem Central Transfer hall

M. de Boer, J.L. Coenders, P. Moerland, S. Hofman & J.C. Paul

Developing a modern infrastructure

Design of two curve cable stayed bridges with overlapping decks supported by a single “X” shape tower

C.F. Ribeiro, C. Watanabe & H.A. Nogueira

Cable-stayed bridge over the Labe at Nymburk – Hybrid structure tailored for simple construction

M. Kalný, V. Kvasnicka, P. Nemeč & A. Brnusák

Ultimate limit state analysis of a segmented tunnel lining

A.J.T. Lutikholt, A.H.J.M. Vervuurt & J.A. den Uijl

Conceptual design of offshore concrete structures

T.O. Olsen

Design and construction of DELTA CITY shopping mall concrete structure in Belgrade

S. Marinkovic, V. Kokovic, I. Ignjatovic & V. Alendar

Small concrete pedestrian bridge with integral abutments – An alternative solution for pedestrian bridges over highways

A. Keil, S. Hagenmeyer & J. Schneider

“Ravine des trois bassins” Bridge in La Reunion Island. A successful application of extradosed prestressing

P. Charlon & J. Frappart

Designing structures against extreme loads

Seismic behaviour of precast column to foundation joint

G. Metelli & P. Riva

Probabilistic correlation of damage and seismic demand in R/C structures

M. Botta & M. Mezzi

Seismic response of coupled wall-frame structures on pile foundations

S. Carbonari, F. Dezi & G. Leoni

Displacement based design of BRB for the seismic protection of R.C. frames

T. Albanesi, A.V. Bergami & C. Nuti

Seismic behavior of residential concrete walls

S.M. Alcocer, A. Sánchez-Alejandre, J. Carrillo, R. Uribe & Á. Ponce

Modification of the concrete properties after fire

G.L. Balázs & É. Lubláy

State-of-the-art structural designs and axial shortening studies of super high columns in a tall building

P. Boonlualoah & S. Boonlualoah

Results of an experimental research on precast structures under seismic actions

F. Biondini & G. Toniolo

Increasing the speed of construction

Incremental launching of final composite bridge deck

L. Sasek

Shear load capacity of concrete slabs with embedded ducts

J. Schnell & C. Thiele

Construction of low Langer bridges

S. Yoda, M. Ooba, M. Koga & S. Suzuki

Rapid construction of long span precast concrete box girders for Incheon Bridge viaducts constructed with FSLM

K.Y. Choi, D.O. Kang, K.L. Park, C.H. Lee, H.Y. Shin & M.G. Yoon