

Program

High Tech Concrete: Where Technology and Engineering Meet

2017 *fib* Symposium,
Maastricht, The Netherlands
June 12–14, 2017





Dear Participant,

With great pleasure we present you the program for the 2017 fib Symposium Maastricht. More than 500 participants and 340 interesting presentations from more than 45 countries make it an important international event in sharing knowledge on concrete and concrete structures. With the exhibition, the introduction of Project Presentations and Interactive Model Code sessions, and in line with the symposium theme, we hope to bring practice and science a bit closer together. We ask your special attention for the contribution by the younger participants (*student competition S-CO₂DE and Young Engineer/PhD best paper award*).

In this booklet you can find information on all the elements of the symposium. In the digital world we are living in, you certainly expect to be informed also by other means beside this booklet and the accompanying 'Book of Abstracts'. In that respect we proudly point you to the Symposium App 'Twoppy' and the search system 'AIDA' that will help you to find your way during the symposium as far as program and content are concerned.

Finally, on behalf of the Organizing and Scientific Committee, I wish you all a very interesting, successful symposium and hope that the symposium program and exhibition, but also the very nice city of Maastricht, will offer you the best circumstances for gaining knowledge, getting new ideas and networking. Above all, we hope you will enjoy it!

Dick Hordijk

Representatives of the Organizing and Scientific Committee



Dick Hordijk



Luc Taerwe



Josef Hegger



Wiepke van den Burg



Mladena Luković

Organization:



Hét kennisnetwerk voor de betonbouw



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Volker Infra



Van Hattum en Blankevoort



Symposium Specialties

Project Presentations

- Leading civil engineering projects
- Papers by people from practice
- Tuesday (9:00 – 17:30)
- 0.11 Pressroom
- Published in Dutch Journal CEMENT

Interview with representatives of Ministry of Transport

- Monday (11:10-12:00)

Interactive Model Code Sessions

- Info and discussion on MC 2020
- Wednesday (11:00 – 15:30)
- Auditorium 2

Student Competition S-CO₂DE

- Sustainable COncrete COnstruction DEsign
- Award Ceremony Tuesday (13:00)
- Exhibition Hall

Best Young Engineer/PhD paper award

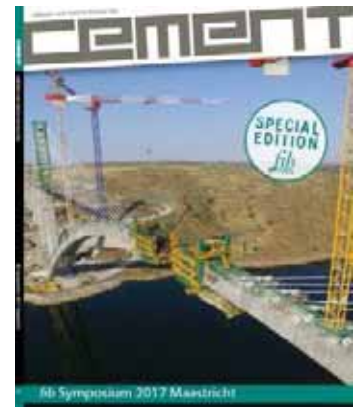
- By fib Young Engineers Group
- Wednesday (ca. 15:40)
- Exhibition Hall

Presentation by publisher

- For early career researchers
- How to improve impact factor
- Monday (13:30-14:00)
- Auditorium 2



<http://sco2de.wixsite.com/sco2de>



Available in symposium bag

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Find the presentations on topics you are interested in via:
<https://fibsymposium2017.com/interactive-abstracts-overview/>

		Auditorium 2	0.11 Pressroom	0.2 Berlin	0.4 Brussels
Monday June 12	09:00-10:30	Opening Session			
	10:30-11:00				
	11:00-12:30	Keynote Session A			
	12:30-13:30				
	Parallel Sessions 1 13:30-15:30	Research Impact, Bridges and Repair	Innovative Concretes and Codes	Temperature: Effects and Loading	Cyclic Loading and Fatigue
	15:30-16:00				
	Parallel Sessions 2 16:00-17:30	Joints and Soil-Structure Interaction	FRC (Fiber Reinforced Concrete)	Loading Rate and Accidental Loading	Recycled Aggregate
	Evening	Welcome Reception City Hall Maastricht			
Tuesday June 13	Parallel Sessions 3 09:00-10:30		Road Bridges	FRC and UHPC	Sustainability (Geopolymer Concrete)
	10:30-11:00				
	Parallel Sessions 4 11:00-12:30		Tunnel, Aquaduct, Dam and Lock	Shrinkage	Durability and Life Time
	12:30-13:30				
	Parallel Sessions 5 13:30-15:30		Bridge, Strengthening, Foundation and Restoration	Shear: Experiments and Modelling	Historic Concrete
	15:30-16:00				
	Parallel Sessions 6 16:00-17:30		Buildings	Injection and repair	Innovative concretes (Suppl. Cementitious Mat.)
	Evening	Gala Dinner			
Wednesday June 14	09:00-10:30	Keynote Session B			
	10:30-11:00				
	Parallel Sessions 7 11:00-12:30	Model Code 2020	FEM (Finite Element Modelling)	Chloride Effects and Degradation	Repair and Strengthening
	12:30-13:30				
	Parallel Sessions 8 13:30-15:30	Model Code 2020	Degradation	UHPC	Challenging Projects
15:30-16:00	Closing Ceremony				

Project Presentations

	0.5 Paris	0.8 Rome	0.9 Athens	Exhibition Hall
09:00-10:30				
10:30-11:00				Coffee / Tea
11:00-12:30				
12:30-13:30				Lunch
Parallel Sessions 1 13:30-15:30	Innovative building concepts	FRP (Fiber Reinforced Polymers)	Assessment and Life Time	
15:30-16:00		Introduction fib Young Engineers		Coffee / tea
Parallel Sessions 2 16:00-17:30	Repair and Strengthening	Punching Shear	Safety	
Evening	Welcome Reception City Hall Maastricht			
Parallel Sessions 3 09:00-10:30	Seismic Loading	Hollow Core Elements	Prestressing and fatigue	
10:30-11:00				Coffee / Tea
Parallel Sessions 4 11:00-12:30	Load Testing	Connections and Anchors	Special Loading and Codes	
12:30-13:30		Award Ceremony Student Competition S-CO2DE		Lunch
Parallel Sessions 5 13:30-15:30	Anchorage	Corrosion and Durability	Innovative Concretes and Codes	
15:30-16:00				Coffee / Tea
Parallel Sessions 6 16:00-17:30	Model Code	Prestressing and Precast	Encased Steel Profiles and Coupling Beams	
Evening	Gala Dinner			
09:00-10:30				
10:30-11:00				Coffee / Tea
Parallel Sessions 7 11:00-12:30	Steel - Concrete Composites	NDT (Non-Destructive Testing)	Mechanical Behaviour	
12:30-13:30				Lunch
Parallel Sessions 8 13:30-15:30	Shear	Assessment and Reliability	Innovative Building Concepts	
15:30-16:00				Drinks

Time		Auditorium 2
Monday, June 12, 9:00-10:30 Opening session	9:00-10:00	<p>Welcome by <i>fib</i> president</p> <p><i>fib</i> Medal and Honorary Members</p> <p><i>Prof. Hugo Corres Peiretti</i></p> <p>President <i>fib</i></p>
	10:00-10:30	<p>Achievement Award Young Engineers</p> <p><i>Prof. Aurelio Muttoni</i></p> <p>Cairman Jury AAYE</p> <p>Incl. "In Honour of prof. A.S.G. Bruggeling"</p> <p><i>Prof. Joost Walraven</i></p>
Time		Auditorium
Monday, June 12, 11:00-12:30 Keynote Session A	11:00-11:10	<p>Words of welcome by:</p> <p><i>Hans Ramler</i> (Dutch Concrete Association)</p> <p><i>Prof. Luc Taerwe</i> (Belgian Concrete Association)</p> <p><i>Prof. Manfred Curbach</i> (Deutscher Ausschuss für Stahlbeton)</p>
	11:10-12:00	<p>Interview with representatives of Ministries of Transport in the Netherlands, Belgium and Germany</p> <p><i>Prof. Dick Hordijk</i></p> <p>Delft University of Technology and Adviesbureau Ir. J.G Hageman B.V., the Netherlands</p>
	12:00-12:30	<p>The real nature of concrete</p> <p><i>Chris Poulissen</i></p> <p>NP-BRIDGING architects & Engineers, Belgium</p>

fib



Prof. Hugo Corres Peiretti



Prof. Aurelio Muttoni

AAYE

In Honour of



Prof. A.S.G. Bruggeling
(1923-2015)

AAYE Sponsors:



Interview



Jean Luc Beguin
Rijkswaterstaat
Ministry of Infrastructure
and the Environment
The Netherlands



Gero Marzahn
Federal Ministry
of Transport and
Digital Infrastructure
Germany

Keynote Lecture



Chris Poulissen

about



Bridges and ...

Time		Auditorium 2	0.11 Pressroom	0.2 Berlin
		Existing Concrete Structures	Innovative Building Concepts	Special Loadings
		Research Impact, Bridges and Repair	Innovative Concretes and Codes	Temperature: Effects and Loading
		<i>Chair: Fernández-Ordóñez</i>	<i>Chair: Di Prisco</i>	<i>Chair: Dehn</i>
Monday, June 12, 13:30-15:30	Parallel Sessions 1	Introduction to Publishing for Early Career Researchers <i>Smith</i> Wiley, Publisher	Adaptation of the German "Guideline for Preventive Measures against Harmful Alkali Reactions in Concrete" on Dolomite Rock Testing for Highway Projects in Bosnia and Herzegovina <i>Terzic, Mansfeld and Aselmeyer</i> Motorways of Federation of Bosnia and Herzegovina Ltd.,	2D Modeling Temperature Development of Mass Concrete Structures at Early Age <i>Yikici and Chen</i> MEF University, Istanbul, Turkey
			Towards Standardization: Testing and Design of Carbon Concrete Composites <i>Bielak, Hegger and Chudoba</i> RWTH Aachen University, Germany	Active Crack Control in Continuously Reinforced Concrete Pavements (CRCP) <i>De Winne, De Backer and Depuydt</i> Ghent University, Belgium
	Study on the Design of an Extradosed and Suspension Hybrid Bridge with 800 m Span of Butterfly Web <i>Heng, Kasuga and Uchibori</i> Sumitomo Mitsui Construction Co.,Ltd., Tokyo, Japan	Identification of FRCM Mechanical Parameters for the Retrofitting Design of Existing Structures <i>Rampini, Zani, Colombo and Di Prisco</i> Polytechnic University of Milan, Italy	Temperature Effects on the Fatigue Resistance of High-Strength-Concrete and High-Strength-Grout <i>Otto, Elsmeier and Lohaus</i> Leibniz University Hannover, Germany	
	Design Criteria for Piers of Semi-Integral Bridges: Investigations on Normal Force and Reinforcement Ratio <i>Gebauer, Stümpel, Von der Haar and Marx</i> Leibniz Universität Hannover, Germany	UHPC Pedestrian Bridges and Measured Human Induced Vibrations <i>Schutte, Sousamli, Blom and Attahiri</i> Municipality of Rotterdam, the Netherlands	Numerical Model to Determine Shear Capacity of Reinforced Concrete Deep Beams Exposed to Fire <i>Fan, Tan and Nguyen</i> Nanyang Technological University, Singapore	
	Efficiency Factors for Plastic Design in Concrete: Influence of Brittleness in Compression <i>Moccia, Fernández Ruiz and Muttoni</i> Ecole Polytechnique Fédérale de Lausanne, Switzerland	French Standards for Ultra-High Performance Fiber-Reinforced Concrete (UHPRFC) <i>Toutlemonde, Kretz, Génereux, Resplendino, Pillard, Guérinet et al.</i> Paris-Est University, IFSTTAR, France	Fire Resistance of Concretes with Blended Cements <i>Balázs, Kopeckská, Alimrani, Abdelmelek and Lubláy</i> Budapest University of Technology and Economics, Hungary	
	Determining the Critical Slenderness of Concrete Arch Bridges by the Nominal Stiffness Method <i>Van Bogaert</i> Ghent University, Belgium	Extremely Light and Slender Precast Pedestrian-Bridge made out of Textile-Reinforced Concrete (TRC) <i>Rempel, Kulas, Will and Bielak</i> RWTH Aachen University, Germany	Dust Explosion of RC Silos <i>Vardai and Madaras</i> EMI-TUV SUD Ltd., Budapest, Hungary	
	Refurbishment of a Heritage Concrete Tied Arch Bridge across River Lys <i>Van Bogaert</i> Ghent University, Belgium	Potentials of Textile Reinforced Concrete for Lightweight Noise Protection Walls <i>Beßling, Antons and Orlowsky</i> Dortmund University, Germany	A Parametric Study on Concrete Columns Exposed to Biaxial Bending at Elevated Temperatures Using a Probabilistic Analysis <i>Wang, Van Coile, Caspele and Taerwe</i> Ghent University, Belgium	
	Make Feasible the Fehmarbelt Fixed Link <i>Pompeu-Santos</i> SPS Consulting, Lisbon, Portugal	The UHPC Catharinabridge in Leiden <i>Van Nalta and De Graaff</i> Pieters Bouwtechniek, Delft, the Netherlands	Creep Behavior of Bonded Anchor under High Sustained Loading at Long-term Temperature <i>Muciaccia, Consiglio and Rosati</i> Politecnico di Milano, Italy	

0.4 Brussels	0.5 Paris	0.8 Rome	0.9 Athens
Modelling, Testing and Design	Innovative Building Concepts	Modelling, Testing and Design	Existing Concrete Structures
Cyclic Loading and Fatigue	Innovative Building concepts	FRP (Fiber Reinforced Polymers)	Assessment and Life Time
<i>Chair: Van der Veen</i>	<i>Chair: Hajek</i>	<i>Chair: Elfgrén</i>	<i>Chair: Pielstick</i>
Damage Evaluation of Concrete under Cyclic Loading by Crack Observation <i>Nakamura and Taniguchi</i> Tokyo Institute of Technology, Japan	Inelastic Behaviour of RC Members Incorporating High Deformability Concrete <i>Elghazouli, Bompá, Xu, Stafford and Ruiz-Teran</i> Imperial College London, UK	Behaviour of FRP-Confined Rubberised Concrete with Internal Recycled Tyre Steel Fibres <i>Alsaif, Garcia, Guadagnini and Pilakoutas</i> The University of Sheffield, United Kingdom	Practical Bond Model for Corroded RC Bridges <i>Blomfors, Lundgren, Larsson Ivanov, Honfi and Zandi</i> Chalmers University of Technology, Sweden
Fatigue Tests on Post-Tensioned Bridge Decks <i>Koekkoek, Van der Veen and De Boer</i> Delft University of Technology, the Netherlands	Experimental Study on the M-V Interaction of a Hybrid Steel Connection used in Concrete Floor-to-Balcony Junction <i>Le Bloa, Somja and Palas</i> INGENOVA, Saint-Jacques-de-la-Lande, France	Self-stressed Concrete Members Reinforced with FRP Bars <i>Tur, Herrador and Semianiuk</i> Brest State Technical University, Belarus	Structural Assessment of an Existing Concrete Box-Girder Bridge According to the German and the Dutch Standards <i>Cederhout and Vergoossen</i> Royal HaskoningDHV, Nijmegen, the Netherlands
Fatigue of Semi-Precast Slabs with Lattice Girders <i>Wieneke and Hegger</i> RWTH Aachen University, Germany	Research on an Anchoring System of Isodirectionally Turning Stay Cable <i>Liu, Shi and Ruan</i> Tongji University, Shanghai, China	Shear Behavior of Steel or GFRP Reinforced Concrete Beams without Stirrups <i>Kotynia, Kaszubska and Barros</i> Lodz University of Technology, Poland	Bridge Reassessments – Realistic Shear Capacity Evaluation Using Arch Action Model <i>Gleich and Maurer</i> Dortmund University, Germany
Data Assimilation with Hygro-Mechanistic Model and Non Destructive Inspections for Fatigue Life Prediction of RC <i>Tanaka and Maekawa</i> The University of Tokyo, Japan	Wound FRP for Concrete Beams with Optimised Geometries <i>Yang, Orr and Spadea</i> University of Bath, United Kingdom	Assessment of the Existing Formulations to Evaluate Shear-Punching Strength in RC Slabs with FRP Bars without Transverse Reinforcement <i>Oller, Kotynia and Mari</i> Polytechnic University of Catalonia, Barcelona, Spain	Life Cycle Cost as a Tool for Decision Making on Concrete Infrastructures <i>Matos, Solgaard, Santos, Sanchez Silva, Linneberg, Strauss, Casas, et al.</i> University of Minho, Guimarães, Portugal
Resistance of Prestressed Concrete Structures to Fatigue in Domain of Endurance Limit <i>Heinrich, Maurer, Hermann, Ickstadt and Müller</i> Dortmund University, Germany	Marine Concrete Structures for the Future <i>Olsen</i> Dr.techn.Olav Olsen AS, Lysaker, Norway	Efficiency of Grooving Method used for Deficient RC Beam-Column Joints Seismically Rehabilitated with CFRP Sheets <i>Mostofinejad and Akhlaghi</i> Isfahan University of Technology, Iran	Residual Service Life of Existing Concrete Structures – Is it Useful in Practice? <i>Gulikers and Groeneweg</i> Rijkswaterstaat, Utrecht, the Netherlands
Evaluation of Remained Fatigue Life of Expressway Reinforced Concrete Slab Strengthened by Steel Plate Adhesion Method <i>Onishi and Sato</i> Hanshin expressway company limited, Osaka, Japan	Low Damage Technologies and Resilience-Based Design for Concrete Bridges: Beyond Ductility Concepts <i>Sarkis and Palermo</i> University of Canterbury, New Zealand	Shear Capacity Assessment of Post-tensioned Concrete Girders Strengthened with CFRP Materials <i>Kotynia, Staśkiewicz, Michels, Czaderski and Motavalli</i> Lodz University of Technology, Poland	Prediction of Complex Deterioration and Evaluation of RC Structural Performance <i>Ito and Mizobuchi</i> Yachiyo Engineering Co., Ltd., Japan
Impact of Cyclic Loading and Corrosion on the Deflections of Reinforced Concrete Beams <i>Veerman</i> ARCADIS, Amersfoort, the Netherlands	Experimental Study of the Behavior of a Steel-Concrete Hybrid Thermal Break System under Vertical Actions <i>Keo, Le Gac, Somja and Palas</i> LCCGM/Structural Engineering Research Group, Rennes, France	Development of New FRP Reinforcement for Optimized Concrete Structures <i>Spadea, Orr, Ibell and Nanni</i> University of Bath, United Kingdom	PERFDUB: a new French research project on performance-based approach for justifying concrete structures durability <i>Linger and Cussigh</i> VINCI Construction, France
Fatigue Strength of Highway Bridge PC Slabs Due to Wheel Loads <i>Nagatani</i> Central Nippon Expressway Company Ltd., Tokyo, Japan	Comparison of Balanced Lift and Balanced Cantilever Method for the San Leonardo Viaduct <i>Gaßner, Fuchs and Kollegger</i> TU Wien, Vienna, Austria	Anchorage Systems used in FRP Strengthening of Concrete Members <i>Jumaah, Kalfat, Al-Mahaidi and Abdouka</i> Swinburne University of Technology, Melbourne, Australia	Sustainability and Durability of Concrete in large Infrastructure Projects of Rijkswaterstaat (the Netherlands) <i>Diemel and Fennis</i> Rijkswaterstaat, Utrecht, the Netherlands

Time		Auditorium 2	0.11 Pressroom	0.2 Berlin
		Modelling, Testing and Design	Modelling, Testing and Design	Special Loadings
		Joints and Soil-Structure Interaction	FRC (Fiber Reinforced Concrete)	Loading Rate and Accidental Loading
		<i>Chair: Maekawa</i>	<i>Chair: Walraven</i>	<i>Chair: Mihaylov</i>
Monday, June 12, 16:00-17:30 Parallel Sessions 2	16:00-16:15	Interaction of Polymer Flexible Joint with Concrete Elements in an Uniaxial Tensile Test <i>Zdanowicz, Kwiecień, Tekieli and Seręga</i> Cracow University of Technology, Poland	Free and Restrained Shrinkage of Hybrid Steel Fibres Reinforced Concrete <i>Al-Kamyani, Pilakoutas, Guadagnini and Papastergiou</i> The university of Sheffield, United Kingdom	Definition of Loading Rate for the Experimental and Numerical Investigation of Reinforcement's Bond in Concrete under Impact Loading <i>Máca, Panteki, Häußler-Combe and Manfred Curbach</i> Technical university of Dresden, Germany
	16:15-16:30	Numerical Investigation on Shear Mechanical Performance of Immersion Joint <i>Luo, Yuan and He</i> Tongji University, Shanghai China	Numerical Simulation of Steel Fibre Reinforced Concrete Girders Subjected to Cyclic Loads <i>Heek and Mark</i> Ruhr-University Bochum, Germany	Bond Tests under High Loading Rates <i>Michal and Keuser</i> Bundeswehr University Munich, Germany
	16:30-16:45	Project OV-SAAL Cluster A: Widen an Existing Deck and Analyze Different Type of Joints <i>Van Essen and Bulsink</i> Movares, Utrecht, the Netherlands	A Numerical Model for the Creep of Fiber Reinforced Concrete <i>Vrijdaghs, Di Prisco and Vandewalle</i> University of Leuven, Belgium	Assessment of a Protective Wall Response to Explosive Loading considering a Realistic Fragments Distribution <i>Grisaro and Dancygier</i> Isreal Institute of Technology, Haifa, Israel
	16:45-17:00	Structural Improvement of the Construction Joint of the Cut and Cover Tunnels <i>Taniguchi and Agemi</i> Hanshin Expressway Company Limited, Osaka, Japan	New Test for the Characterization of the Tensile Constitutive Behaviour of FRC <i>Segura-Castillo, Monte and De Figueiredo</i> Universidad de la República, Montevideo, Uruguay	Strain Rate Effect of Cementitious Materials Influenced by Existence of Water and ITZ around Aggregates <i>Fujiyama and Kato</i> Hosei University, Tokyo, Japan
	17:00-17:15	Effects of Soil-Structure in High-Rise Buildings by means of Dimensionless Analysis and a Simplified Model <i>Sánchez Gómez and Pruiksmá</i> TNO, Delft, the Netherlands	Effect of Fibers Amount on the Cracking Localization Phenomenon in Tensile Bars – an Experimental Study <i>Karinski and Dancygier</i> Isreal Institute of Technology, Haifa, Israel	The PACE-1450 Experiment – Investigations regarding Crack and Leakage Behaviour of a Pre-stressed Concrete Containment <i>Herrmann, Müller, Michel-Ponnelle, Masson and Herve</i> Karlsruhe Institute of Technology, Germany
	17:15-17:30	Computational Modeling of Soil-Structure Interaction towards Reduced Concrete Foundation Volume for Tall Wind Turbine <i>Muzofa, Van Zijl, and Day</i> Stellenbosch University, South Africa	Tension Stiffening Behavior of Self Compacting High Strength Fiber Reinforced Concrete incorporating River Gravels <i>Silva, Pepe, Pfeil, Mobasher and Toledo-Filho</i> Federal University of Rio de Janeiro, Brazil	An Interesting Case of a Residential Building affected by an Accidental Load <i>Mejia</i> Medellín, Colombia

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Sustainability	Existing Concrete Structures	Modelling, Testing and Design	Safety, Reliability and Codes
Recycled Aggregate	Repair and Strengthening	Punching Shear	Safety
<i>Chair: Torrenti</i>	<i>Chair: Silfwerbrand</i>	<i>Chair: Muttoni</i>	<i>Chair: Caspeele</i>
Rheological Behavior at Fresh State of Structural Recycled Aggregate Concrete <i>Amario, Pepe, Martinelli and Toledo-Filho</i> Federal University of Rio de Janeiro, Brazil	Micromechanics-Based Prediction of the Elastic Properties of Polymer-Modified Cementitious Materials <i>Göbel, Bos, Schwaiger and Osburg</i> Bauhaus-University Weimar, Germany	Nonlinear Finite Element Analysis of Reinforced Concrete Flat Slabs subjected to Reversed-Cyclic Loading <i>Setiawan, Vollum and Macorini</i> Imperial College London, United Kingdom	An Innovative Conformity Criterion for Assessment of the Concrete Strength under Uncertainty <i>Tur and Derechennik</i> Brest State Technical University, Belarus
Recycling of End of Life Concrete Fines (0-4mm) from Waste to Valuable Resources <i>Lotfi and Rem</i> Delft University of Technology, the Netherlands	ACI 562-16 – The ACI Concrete Repair Code <i>Kesner</i> CVM Engineers, Pennsylvania, USA	Punching Shear Strength of RC Flat Slabs provided with Shear-Heads at Interior Connections to Steel Columns <i>Bompa and Elghazouli</i> Imperial College London, United Kingdom	Assessment of the Structural Safety of the Schiphol Railway Tunnel <i>Scholten and Van der Sanden</i> MOVARES, Utrecht, the Netherlands
Shear Behavior of Reinforced Recycled Aggregate Concrete Beams <i>Wardeh, Ghorbel, Gomart, Fiorio and Pliya</i> University of Cergy-Pontoise, Neuville-Sur-Oise, France	Safety Levels in Concrete Slabs-on-Grade <i>Silfwerbrand</i> KTH Royal Institute of Technology, Stockholm, Sweden	Punching Analyses of Symmetrically Reduced Concrete Slab Quarters <i>Bocklenberg, Ahrens and Mark</i> Ruhr University of Bochum, Germany	Effect of Reinforcement Detailing on Catenary Action in 2-D RC Frame <i>Lim, Tan and Lee</i> Nanyang Technological University, Singapore
Bond and Cracking Behavior of Reinforced Concrete Members incorporating Recycled Aggregates <i>Wardeh, Ghorbel, Gomart and Fiorio</i> University of Cergy-Pontoise, Neuville-Sur-Oise, France	Repair Strategy of the Deteriorated Immersed Maastunnel <i>Blom, Lukovic, Taffijn, Van Zanten</i> Municipality of Rotterdam, the Netherlands	On the Distribution of Shear Forces in Non-Axisymmetric Slab-Column Connections <i>Einpaul, Vollum and Ramos</i> Imperial College London, United Kingdom	Reinforced Concrete Beam-Slabs with Removed Corner Column under Point and Uniform Distributed Load <i>Lim, Tan and Lee</i> Nanyang Technological University, Singapore
Defining Limits For Standardization On Concrete Incorporating Recycled Concrete Aggregates <i>Lauch, Vrijders and Dooms</i> Belgian Building Research Institute, Limelette, Belgium	Optimization of Corrosion Countermeasures for Chloride Attacked RC Bridge Piers in a Strengthening Project <i>Sanada and Yanagisawa</i> Central Nippon Expressway Company Limited, Shizuoka, Japan	Improvement of Punching Shear Design Provisions according to Eurocode 2 <i>Kueres, Siburg, Herbrand, Classen and Hegger</i> RWTH Aachen University, Germany	Design Compressive Strength Values of Concrete under Sustained Loads <i>Brachmann and Empelmann</i> Technical University of Braunschweig, Germany
Experimental Setup for Measuring Long-term Behavior of Green Reinforced Concrete Beams <i>Tošić, Marinković, Ignjatović, Bajat and Pejović</i> University of Belgrade, Serbia	Corrosion Risk of Patch Repaired Reinforced Concrete Elements under Influence of Internal Chloride Ions <i>Malek, Hattori and Kawana</i> Kyoto University, Japan	Comparison between Punching Shear Capacity of PT and RC Slabs according to Different Design Codes <i>Jones, Mirshekari, Rees and Donchev</i> Interspan (Europe) Ltd, Shepperton, United Kingdom	Nonlinear Dynamic Analysis of Ultra-High Voltage Electrical Equipment with Base Isolation <i>Yao and Qian</i> Tongji University, Shanghai, China

Time		Auditorium 2	0.11 Pressroom	0.2 Berlin	
			Project Presentations	Modelling, Testing and Design	
Tuesday, June 13, 9:00-10:30 Parallel Sessions 3			Road Bridges	FRC and UHPC	
			<i>Chair: Hordijk</i>	<i>Chair: Curbach</i>	
		9:00-9:15		Concrete of Highest Quality for Africa's Largest Suspension Bridge: Durability and Workability <i>Swanepoel, Seitz and Pengyu</i> GAUFF GmbH & Co Engineering KG, Germany (Project in Maputo, Mozambique)	The Effect of Fibre Orientation on the Uniaxial Tensile Response of UHPFRC: Experimental Evaluation and Analytical Modelling <i>Abrishambaf, Pimentel and Nunes</i> University of Porto, Portugal
		9:15-9:30		Queen Máxima bridge - Alphen aan den Rijn <i>Nass and Bouman</i> Mobilis TBI, the Netherlands (Project in Alphen a/d Rijn, the Netherlands)	Hybrid Concrete Elements with Splitting Fiber Reinforcement under Two-dimensional Partial-area Loading <i>Plückelmann, Song and Breitenbücher</i> Ruhr University Bochum, Germany
		9:30-9:45		Amalia Bridge Waddinxveen <i>Van den Berk</i> Heijmans Infra, Rosmalen, the Netherlands (Project in Waddinxveen, the Netherlands)	Assessment of the Shear Strength of Steel Fibre-Reinforced Concrete <i>Picazo, Alberti, Enfedaque and Gálvez</i> Technical University of Madrid, Spain
		9:45-10:00		The Approach Bridge of the Second Bridge of Wuhu Yangtze River Highway Bridge <i>Hu, Ma, Ruan and Shi</i> Anhui Transportation Holding Group Co Ltd, Hefei, China (Project in Anhui, China)	On the Design Response of a FRC Statically Undetermined Structure <i>Di Prisco, Martinelli and Colombo</i> Polytechnic University of Milan, Italy
10:00-10:15		Steel-Concrete Composite Flat Arch Bridge <i>Stroschio</i> Tony Gee and Partners LLP, Esher, UK (Project in Northampton, UK)	Experimental Investigation of Hollow Core Slabs made of UHPC – Fibres Orientation <i>Vitek, Kohoutek, Čítek and Coufal</i> Metrostav a.s., Prague, Czech Republic		
10:15-10:30		Construction of an Arch Bridge by Lowering Method <i>Kaminaga, Nakagawa, Hosono, Ichikawa and Kajjura</i> Sumitomo Mitsui Construction Co Ltd, (Project in Shizuoka, Japan)	Bending Capacity of Thin UHPC Plates Based on Theoretical Predictions and In-situ Testing <i>Falbr</i> FDN engineering and construction B.V., Amsterdam, the Netherlands		

0.4 Brussels	0.5 Paris	0.8 Rome	0.9 Athens
Sustainability	Special Loadings	Modelling, Testing and Design	Special Loadings
Sustainability (Geopolymer Concrete)	Seismic Loading	Hollow Core Elements	Prestressing and Fatigue
<i>Chair: Ye</i>	<i>Chair: Wijte</i>	<i>Chair: Hallgren</i>	<i>Chair: Kasuga</i>
Mechanical Properties and Chloride Ion Penetration of Alkali Activated Slag Concrete <i>Ramezaniapour, Bahman Zadeh, Zolfagharnasab and Ramezaniapour</i> Amirkabir University of Technology, Tehran, Iran	Response of Earthquake-Damaged RC Columns Repaired with CFRP Composites using Hybrid Simulation <i>Hashemi, Al-Mahaidi, Kalfat, Al-Ogaidi and Wilson</i> Swinburne University of Technology, Melbourne, Australia	Testing and Design of Shear Capacity of Hollow Core Slabs with Structural Topping <i>Klein-Holte and Jansze</i> Consolis VBI, Huissen, the Netherlands	Recent Development of Epoxy Coated and Filled Prestressing Strand and Behaviour upon a Wire Break <i>Tanaka, Nakaue, Oshima, Matsubara, Fukuda and Aoki</i> Sumitomo (SEI) Steel Wire Corp., Itami, Japan
Natural Carbonation of Alkali-Activated Fly Ash and Slag Pastes <i>Nedeljković, Zuo, Arbi and Ye</i> Delft University of Technology, the Netherlands	Seismic Performance of Reinforced Concrete Columns in Corrosive Environment <i>Vu and Li</i> Nanyang Technological University, Singapore	Shear Capacity of Slabs with Voiding Elements <i>Molkens, Degée, Dragan, Baekeland and Leijssen</i> Sweco Belgium nv, Hasselt, Belgium	Gel as New Anticorrosion Medium in the Post Tension Industry – Scientific Study <i>Boigner</i> WERBA-CHEM GmbH, Vienna, Austria
Geopolymer Concrete Ready Mixed: A Challenge! <i>De Vries</i> ENCI BV, 's Hertogenbosch, the Netherlands	Seismic Performance of RC Frame-Shear Wall Structure with Replaceable Coupling Beams <i>Li and Jiang</i> Tongji University, Shanghai, China	Experimental and Numerical Studies on Shear Behavior of Deep Prestressed Concrete Hollow Core Slabs <i>Nguyen, Tan and Kanda</i> Nanyang Technological University, Singapore	Fatigue Loading Tests of Concrete Railway Sleepers <i>Rantala, Kerokoski and Nurmikolu</i> Tampere University of Technology, Tampere, Finland
Flexural Behavior and Single Fiber-Matrix Bond-Slip Behavior of Macro Fiber Reinforced Fly Ash-Based Geopolymers <i>Farooq, Bhutta, Borges, Zanotti and Banthia</i> University of British Columbia, Vancouver, Canada	Seismic Performance of Column-Foundation-Joints with Post-Installed Rebar Connections: Pre-test simulations <i>Mahadik, Sharma and Hofmann</i> University of Stuttgart, Germany	Hollow Core Concrete Shells for Large Aperture Parabolic Troughs <i>Kämper, Stallmann, Mark and Schnell</i> Ruhr University Bochum, Germany	Post-Tensioning Systems for the Strengthening of Structures <i>Gläser and Löffler</i> DYWIDAG-Systems International GmbH, Munich, Germany
Sustainability of Thermally-Activated Precast Concrete Hollow Core Floor Systems <i>Plauška, Van der Wal and Jansze</i> Consolis, Huissen, the Netherlands	Behaviour of Mono-Stud Anchor Plates under Simulated Seismic Action <i>Muciaccia, Di Nunzio and Consiglio</i> Polytechnic University of Milan, Italy	The Effect of Fire on Floor Slabs Containing Enclosed Cavities - Gently Touched or Fully Explored? <i>Mulder and Kraak</i> Bartels Ingenieurs voor Bouw en Infra, Eindhoven, the Netherlands	Influence Of Oil-Based Corrosion Protection On Friction Losses During Strands Installation and Prestressing <i>Laco and Hendy</i> Atkins, Epsom Gateway, Surrey, United Kingdom
Towards Greener Concrete: the Challenges of SUS-CON Project <i>Attanasio, Largo, Vinai, Soutsos, Visser, Van Gijlswijk,</i> CETMA, Brindisi, Italy	Advances in Non-Linear Time History and Modal Response Spectrum Analyses for the Seismic Assessment of Buildings in Groningen (Netherlands) <i>Hermens, Kraaijenbrink and Meijers</i> Royal HaskoningDHV, Rotterdam, the Netherlands	Flexurally Rigid Support of Prestressed Hollow Core Slabs with Post-Tensioned Beams <i>Friedrich and Klein-Holte</i> Innegration GmbH, Bernkastel-Kues, Germany	Effect of Relative Displacement of Strands Bent over Circular Saddles on Fatigue Life under Fretting Conditions <i>Mohareb, Goldack, Schlaich and Walbridge</i> Technical University of Berlin, Germany

Time		Auditorium	0.11 Pressroom	0.2 Berlin	
			Project Presentations	Material Technology	
Tuesday, June 13, 11:00-12:30 Parallel Sessions 4			Tunnel, Aqueduct, Dam and Lock	Shrinkage	
			<i>Chair: Lukovic</i>	<i>Chair: Mülle</i>	
		11:00-11:15		Sarvsfossen Dam <i>Aasheim, Lindemark, Lundberg and Engen</i> Multiconsult ASA, Oslo, Norway (Project in Bykle, Norway)	Kinetics of Drying Shrinkage and Creep: an Experimentally Based Code-Type Approach <i>Acosta and Müller</i> Ed. Züblin AG, Stuttgart, Germany
		11:15-11:30		Hendrik Bulthuis Akwadukt- Burgum <i>Van het Erve and Schröder</i> Mobilis TBI infra, the Netherlands (Project in Friesland, the Netherlands)	An Experimental Study of Autogenous and Drying Shrinkage <i>Gilbert, Castel, Khan, South and Mohammadi</i> UNSW, School of Civil and Environmental Engineering, Sydney, Australia
		11:30-11:45		Tunnel Underneath Highway A12 near Ede <i>Schoenmakers and de Rooij</i> Wagemaker, Rosmalen, the Netherlands (Project near Ede, the Netherlands)	Comparative Study on the Drying Shrinkage and Mechanical Properties of Geopolymer Foam Concrete Incorporating Different Dosages of Fiber, Sand and Foam Agents <i>Abdollahnejad, Zhang, Wang and Mastali</i> University of Southern Queensland, Toowoomba, Australia
		11:45-12:00		The Combined Bypass Railway and Tangent Road Project near the Station of Mechelen (Belgium) <i>De Pauw</i> TUC RAIL Ltd., Brussels, Belgium (Project in Mechelen, Belgium)	Finite Element Implementation of a Drying Shrinkage Model based on Pore Evaporation Mechanics <i>Nijs and Ishikawa</i> Delft University of Technology, the Netherlands
		12:00-12:15		Revolutionary Iso-Static Structural Design of Hinged Double-Decked Tunnels in Antwerp Belgium <i>Kaalberg, Los, Ruigrok, Roggeveld, Osselaer and THVROT (JV of Witteveen+Bos and SWECO), Belgium (Project in Antwerpen)</i>	Numerical Analysis of Long Term Effects on Eigenstresses and Micro-Cracking in Concrete <i>Bouquet and Braam</i> Delft University of Technology, the Netherlands
12:15-12:30		The World's Largest Sea Lock in IJmuiden <i>Wernsen and Lous</i> BAM infraconsult, Gouda, the Netherlands (Project in IJmuiden, the Netherlands)	Shrinkage and Expansion Strains in Self-Compacting Concrete: Comparison of Methods of <i>Zdanowicz and Marx</i> University of Hannover, Germany		

0.4 Brussels	0.5 Paris	0.8 Rome	0.9 Athens
Durability and Life Time	Existing Concrete Structures	Modelling, Testing and Design	Special Loadings
Durability and Life Time	Load Testing	Connections and Anchors	Special Loading and Codes
<i>Chair: Olsen</i>	<i>Chair: De Boer</i>	<i>Chair: Keuser</i>	<i>Chair: Dancygier</i>
Experimental Study on Anticorrosive Effect of New Developed Sacrificial Point Anode Method <i>Koda, Aoyama, Yamamoto and Hamada</i> P.S.Mitsubishi Co., Ltd., Tokyo, Japan	Development of a Smart Key Performance Indicator for In-situ Load Tests <i>Dieteren, Bigaj-van Vliet, Yang and Sangers</i> TNO, Delft, the Netherlands	Influence of the Anchor Fan Position on the Performance of FRP Anchors <i>Villanueva Llauradó, Fernández Gómez and González Ramos</i> Technical University of Madrid, Spain	Numerical Investigation on Structural Behavior of RC Beam-Slab Assemblies under an Exterior Column Removal Scenario <i>Yu, Luo and Ge</i> Hohai University, Nanjing, China
Study on Renewal Method from Deteriorative RC Slab to Precast PC Slab in the Steel Girder Bridge <i>Sakai</i> Central Nippon Expressway Co. Ltd., Nagoya, Japan	Determination of Loading Protocol and Stop Criteria for Proof Loading with Beam Tests <i>Lantsoght, Yang, Van der Veen, De Boer and Hordijk</i> Delft University of Technology, the Netherlands	Experimental Assessment of an Innovative Beam to Column Connection <i>Bujnak, Roeser, Matiasko and Böhm</i> Peikko Group Corporation, Lahti, Finland	Tools for the Fire Design of Concrete Columns using EN 1992-1-2 Method A <i>Fingerloos</i> German Society for Concrete and Construction Technology, Berlin, Germany
Durability and Bond of Reinforced Lightweight Foamed Concrete <i>Van Zijl, Van Rooyen, Mubatapasango, Dunn and Grafe</i> Stellenbosch University, South Africa	Numerical Simulations of a Concrete Bridge Deck Loaded to Shear Failure <i>Hallgren, Eriksson and Karlsson</i> KTH Royal Institute of Technology, Stockholm, Sweden	The Concept of Determining the Effective Strength of Joint Concrete in the Analysis of Internal and Edge Columns <i>Goldyn and Urban</i> Lodz University of Technology, Poland	Lateral Stability of Prestressed Precast Concrete Girders during Lifting: Study Case <i>De la Fuente, Bairán, Cavalaro, Goodier and Palmeri</i> Polytechnic University of Catalonia, Barcelona, Spain
Generic Modelling of Propagation of Reinforced Concrete Damage <i>Andrade and Rebolledo</i> Eduardo Torroja Institute for Construction Sciences – CSIC, Madrid, Spain	Full-scale Model Test of Prestressed Segmental Precast Continuous Girder Bridge <i>Shi, Liu and Zhou</i> Tongji University, Shanghai, China	RC Fiber-Based Beam-Column Element with Flexure-Shear-Torsion Interaction <i>Kagermanov and Ceresa</i> The School of Advanced Studies (IUSS), Pavia, Italy	On the Disproportionate Collapse Risk and Robustness in the Eurocode <i>Hatahet, Tareq, Könke and Carsten</i> Bauhaus-University Weimar, Germany
The Reference Approach to Service Life Design <i>Torrent</i> Materials Advanced Services Ltd., Buenos Aires, Argentina	Full-Scale Tests to Failure Compared to Assessments – Three Concrete Bridges <i>Bagge, Nilimaa, Puurula, Täljsten, Blanksvärd, Sas, Elfgrén and Carolin</i> Luleå University of Technology, Sweden	Experimental Analysis on the Cyclic Performance of Bolted Precast Connections <i>Camnasio and Kriakopoulos</i> Peikko Group Corporation, Lahti, Finland	<i>fib</i> Report on Design of Concrete Members Strengthened with Externally Applied Reinforcement <i>Matthys and Triantafillou</i> Ghent University, Belgium
Wear Resistance of Concrete Floors: Drafting the Guidelines for Concrete Design and Surface Finishings <i>Kupers, Doooms and Piérard</i> Belgium Building Research Institute, Limelette, Belgium	Load Testing of Concrete Structures in Germany – General Practice and Recent Developments <i>Schacht, Bolle and Marx</i> Marx Krontal GmbH, Hannover, Germany	A Study of Test Methods on Alkaline Resistance and Creep Characteristic for Post-Installed Bonded Anchors <i>Nakamura, Iguchi, Tsukishima and Iwata</i> East Japan Railway Company Tohoku Construction Office, Sendai, Japan	A Comparative Design of a Multi-story Reinforced Concrete Building with Reentrant Corner Irregularity According to Turkish, Eurocode and ACI 318 Standards <i>Gok and Aksu-Ozkul</i> Istanbul Technical University, Turkey

Time		Auditorium 2	0.11 Pressroom	0.2 Berlin
			Project Presentations	Modelling, Testing and Design
			Bridge, Strengthening, Foundation and Restoration	Shear: Experiments and Modelling
			Chair: Lagendijk	Chair: Cervenka
Tuesday, June 13, 13:30-15:30 Parallel Sessions 5	13:30-13:45		The Strongest UHPC Bridge in the Netherlands <i>Falbr</i> FDN Engineering, the Netherlands (Project in Eindhoven, the Netherlands)	On the Potential of Lattice Type Model for Predicting Shear Capacity of Rein-forced Concrete and SHCC Structures <i>Lukovic, Yang, Schlangen and Hordijk</i> Delft University of Technology, the Netherlands
	13:45-14:00		The Foundation of an All Glass Arch Bridge for the Green Village on the Delft University campus <i>Nijse and Snijder</i> Delft University of Technology (Project in Delft, the Netherlands)	Shear Failure Tests On Large Specimens RC/SFRC, Including Statistical Repetition <i>Van den Bos, Ma and Menting</i> DIANA FEA BV, Delft, the Netherlands
	14:00-14:15		From Architectural Vision to Reality - Designing and Building the New E-line Station Den Haag <i>Blom</i> BAM Infraconsult, Gouda, the Netherlands (Project in the Hague, the Netherlands)	Extended Strip Model for Slabs subjected to a Combination of Loads <i>Lantsoght, Van der Veen and De Boer</i> Delft University of Technology, the Netherlands
	14:15-14:30		Monolithic Pouring of the Foundation Slab of the 632 m high Shanghai Tower <i>Gong, Cui and Yuan</i> Tongji University, Shanghai, China (Project in Shanghai, China)	Experimental Investigations on the Shear Capacity of Prestressed Concrete Continuous Beams with Rectangular and I-Shaped Cross-Sections <i>Herbrand, Kueres, Classen and Hegger</i> RWTH Aachen University, Germany
	14:30-14:45		Viaduct over River Almonte. High Speed Rail Line Madrid - Lisbon <i>Capellán, Martínez, Merino and García-Arias</i> Arenas & Asociados, Santander, Spain (Project near Reservoir of Alcántara, Spain)	Effect of Post Shear Reinforcing Methods with Plate and Head Anchored Shear Reinforcing Bars <i>Kumagai, Nakamura, Sakamoto, Takeda and Niwa</i> Tokyo Institute of Technology, Japan
	14:45-15:00		Elevation and Refurbishment of 4 Lock Bridges on the Albert Canal in Belgium <i>Somers</i> Flemish government, Brussels, Belgium (Project in Albert Canal, Belgium)	Shear Capacity - Crossing Borders <i>Barten and 't Hart</i> Tunnel Engineering Consultants, Amersfoort, the Netherlands
	15:00-15:15		Strengthening of 100 Year Old Concrete Arch Bridge 'Kuhbrücke/Hildesheim' <i>Weiher, Praus and Runtemund</i> matrices engineering GmbH, Germany (Project near Hildesheim, Germany)	Shear Bearing Behaviour of Slender Reinforced Concrete Members without Shear Reinforcement Containing a Low Ratio of Longitudinal Reinforcement <i>Riedel and Leutbecher</i> University of Siegen, Germany
	15:15-15:30		Bridge Collision Protection Ramp – Kampen – The Netherlands <i>Van Schie</i> Volker InfraDesign, the Netherlands (Project near Kampen, the Netherlands)	A new Shear Model for Fibre-Reinforced Concrete Members without Shear Reinforcement <i>Tran</i> Technische University Darmstadt, Germany

0.4 Brussels	0.5 Paris	0.8 Rome	0.9 Athens
Historic Concrete	Modelling, Testing and Design	Durability and Life Time	Materials Technology
Historic Concrete	Anchorage	Corrosion and Durability	Innovative Concretes and Codes
<i>Chair: Moussard</i>	<i>Chair: Sung-Gul Hong</i>	<i>Chair: Mancini</i>	<i>Chair: Foster</i>
Maintenance and Repair of Concrete Structures of Le Havre, The City Rebuilt by Perret, Inscribed <i>Kanéma, Pantet and Jamet</i> Normandy University - University of Le Havre, France	Investigation of Reinforcement Anchorages with Large Diameter Bars <i>Schoening and Hegger</i> RWTH Aachen University, Germany	A Proposal for Determining the Remaining Time to Chloride Induced Corrosion Initiation of Existing Reinforced Concrete Structures <i>Polder, Boutz and Ottelé</i> TNO, Delft, the Netherlands	From Laboratory into Practice - German Approach for Accelerating the Transfer of Innovative <i>Reichling and Wiens</i> German Committee for Structural Concrete (DAFStb), Berlin, Germany
The search for affordable cement and concrete in the 18 th and 19 th century <i>Apréa</i> Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland	Efficient End-zone Detailing of Pre-tensioned Concrete Elements <i>Steensels, Vandoren, Vandewalle, Degée</i> Hasselt University, Belgium	Investigations on Existing Concrete Cantilever Walls subjected to Reinforcement Corrosion <i>Kwapisz, Vorwagner, Rebhan and Tschuchnigg</i> Austrian Institute of Technology GmbH, Vienna, Austria	Transfer of Innovative Research Results into the German Cement Industry <i>Schaeffel and Müller</i> VDZ gGmbH (VDZ), Düsseldorf, Germany
The Invention of Reinforced Concrete (1848 – 1906) <i>Moussard, Garibaldi and Curbach</i> Chair <i>fib</i> Commission 1	Required Thickness of Flexurally Rigid Baseplate for Anchor Fastenings <i>Li</i> Dr. Li Anchor Profi GmbH, Freudenstadt, Germany	Influence of Crack Spacing on Corrosion Rate in Reinforced Concrete <i>Bezuidenhout and Van Zijl</i> Stellenbosch University, South Africa	High Performance Aerogel Concrete <i>Welsch and Schnellenbach-Held</i> University of Duisburg-Essen, Germany
Early Developments of Concrete Prefabrication <i>Fernández-Ordóñez Hernández</i> <i>fib</i> Secretariat, Lausanne, Switzerland	Experimental Research and Modelling of Corbel Strengthened by Steel Accessory <i>Krawczyk and Urban</i> Lodz University of Technology, Poland	Influence of Rebar Corrosion on RC Frame Push-over Response <i>Lo Presti, Recupero and Spinella</i> University of Messina, Italy	Experimental Investigation on Thermal Conductivity and Mechanical Properties of a Novel Aerogel Concrete <i>Tsioulou, Ayegbusi and Lampropoulos</i> University of Brighton, United Kingdom
The Hoyer-System - a Forgotten Pre-Stressed Concrete System up to date again <i>Steinbock and Curbach</i> Technical University Dresden, Germany	Long-term Performance of External Bonding under Moisture and Temperature Effects <i>Ueda, Shrestha, Rashid, Qian and Dawei</i> Hokkaido University, Sapporo, Japan	New Russian Norms and Codes on Protection of Building Structures against Corrosion <i>Falikman, Rozentahl and Stepanova</i> Scientific Research Center "Construction", Moscow, Russia	Cellular Sprayed Concrete: A Very-simple and Economic Method for Remixing an OPC into HPC at a field <i>Yun, NamKung, Han and Lee</i> Kangwon National University, South Korea
Self-Anchored Suspension Bridges with Prestressed Concrete Deck: Some Historic Examples <i>Taerwe</i> Ghent University, Belgium	Behavior of Anchorages with Supplementary Reinforcement under Tension or Shear Forces <i>Sharma, Eligehausen, Asmus and Bujnak</i> University of Stuttgart, Germany	Influence of Aggregates Porosity on Concrete Overall Durability - Outcomes of Investigations carried out for the New Coastal Road on La Reunion Island Major Project <i>Linger, Carcasses, Cassagnabere, Cussigh, Rougeau, Mai-Nhu et al.</i> VINCI Construction, France	Effects of Silane Treatment of Steel Fibres on Mechanical Properties and Durability of SFRC <i>Miller, Akbarnezhad, Foster, Mesgari and Amin</i> University of New South Wales, Australia
The Reconstruction of Le Havre: A Cross-Disciplinary View <i>Pantet, Eleta-Defilippis, Valtier, Chevé and Bonneau-Contremoulins</i> Normandy University - University of Le Havre, France	Analytical Model for Anchorages with Supplementary Reinforcement under Tension or Shear Forces <i>Sharma, Eligehausen, Asmus, Bujnak and Schmid</i> University of Stuttgart, Germany	Durability and Seismic Resistance of an Aged Precast Prestressed Concrete Building Based on Field Inspections and Laboratory Testing <i>Kamaruddin, Watase, Raouffard, Bedriñana, Zhang and Nishiyama</i> Kyoto University, Japan	Size Effect on Post-Cracking Strength of High Performance Fibre-Reinforced Concrete <i>Galeote, Blanco, De la Fuente, Goodier and Austin</i> Polytechnic University of Catalonia, Barcelona, Spain
Exporting Prestressed Concrete to Africa. The construction of the Bata 300 Shoe Factory in Kinshasa, DR Congo, 1962–1965* <i>Fivez</i> Ghent University, Belgium	Headed Bar Connections between Precast Concrete Panels Loaded in Bending <i>Vella, Vollum and Jackson</i> Imperial College London, United Kingdom	Implementation of a Global Durability Approach in Close Cooperation between Owner/Engineer, Designers and Contractor's Joint-Ventures for the New Coastal Road on Reunion Island (France) <i>Linger, Mai-Nhu, Rougeau, Torrenti, Outterlyck, Denis, Magne and Dupuy</i> VINCI Construction, France	Partial Safety Factor for the Residual Flexural Strength of FRC Precast Concrete Segments <i>De la Fuente, Cugat, Cavalaro and Bairán</i> Polytechnic University of Catalonia, Barcelona, Spain

Time		Auditorium 2	0.11 Pressroom	0.2 Berlin
			Project Presentations	Materials Technology
			Buildings	Injection and Repair
			<i>Chair: Taerwe</i>	<i>Chair: Bayrak</i>
Tuesday, June 13, 16:00-17:30	Parallel Sessions 6	16:00-16:15	<p>The European Central Bank, Frankfurt, Germany</p> <p><i>Berger, Grohmann and Bollinger</i></p> <p>B+G Ingenieure, Germany (Project in Frankfurt, Germany)</p>	<p>Investigation of New Repair Countermeasure Methods using Crack Self-Healing Technologies for Water Leakage Prevention on Subway Tunnels</p> <p><i>Kamei, Ahn, Park, Hashimoto, Ogura and Kishi</i></p> <p>Tokyo Metro Co., Ltd., Japan</p>
		16:15-16:30	<p>Campus Tower in Hafencity Hamburg</p> <p><i>Krah</i></p> <p>Schüßler-Plan Ingenieurgesellschaft mbH, Germany (Project in Hamburg, Germany)</p>	<p>The Estimation of the Self-Healing Repair Technology for Cracked Underground Structures on the Urban Highway System</p> <p><i>Huang, Ahn, Park, Konishi, Ogura, Nishi, Sato, Ishikawa and</i></p> <p>CORE Institute of Technology Corporation, Tokyo, Japan</p>
		16:30-16:45	<p>Challenging Project in Prefabricated Concrete, Infosys Multi level Car Park, Pune, India</p> <p><i>Bhate</i></p> <p>Precast India Infrastructures Pvt Ltd, India (Project in Pune, India)</p>	<p>Specification Guidelines for Surface Preparation of Concrete Prior to Repair</p> <p><i>Courard, Bissonnette and Garbacz</i></p> <p>University of Liège, Belgium</p>
		16:45-17:00	<p>A New Grandstand in Precast Concrete for Football Team KV Ostend</p> <p><i>Veys and van der Zee</i></p> <p>Ergon nv Belgium, Belgium (Project in Ostend, Belgium)</p>	<p>Impact of Different Conditions on Resin Coated Mortar</p> <p><i>Ul-Abdin, Rajper, De Winne, Schotte and De Backer</i></p> <p>Ghent University, Belgium</p>
		17:00-17:15	<p>Hospital AZ Zeno in Knokke (Belgium) - Application of Post-Tensioning in a Concrete Structure Building</p> <p><i>Rémont, Pareit and Servais</i></p> <p>Bureau Greisch, Liege, Belgium (Project in Knokke, Belgium)</p>	<p>Structural Restoration of Fractured Concrete Specimens using Pressured Crack Injection Technology and Micro-silica</p> <p><i>Govender</i></p> <p>University of Cape Town, South-Africa</p>
		17:15-17:30	<p>Coloured Self-Compacting Concrete for the New Train Station in Herstal, Belgium – A Case Study</p> <p><i>Jasienski, Boulaïoun, Balfroid and Conard</i></p> <p>MULTIPLE architecture & urbanism, Belgium (Project in Herstal, Belgium)</p>	<p>Existing Large and Thin Concrete Slab Damaged by Multiple Cracks almost Pierced; Expertise, Diagnosis, Strengthening, Behavior and Control after Execution</p> <p><i>Popaescu, Deaconu, Croitoru and Radu</i></p> <p>University of Transilvania Brasov, Romania</p>

0.4 Brussels	0.5 Paris	0.8 Rome	0.9 Athens
Materials Technology	Safety, Reliability and Codes	Modelling, Testing and Design	Modelling, Testing and Design
Innovative Concretes (Supplementary Cementitious Materials)	Model Code	Prestressing and Precast	Encased Steel Profiles and Coupling Beams
<i>Chair: Schlangen</i>	<i>Chair: Corres Peiretti</i>	<i>Chair: Sigrist</i>	<i>Chair: Marx</i>
Effect of Curing Regime and Controlled Permeability Formwork on early Chloride Penetration <i>Sørensen and Poulsen</i> Danish Technological Institute, Denmark	Concrete Columns with High Reinforcement Ratios <i>Held, Oettel and Empelmann</i> Technical University of Braunschweig, Germany	From 1P to 4P - Innovative Solutions in Precast Prestressed Concrete Viaducts <i>Quartel and Zielinski</i> Consolis Spanbeton B.V., Koudekerk aan den Rijn, the Netherlands	A Design Method for Walls With Encased Steel Profiles <i>Plumier, Degee, Dragan and Huy</i> University of Liege, Belgium
Effect of the Cement Composition on the Temperature and Strength rising at Early Age <i>Bourchy, Barnes, Bessette and Torrenti</i> IFSTTAR, Champ-sur-marne, France	Bearing Capacity of Partially Loaded Concrete Elements <i>Pamplona, Ferreira and Vollum</i> Federal University of Para, Brazil	Use of Post-tensioned Concrete Slabs for Sustainable Design of Buildings <i>Süleymanoğlu, Uzel and Arslan</i> Yeditepe University, Istanbul, Turkey	Experimental Study Regarding Shear Behavior of Concrete Walls Reinforced by Multiple Steel Profiles <i>Dragan, Plumier and Degée</i> Hasselt University, Belgium
Concrete with Flash-Calcined Dredging Sediments as a Novel Supplementary Cementitious Material <i>Van Bunderen, Snellings, Horckmans, Dockx, Vandekeybus, et al.</i> University of Leuven, Belgium	Self Restrained Cracking of Reinforced Concrete Elements <i>Anerdi, Bertagnoli, Gino and Mancini</i> The Polytechnic University of Turin, Italy	Investigating the Potential of using High Performance Concrete in Precast High Speed Rail Bridges <i>Pring and Ruiz-Teran</i> Imperial College London, United Kingdom	Transfer of the Longitudinal Shear at the Steel-Concrete Interface in Concrete Members Reinforced by Steel Profiles <i>Degée, Dragan, Bogdan and Plumier</i> Hasselt University, Belgium
Engineering Properties and Durability of Mortars Containing New Nano Rice Husk Ash (RHA) <i>Balapour, Hajibandeh and Ramezaniapour</i> Amirkabir University of Technology, Iran	Investigating the Need for Long Laps in Reinforced Concrete Elements <i>Micallef, Vollum and Izzuddin</i> Imperial College London, United Kingdom	Prefabricated Tendons in Belgium and the Netherlands - Value-add for all Involved Parties <i>Gläser and Jansen</i> DYWIDAG-Systems International GmbH, Munich, Germany	Macro-Kinematic Approach for Shear Behaviour of Short Coupling Beams with Conventional Reinforcement <i>Mihaylov and Renaud Franssen</i> University of Liège, Belgium
Effect of Rice Husk Ash Properties on the Early Age and Long-term Strength of Mortar <i>Rasoul, Günzel and Rafiq</i> University of Brighton, United Kingdom	Uncertainties of Crack Width Models <i>Cervenka, Markova, Mlcoch, Perez-Caldentey, Sajdlova and Cervenka Consulting, Prague, Czech Republic</i>	Design and Fabrication of Prestressed Concrete Box Girder Bridge with U-shaped Segments <i>Nishiguchi, Yamamura, Hiroi, Yamashita, Nakanishi and IHI Construction Service Co., Ltd., Osaka, Japan</i>	Influence of Shear on Deformations of Coupling Beams <i>Fisher, Collins and Bentz</i> Read Jones and Christoffersen (RJC) Engineers, Toronto, Canada
Effect of Pozzolanic Reactivity of Volcanic Ash in Hokkaido on the Durability of Volcanic Ash Concrete <i>Taniguchi, Takahashi and Sagawa</i> Hokkaido Research Organization, Japan	Contemporary Analysis and Numerical Simulation of Revisited Long-term Creep Tests on Reinforced Concrete Beams from the Sixties <i>Van Mullem, Reybrouck, Criel, Taerwe and Caspeele</i> Ghent University, Belgium	High Tensile Bond Anchorage for Post-Tensioning Bar Tendon Systems <i>Löffler and Birckel</i> DYWIDAG-Systems International GmbH, Munich, Germany	Steel- Concrete- Composite Bridges with Innovative Prefabricated Slab Elements <i>Fuchs, Gaßner and Kollegger</i> Technical University Wien, Austria

Time		Auditorium 2
Wednesday, June 14, 9:00-10:30 Keynote Session B	9:00-9:30	<p style="text-align: center;">Ultra-High Performance Concrete - Technology for Present and Future</p> <p style="text-align: center;"><i>Prof. Yen Lei Voo</i></p> <p style="text-align: center;">Dura Technology, Malaysia and University of New South Wales, Sydney, Australia</p>
	9:30-10:00	<p style="text-align: center;">3D Concrete Printing - A Structural Engineering Perspective</p> <p style="text-align: center;"><i>Prof. Theo Salet</i></p> <p style="text-align: center;">Eindhoven University of Technology and Witteveen+Bos, the Netherlands</p>
	10:00-10:30	<p style="text-align: center;">Codes of practice: burden or inspiration?</p> <p style="text-align: center;"><i>Prof. Joost Walraven</i></p> <p style="text-align: center;">Delft University of Technology, the Netherlands</p>

Keynote Lectures



Prof. Yen Lei Voo

about



UHSB



Prof. Theo Salet

about



3D-Printing



Prof. Joost Walraven

about



Codes

Time		Auditorium 2	0.11 Pressroom	0.2 Berlin	
		Interactive MC Session	Modelling, Testing and Design	Durability and Life Time	
		Model Code 2020	FEM (Finite Element Modelling)	Chloride Effects and Degradation	
		<i>Chair: Bigaj-van Vliet</i>	<i>Chair: Hendriks</i>	<i>Chair: Polder</i>	
Wednesday, June 14, 11:00-12:30	Parallel Sessions 7	11:00-11:15	<i>fib</i> vision on Model Codes incl. internationalization and broad participation in MC2020 <i>Corres</i> President <i>fib</i>	Nonlinear Analysis of Reinforced Concrete Structure by ECOV Method in SLS and ULS <i>Ma and Van den Bos</i> DIANA FEA BV, Delft, the Netherlands	Chloride Ingress of Carbonated Blast Furnace Slag Cement Mortars <i>Holthuizen, Çopuroğlu and Polder</i> Delft University of Technology, the Netherlands
		11:15-11:30	Priorities in advancing <i>fib</i> Model Code for Concrete Structures <i>Matthews</i> Chairman <i>fib</i> T10.1 on MC 2020	Automatic Reinforcement Method Using NLFEA <i>Van der Aa</i> DIANA FEA BV, Delft, the Netherlands	Detecting the Presence of Chloride in Hardened Mortar using Microwave Non-Destructive Testing <i>Chiniforush, Noushini, Akbarnezhad and Valipour</i> The University of New South Wales, Sydney, Australia
		11:30-11:45	Questions and Plenary Discussion on MC 2020 <i>Bigaj-van Vliet (Moderator)</i> Co-chairman <i>fib</i> T10.1 on MC 2020	Simple to Advanced Finite Element Shape Modelling With DIANA <i>Van der Aa and Manie</i> DIANA FEA BV, Delft, the Netherlands	The Influence of Calcium Chloride on Flexural Strength of Cement-based Materials <i>Qiao, Suraneni, Chang and Weiss</i> Oregon State University, USA
		11:45-12:00	<i>Paper on TOPIC 1: Service Life Design</i> Service Life Modelling for Chloride Ingress in Reinforced <i>Nielsen</i> Ramboll Denmark A/S, Denmark	Modelling Structural Concrete with Strut-and-Tie Model combined with 2D Finite Elements - A Model Factor for the Assessment of Strut-and-Tie Models <i>Pedrosa Ferreira, Almeida and Lourenço</i> CERIS, Lisboa, Portugal	Evaluation and Practical Implementation of Probabilistic Calculations of Chloride Penetration for Belgian Concretes in the Framework of a Durable Design <i>De Winter, Minne, Caspeele, Craeye, De Schutter, De Pauw et</i> University of Leuven, Belgium
		12:00-12:15	Questions and Plenary Discussion on TOPIC 1: Service Life Design	Non-Linear FE-analysis of Stress Redistribution in a Deep Beam <i>Kempengren</i> Lund University, Sweden	Toward Performance Specifications for Concrete: Linking Resistivity, RCPT and Diffusion Predictions using the Formation Factor for Use in Specifications <i>Weiss, Spragg, Isgor, Ley and Van Dam</i> Oregon State University, USA
		12:15-12:30	<i>Matthews (Moderator)</i> Chairman <i>fib</i> T10.1 on MC 2020	Simulation of Contact Surfaces in Self-centering Reinforced Concrete Frames with Test Validation <i>Jiang and Lu</i> Tongji University, Shanghai, China	Accelerated Testing for Chloride Threshold of Reinforcing Steel in Concrete <i>Polder, Van Put and Peelen</i> TNO, Delft, the Netherlands

0.4 Brussels	0.5 Paris	0.8 Rome	0.9 Athens
Existing Concrete Structures	Modelling, Testing and Design	Modelling, Testing and Design	Modelling, Testing and Design
Repair and Strengthening	Steel - Concrete Composites	NDT (Non-Destructive Testing)	Mechanical Behaviour
<i>Chair: Randl</i>	<i>Chair: Lantsoght</i>	<i>Chair: Yang</i>	<i>Chair: Balazs</i>
Bond Strength of Steel FRC Repairs to Concrete Substrate: Investigation on Adhesion Strength, Friction and Bond <i>Rostagno, Tingley and Zanotti</i> University of Brescia, Italy	Design of Joint Sections of a Steel-concrete Composite Bridge <i>Iwai, Akamine and Azetsu</i> P.S.Mitsubishi Construction Co., Ltd, Osaka, Japan	Early Strength of Shotcrete for Tunnel Advances - New Monitoring Approach using Thermal Imaging <i>Weiher, Jones and Runtemund</i> Matrics engineering GmbH, Munich, Germany	Sub-Macroscopic Model of Confined Concrete According to Limit Analysis - Part 1: Principal Concrete Failure Mechanisms <i>Andersen and Hagsten</i> Aarhus University School of Engineering, Denmark
Numerical Investigation of Strengthened Unreinforced Masonry (URM) Structures with Ultra High Performance Fibre Reinforced (UHPFRC) layers <i>Lampropoulos, Tsioulou and Dritsos</i> University of Brighton, United Kingdom	The SMARTCOCO Project: A Research Push for Hybrid Structures <i>Plumier and Degee</i> University of Liege, Belgium	Geotechnical and Structural Applications of Fiber-Optic Sensing <i>Van Ravenzwaaij, Iten, Spruit and De Boer</i> Brem Funderingexpertise and monitoring, Reeuwijk, the Netherlands	Sub-Macroscopic Model of Confined Concrete According to Limit Analysis - Part 2: Estimation of Strength of Actively Confined <i>Andersen and Hagsten</i> Aarhus University School of Engineering, Denmark
Assessment of Lightweight Concrete-to-concrete Interface Shear Resistance <i>Čairović, Zlámal, Žitt and Štěpánek</i> Brno University of Technology, Czech Republic	Inelastic Assessment of Hybrid RC Beams to Steel Column Configurations using Structural Steel Shear-keys <i>Moharram, Bompá and Elghazouli</i> Imperial College London, United Kingdom	Performance of Mobile NMR for Non-destructive Analyses of Existing Concrete Structures - Influencing Factors <i>Orlowsky</i> TU Dortmund University, Germany	Ductility of Heavily Reinforced Concrete Beams <i>Van Gysel, Molken and Deygers</i> University of Leuven, Belgium
Restoration of Joban Line Railway Facilities Damaged by Tohoku-pacific Ocean Earthquake <i>Fujimoto, Iwata, Tatsuki and Ishikawa</i> East Japan Railway Company, Sendai, Japan	Behavior of a New Type of Shear Connector for U-shaped Steel-concrete Hybrid Beams <i>Keo, Lepourry, Somja and Palas</i> LGCGM/Structural Engineering Research Group, Rennes, France	Experimental and Theoretical Diagnostics of Defects in Ferroconcrete Piles based on Reflection of Longitudinal and Transverse Waves <i>Farenyuk, Kaliukh, Farenyuk, Kaliukh, Berchun and Berchun</i> Research Institute of Building Constructions, Kyiv, Ukraine	Bond Behaviour of Structural Lightweight Concrete <i>Trad, Ghanem and Ismail</i> Beirut Arab University, Lebanon
Investigations on the Strengthening of Existing Highway Bridges under Shear and Flexural Loading with <i>Herbrand, Adam and Hegger</i> RWTH Aachen University, Germany	Numerical Simulation of Compressive Failure Behaviors of Concrete-filled Steel Tube by using Coupled Discrete Model and Shell Finite Element <i>Mendoza, Yamamoto, Nakamura and Miura</i> Nagoya University, Japan	Non-Destructive Testing of Protective Components after Contact Detonation <i>Zircher, Keuser, Schulz and Burbach</i> University of German Armed Forces, Neubiberg, Germany	Deformation Patterns and Behavior of Reinforced Concrete Walls with <i>Tatar and Mihaylov</i> University of Liège, Belgium
Effectiveness of S-FRCM Strengthening System applied with Two Different Techniques <i>Bencardino and Condello</i> University of Calabria, Cosenza, Italy	Concrete Confinement and Degree of Shear Connection Effects in Hybrid Column Design <i>Keo, Somja, Nguyen and Hjjaj</i> LGCGM/Structural Engineering Research Group, Rennes, France	Reliability of Non-destructive Testing Methods by Detecting the Presence of Reinforcement in Existing Concrete Structures <i>Selek, Wijte and Swinkels</i> Van Rossum Raadgevende Ingenieurs b.v., Amsterdam,	Capacity Assessment of Concrete Box-girder Bridge Webs against the Combined Action of In-plane Shear <i>Karagiannis and Kaufmann</i> ETH Zurich, Switzerland

Time		Auditorium 2	0.11 Pressroom	0.2 Berlin
		Interactive MC Session	Durability and Life Time	Modelling, Testing and Design
		Model Code 2020	Degradation	UHPC
		Chair: Matthews	Chair: Gulikers	Chair: Hegger
Wednesday, June 14, 13:30-16:00 Parallel Sessions 8 and Closing Session	13:30-13:45	<p><i>Paper on TOPIC 2: Crack Width Control</i> Evaluation of Current Crack Width Calculation Methods according to Eurocode 2 and fib Model Code</p> <p><i>Tan, Hendriks and Kanstad</i></p> <p>Norwegian University of Science and Technology, Trondheim, Norway</p>	<p>Mechanical Properties of Concrete with Blast Furnace Slag Fine Aggregates subjected to Freeze-Thaw Cycles</p> <p><i>Farooq, Takeda, Sato and Niitani</i></p> <p>Hokkaido University, Japan</p>	<p>Innovative Post-Tensioning Concept with UHPC Anchorages (Hybrid-anker) for Railway Bridge for</p> <p><i>Birckel and Weiher</i></p> <p>DYWIDAG-Systems International GmbH, Langenfeld, Germany</p>
	13:45-14:00	<p>Questions and Plenary Discussion on</p> <p>TOPIC 2: Crack Width Control</p>	<p>Load Bearing Capacity of PC Girders with and without Fly Ash Affected by ASR Deteriorations</p> <p><i>Ha, Fukada, Torii, Kobayashi and Aoyama</i></p> <p>Kanazawa University, Japan</p>	<p>Shear Strength of UHPFRC Beams without Stirrups: Fracture Mechanics Approach</p> <p><i>Hong, Hong and Lee</i></p> <p>Seoul National University, Republic of Korea</p>
	14:00-14:15	<p><i>Mancini (Moderator)</i></p> <p>Member fib T10.1 on MC 2020</p>	<p>Modelling the Multi-Directional Distribution of ASR-Induced RC Expansions</p> <p><i>Wald, Hrynyk and Bayrak</i></p> <p>Univ. of Texas at Austin, USA</p>	<p>Bond Behavior of Strands in UHPC</p> <p><i>Vojvodic, Hadl and Nguyen</i></p> <p>Graz University of Technology, Austria</p>
	14:15-14:30	<p><i>Paper on Topic 3: SFRC</i> Engineering Model for SFRC Shear Strength Based on MC 2020 MCFT Approach</p> <p><i>Matthys and Soetens</i></p> <p>Ghent University, Belgium</p>	<p>Stress-strain Model for Concrete under Compressive Stress that has Undergone Freeze-thaw Deterioration</p> <p><i>Hayashida</i></p> <p>Civil Engineering Research Institute for Cold Region, Hokkaido, Japan</p>	<p>A Laboratory Test of UHPC Connection for Precast Bridge Deck</p> <p><i>Li, Jin, Ruan, Ma and Shi</i></p> <p>Tongji University, China</p>
	14:30-14:45	<p>Questions and Plenary Discussion on</p> <p>TOPIC 3: SFRC (Steel Fibre Reinforced Concrete)</p>	<p>Fatigue Model for the Structural Integrity Evaluation Applied to a Wind Turbine Concrete Shaft considering Corrosion and Freeze and Thaw Degradation.</p> <p><i>Saucedo-Mora and Thöns</i></p> <p>Institute Eduardo Torroja for Construction Sciences-CSIC, Madrid, Spain</p>	<p>Bending Behaviour of UHPC reinforced with Rebars and Steel Fibres</p> <p><i>Stürwald</i></p> <p>HSR University of Applied Sciences Rapperswil, Switzerland</p>
	14:45-15:00	<p><i>Walraven (Moderator)</i></p> <p>Member fib T10.1 on MC 2020</p>	<p>A New Efficient and Safe Admixture for Freeze/Thaw Resistant Concrete</p> <p><i>Schwoon</i></p> <p>Sika Services AG, Zurich, Switzerland</p>	<p>Development of Ultra High Strength Fiber-Reinforced Concrete (ESCON)</p> <p><i>Matsunaga, Nozawa, Maeda and Kobayashi</i></p> <p>New Product Development division, SE Corporation, Tokyo, Japan</p>
	15:00-15:15	<p><i>Question on TOPIC 4: ULS Shear Design</i> Stringer-Panel Models for D regions</p> <p><i>Blaauwendraad</i></p> <p>Ede, the Netherlands</p>	<p>Simplified Analytical Assessment of Damaged Induced by the External Sulphate Attack in Concrete Piles</p> <p><i>Ikumi, Cavalaro, Segura, Goodier and Austin</i></p> <p>University of Catalunya, Barcelona, Spain</p>	<p>Effect of Specimen Size and Initial Crack Location on Flexural Shear Behavior of UHPFRC</p> <p><i>Lee, Hong and Joh</i></p> <p>Seoul National University, Republic of Korea</p>
	15:15-15:30	<p>Questions and Plenary Discussion on</p> <p>Topic 4: ULS Shear Design</p> <p><i>Muttoni (Moderator)</i></p> <p>Member fib T10.1 on MC 2020</p>	<p>Effect of Supplementary Cementing Materials on Concrete Resistance against Sulfuric Acid Attack</p> <p><i>Ramezani-pour, Zolfagharnasab, Zadeh, Estahbanati, Boushehri et al.</i></p> <p>Amirkabir University of Technology, Tehran, Iran</p>	<p>Shear Behaviour of UHPC Beams with varying Degrees of Fibre and Shear Reinforcement</p> <p><i>Randi, Mészöly and Harsányi</i></p> <p>Carinthia University of Applied Sciences, Spittal/Drau, Austria</p>
	15:30-16:00	<p>Closing speech by fib President: Information on upcoming fib events:</p>	<p>Prof. Hugo Corres Peiretti fib Congress, Melbourne, October 2018 fib Symposium, Krakow, May 2019 fib Symposium, Shanghai, April 2020</p>	

0.4 Brussels	0.5 Paris	0.8 Rome	0.9 Athens
Challenging Projects	Modelling, Testing and Design	Safety, Reliability and Codes	Innovative Building Concepts
Challenging Projects	Shear	Assessment and Reliability	Innovative Building Concepts
<i>Chair: Van der Horst</i>	<i>Chair: Bentz</i>	<i>Chair: Ueda</i>	<i>Chair: Salet</i>
Adapting a Railway Bridge to allow for 10 m of Excavation around Raft Foundations while not <i>Spruit, Mastbroek and Van Hengstum</i> Municipality of Rotterdam, the Netherlands	An Experimental Study on the Transition of Failure between Flexural and Shear for RC Beams <i>Yang, Van der Veen, De Boer and Hordijk</i> Delft University of Technology, the Netherlands	Application of Rational Methods for the Selection of the most Plausible FE Models in Structural Analysis <i>Slobbe, Allaix, Courage and Bigaj-Van Vliet</i> TNO, Delft, the Netherlands	Optimising 3D Printed Concrete Structures using Topology Optimisation <i>Martens, Mathot, Bos and Coenders</i> White Lioness technologies, Amsterdam, the Netherlands
Recent Developments in Concrete Arch Bridges <i>Capellán, Merino, Sacristán, Martínez and Guerra</i> Arenas & Asociados, Santander, Spain	Shear Capacity of Concrete Slabs without Shear Reinforcement under Concentrated Loads Close to Support <i>Rombach, Günter, Henze and Lukas</i> Hamburg University of Technology, Germany	Verification of Conversion Factors used for Compressive Strength Values obtained for Structural <i>Thienel</i> Bundeswehr University Munich, Germany	A Real-time Height Measurement and Feedback System for 3D Concrete Printing <i>Wolfs, Bos, Van Strien and Salet</i> Eindhoven University of Technology, the Netherlands
Anchorage Blocks of the Second Humen Bridge <i>Yuan, Wu, Xu and Ya</i> Tongji University, Shanghai, China	Paradigms of Shear in Structural Concrete - Review and Experimental Verification <i>Beck and Kaufmann</i> ETH Zurich, Switzerland	Aspects of Implementation into Practice of the Optimization Strength Theory of RC <i>Mitrofanov and Pinchuk</i> Center for Advanced Design Methods of Concrete Structures, Poltava, Ukraine	3D Printing Concrete with Reinforcement <i>Bos, Ahmed, Wolfs and Salet</i> Eindhoven University of Technology, the Netherlands
Widening of Two Existing Curved Box Girder Bridges using Prefabricated Concrete Beams <i>Schoenmakers, Van Kessel, De Vos and Schoenmakers</i> Wagemaker, Rosmalen, the Netherlands	Influence of Support Conditions on Shear in RC Members without Shear Reinforcement <i>Adam, Reissen and Hegger</i> RWTH Aachen University, Germany	Predicting Service Life of Chimneys and Cooling Towers based on Monitoring <i>Sykora, Markova, Mlcoch, Molnar and Presl</i> Czech Technical University in Prague, Czech Republic	Case-study on the Application of Precast Double-curved Concrete Elements for the Green Planet Shell Structure <i>Witterholt, Schipper, Grünwald, Hoogenboom, Nijse and Van</i> VDK Engineering bv, Sassenheim, the Netherlands
Expanding the (Life)span of Two Bascule Bridges: Structural Upgrade of the Existing Concrete Bascule Basements of the Wilhelmina Bridge and the Beatrix Bridge of Zaandam <i>Van Cann, Hendriks and Zeilmaker</i> Wagemaker, Rosmalen, the Netherlands	Interface Stresses in Cracked Concrete: Testing for Review of its Fundamentals <i>Tirassa, Fernández Ruiz, Anciaux and Muttoni</i> EPFL, Lausanne, Switzerland	Reliability Assessments of Large Reinforced Concrete Structures using Non-linear Finite Element Analyses: Challenges and <i>Engen, Hendriks, Øverli and Åldstedt</i> Multiconsult ASA, Oslo, Norway	Multi-level Optimisation of Parabolic Shells with Stiffeners made from High-performance Concrete <i>Forman, Stallmann, Mark and Schnell</i> Ruhr-University Bochum, Germany
Legolizing Infrastructure: Quick Building with Prefabricated Building Blocks - a Pleasure for the Economy <i>Van Heesch and De Groot</i> Wagemaker, Rosmalen, the Netherlands	Quantification of the Uncertainty of Shear Strength Models using Bayesian Inference <i>Slobbe, Allaix and Yang</i> TNO, Delft, the Netherlands	Towards Mixed-Type Modelling of Structures with Slender and Deep Beam Elements <i>Liu, Guner and Mihaylov</i> University of Liège, Belgium	Canopy – Doubly Curved Folded Plate Structure <i>Van der Woerd, Chudoba and Hegger</i> RWTH Aachen University, Germany
Modifying and Renovating the 75 Year Old Maastunnel to meet with Modern Standards <i>Booltink, Leenders and Biemans</i> Mobilis B.V., Apeldoorn, the Netherlands	Experimental Investigation of the Effect of Curtailed Reinforcement on the Shear Failure of RC Members without Stirrups <i>Joergensen and Hansen</i> University of Southern Denmark, Odense, Denmark	Structural Performance Assessment of Bridge's Girder using Image Measurement System and <i>Prayoonwet, Jirawattanasomkul and Sato</i> Hokkaido University, Japan	Deliberate Deformation of Concrete in the Fresh State - Crack Risk and Efficient Production of Curved Precast <i>Troian, Grünwald, Schipper, Schlangen and Çopuroğlu</i> Academy of Sciences of Moldova, Chişinău, Republic of Moldova
Quasi-Rectangular Shield Tunneling Technology in the Ningbo Rail Transit Project <i>Liu, Liu, Yuan and Zhu</i> Tongji University, Shanghai, China	Suitability of Shear Tension Code Requirements for the Assessment of Existing Structures build-up with Prestressed I- and T-shape <i>Roosen, Van der Veen, Hordijk</i> Delft University of Technology, the Netherlands	Assessing the Life Cycle of Existing Maritime Structures - Application to a Harbour Bridge in Porto Port <i>Pereira, Moreira, Camões and Matos</i> University of Minho, Guimarães, Portugal	Design Process of a 3D-printed Concrete Water Taxi Stop <i>Van Wolfswinkel, Van 't Land, Stuit, Bastiaens, Ter Hall, et al.</i> Movares Nederland BV, Utrecht, the Netherlands

Best Young Engineer / PhD paper award
By fib young engineers group

Event Locations



MECC
Symposium Venue



City Hall
Welcome Reception
Monday (19:00 – 20:30)
Markt Maastricht



Music Hall
Gala Dinner
Monday (19:00 – 20:30)
De Griend 6-7, 6211 AJ Maastricht

Social Program

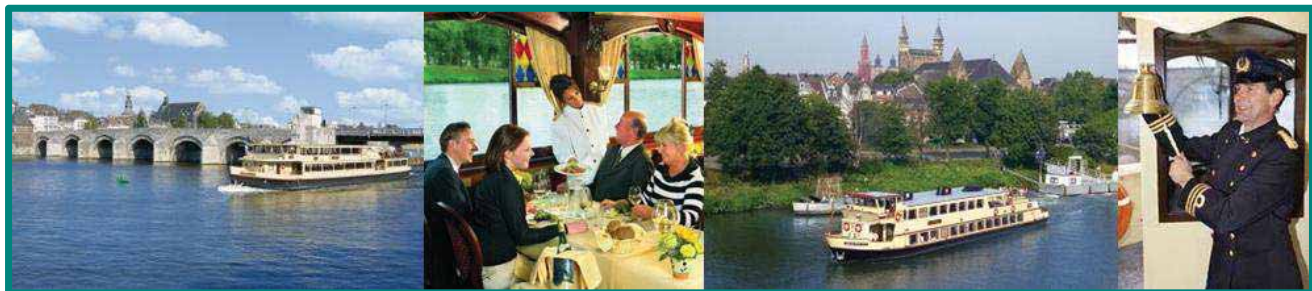
City walk

Monday June 12 2017, 10.00 – 11:30



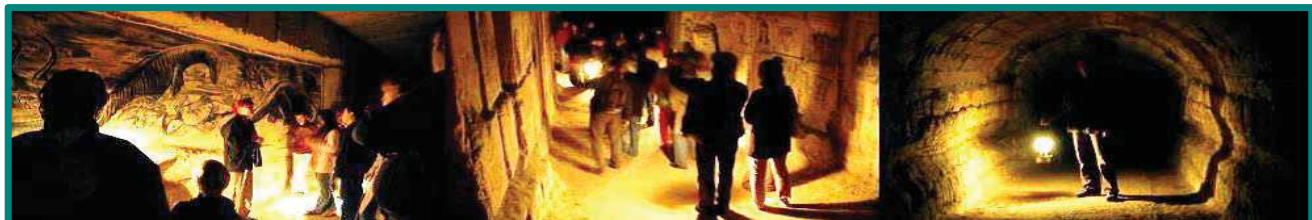
Cruise on the Meuse

Monday June 12 2017, 10.00 – 12:00

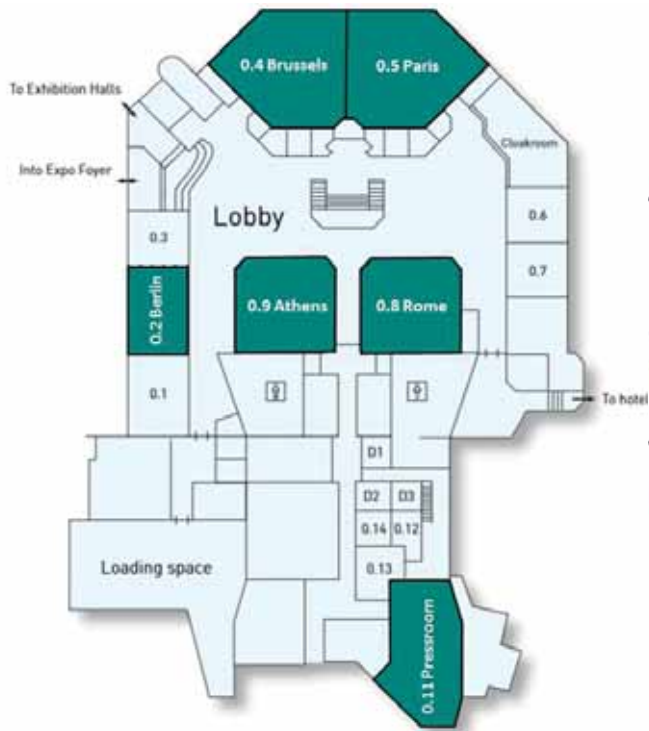


Caves St. Pietersberg

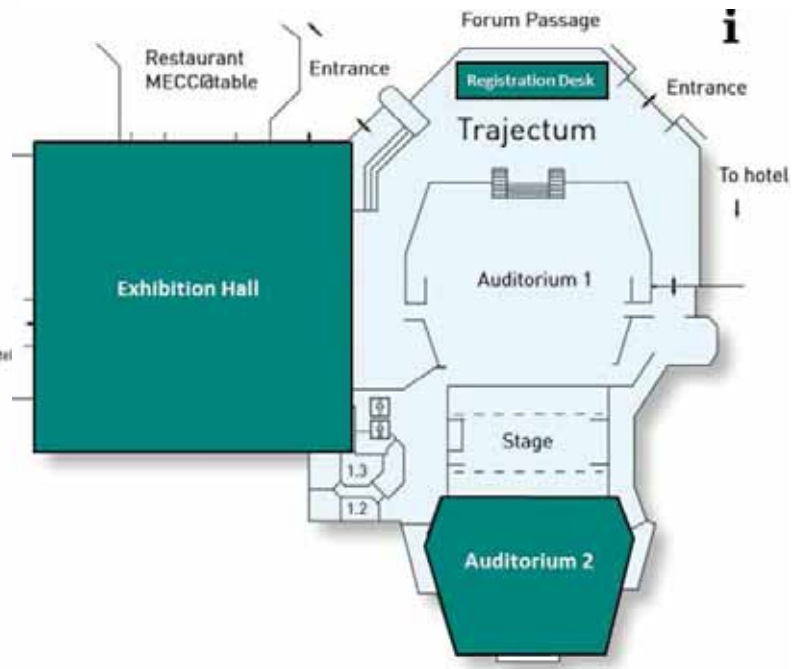
Monday June 12 2017, 10.00 – 11:00



Floor Plans

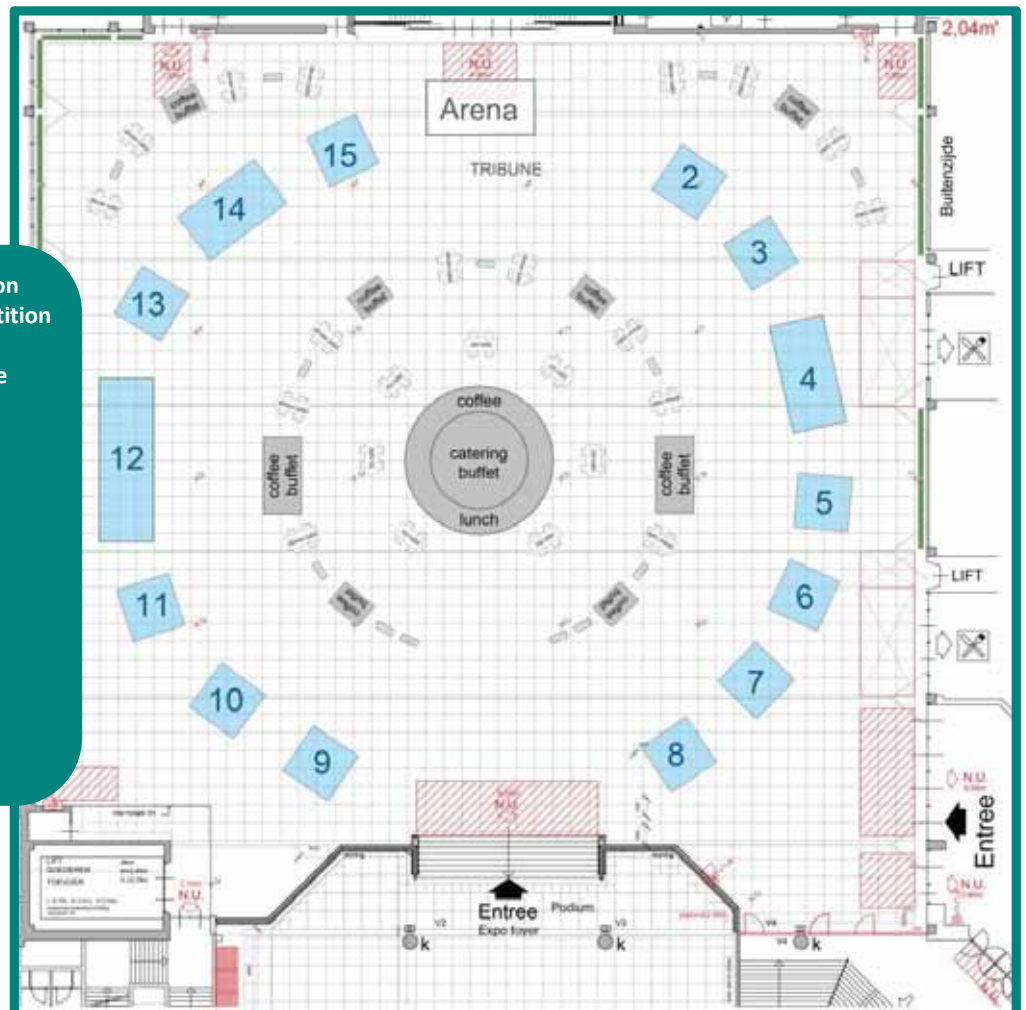


0 - Level



1 - Level

- 2 Peikko Group Cooperation
- 3 S-CO₂DE Student Competition
- 4 Rijkswaterstaat
Ministry of Infrastructure
and the Environment
- 5 YouCon
- 6 Betonvereniging
- 7 fib
- 8 DIANA FEA
- 9 Rilem
- 10 Strains
- 11 HRC Europe NL BV
- 12 BAM
- 13 Sika Nederland B.V.
- 14 DYWIDAG-Systems
International GmbH
- 15 Valbruna



Exhibition Hall

High Tech Concrete: Where Technology and Engineering Meet

Program Booklet for 2017 *fib* Symposium, Maastricht, The Netherlands, June 12–14, 2017

Apart from the regular scientific presentations the program includes:

- Project Presentations
- Interactive Model Code Sessions
- Student Competition S-CO₂DE

The *fib* (International Federation for Structural Concrete) is a not-for-profit association committed to advancing the technical, economic, aesthetic and environmental performance of concrete structures worldwide.