

6 ICCH

Sixth International Congress on Construction History

Congress programme

*Brussels, Belgium
July 9-13, 2018*



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General programme outline

	MONDAY	TUESDAY	WEDNESDAY
8h00	Welcome Coffee	Welcome Coffee	
9h00	Registration	3. Open session Medieval Vaults Towers & big buildings Nervi & Ferrocement Warehouses & Factories Vernacular & Earth	
10h00			
	Opening		
11h00	Keynote Thomas Coomans	Keynote Robert Thorne	
12h00	Lunch time	Lunch time	
13h30	1. Open session (Alternative) Sources Timber Vaults & Arches Iron & Steel	4. Open session Policy & Politics Timber & Iron Baroque Vaults Modern construction	
15h30	Coffee break	Coffee break	
16h00	2. Thematic session Building maintenance Early thin shells (1/2) Modern comfort	5. Thematic session Experts Historic precast concrete Transnational exchange	
18h00			Vis Half day and
	Welcome Reception at 19h00	PhD Event at 18h00	

WEDNESDAY

THURSDAY

FRIDAY

visits
full day tours

Welcome Coffee

Welcome Coffee

8h00

6. Open session
Gothic vaults & Spires
Materials & Forms
Representation
Stone, gypsum and brick

9. Open session
Contractors 19th C
Process of building
Trades & Contracts
Forts & Castles
Modernity & Locality

9h00

10h00

Coffee break

Coffee break

Aula
Keynote
Werner Lorenz

Aula
Keynote
Tullia Iori

11h00

Atrium
Lunch time

Atrium
Lunch time

12h00

7. Open session
Regulations
Concrete
Bridges 1
Building services

10. Open session
Ancient world
Innovations in concrete
Bridges 2
Contractors 20th C

13h30

Coffee break

Coffee break

15h30

8. Thematic session
Architects and bureaucrats
Early thin shells (2/2)

Closing session
Awards

16h00

18h00

Gala dinner
at 20h00

Sessions

1. OPEN SESSION - 4 parallel sessions

MONDAY July 9
13h30

1a **(Alternative) sources for Construction History**

ALBERT I

Chaired by Karl-Eugen Kurrer

Doors in English published books on architecture and building construction 1550-1800 - [Karey L. Draper](#), [James W.P. Campbell](#)

Geometry on paper and on the ground in the last third of the seventeenth century. Leclerc's and Manesson-Mallet's contribution and influence - [Javier Giron](#)

Transfer of knowledge through books and prints: Jesuit design for the Western buildings and fountains in the Yuanmingyuan in Beijing - [Hermann Schlimme](#)

Hydrotechnical models of the 'Modellkammer' (chamber of models) in Augsburg, Germany - [Raimund Mair](#), [Christiane Weber](#)

1b **Timber construction**

RUBENS

Chaired by David Yeomans

The caisson – review of a unique wooden construction typology in China - [Corentin Fivet](#), [Jingxian Ye](#), [Peilang Xu](#)

Historic timber framed courtyard houses: origin and development of the corralas in Madrid (1494-1908) - [Esperanza González-Redondo](#)

Sixteenth-century development from common rafter roofs to ridge purlins in Leiden (NL) - [Edwin Orsel](#)

Wooden survey towers in Germany - [Philip S. C. Caston](#)

The Munich state opera house. Constructing between tradition and progress at the beginning of the nineteenth century - [Clemens Knobling](#)

1c **Vaults, arches and structural design and analysis**

MARIE THERESE

Chaired by David Wendland

The graphic statics of the systems of space by Benjamin Mayor - [Thierry Ciblac](#)

Inquiring into the structural identity of the Sala dei Baroni vault - [Maria Teresa Como](#)

Arch bridge design in eighteenth-century France: the rule of Perronet - [Santiago Huerta Fernández](#)

The dome of Saint-Paul-Saint-Louis in Paris, a historical and structural analysis - [Laurens Moubax](#), [Krista De Jonge](#)

Assessing geometrically the structural safety of masonry arches - [Jean-François Rondeaux](#), [Aurélié Deschuyteneer](#), [Denis Zastavni](#)

1d **Iron and steel construction**

AULA

Chaired by Tom Leslie

The rise and fall of the cast iron breast panel in Britain (c. 1906-60) - [Jonathan Clarke](#)

Experimental school constructions by Jean Prouvé. The benefit of closed prefabrication - [Adrian Leander Pöllinger](#)

Steel heritage: Olivetti's factories in Ivrea in the fifties and sixties - [Danilo Di Donato](#), [Renato Morganti](#), [Alessandra Tosone](#), [Matteo Abita](#)

TPI – the Italian popular theatre: an architectural, technological and building experiment of a space in motion - [Alessandra Como](#), [Luisa Smeragliuolo Perrotta](#), [Simona Talenti](#), [Annarita Teodosio](#)

The evolution of the cast node of the Pompidou Centre: from the 'friction collar' to the 'gerberette' - [Boris Hamzeian](#)

2. THEMATIC SESSION - 3 parallel sessions

MONDAY July 9
16h00

2a **Building maintenance in ancient times (up to the early modern period)**

RUBENS

Chaired by Philippe Bernardi, Charles Davoine, H el ene Dessales, Maxime L'H eritier

Maintenance of the parietal coverings in ancient Rome: confrontation between legal norms and archaeological evidence - [Pauline Ducret](#), [Mathilde Carrive](#)

Maintaining an atrium house during the principate in Ostia - [Gr egory Mainet](#)

Municipal management of wooden bridges in the fifteenth century: Pont de la Daurade in Toulouse and Pont Notre-Dame in Paris - [C ecile Sabathier](#), [Nicolas Moucheront](#)

Regular building maintenance and long-term conservation in ancient times - [Maxime L'H eritier](#), [Charles Davoine](#), [H el ene Dessales](#), [Philippe Bernardi](#)

2b **Modern 'comfort' in colonial/postcolonial settings beyond the 'centre/periphery' framework**

STEVIN

chaired by Johan Lagae, Jiat-Hwee Chang

Viet-cool: thermal comforts in Vietnam - [Andrew Cruse](#)

Cross-cultural thermal knowledge: the case of large-scale tobacco barns in Sumatra (Indonesia) - [Sascha Roesler](#)

"Detropicalizing comfort research: the climate and house design program in Australia (1945-47) - [Daniel Ryan](#)

2c **Early thin shells - players, impulses, and effects (1/2)**

AULA

Chaired by Roland May

The first concrete dome in Germany? A church building using modern techniques - [Jörg Rehm](#)
Hangars built of concrete reinforced in various ways, 1908-21: toward a majestic nave without ribbing - [Beatrice Lampariello](#)

Oldest surviving hangars with shallow domes (1918) - [Christina Czymay](#)

Thin concrete shells by Eugène Freyssinet - [Bernard Espion](#)

3. OPEN SESSION - 5 parallel sessions

TUESDAY July 10
9h00

3a **Medieval vaults**

RUBENS

Chaired by Santiago Huerta

Reverse engineering marvellous machines: the design of Late Gothic vaults from concept to stone planning and the prehistory of stereotomy - [David Wendland](#), [Marie José Ventas Sierra](#)

Two- and three-dimensional geometry in Tierceron vaults: a case study of Exeter cathedral - [Alexandrina C. Buchanan](#), [Nicholas J. Webb](#)

King's College Chapel: the geometry of the fan vault - [Jacques Heyman](#)

Knowledge transfer in the early medieval art of vaulting in Dalmatia - [Marina Simunic Bursic](#)

3b **Nervi and ferrocement**

AULA

Chaired by Ilaria Giannetti

Influences of the engineer Pier Luigi Nervi on the work of the architect Marcel Breuer - [Miguel Á. Calvo-Salve](#)

Pier Luigi Nervi and Fiat. The expansion of Officine Mirafiori in Turin - [Laura Greco](#)

Pier Luigi Nervi's idea of "verità delle strutture" - [Patricia Radelet-de Grave](#)

Education on the production chain: Lelé's transitory schools in Brazil - [Adalberto Vilela](#)

3c **Towers and big buildings**

MARIE THERESE

Chaired by Donald Friedman

Porto tower buildings in the 1960s: challenges to architects and engineers - [Rui Fernandes Póvoas](#), [Clara Pimenta do Vale](#)

Innovations in the structural systems in tall buildings in Bogota during the decade of the sixties - case study: Bavaria building - [Camilo Villate Matiz](#)

Interdisciplinary research on the heritage of housing complexes in France (1945-75) - [Raphaël Labrunye](#), [Gauthier Bolle](#), [Karim El Alami](#), [Ignacio Requena](#), [Daniel Siret](#)

Concrete capital: John McShain's Construction of Washington, DC (1930-70) - [Vyta Baselice](#)

3d Warehouses and factories

ALBERT I

Chaired by Sara Wermiel

Built to stock. Versatility of Hennebique's urban warehouses in Belgium (1892-1914) - [Ine Wouters](#), [Stephanie Van de Voorde](#), [Marianne De Fossé](#), [Inge Bertels](#)

At the intersection of foreign building know-how: Plovdiv in the early twentieth century - [Iva Stoyanova](#)

The construction of Ghent's textile industry warehouses - [Marianne De Fossé](#), [Inge Bertels](#), [Ine Wouters](#), [Linda Van Santvoort](#)

3e Vernacular architecture and earthen buildings

STEVIN

Chaired by Chang-Xue Shu

Earthen buildings in Ireland - [Alejandro Jiménez Rios](#), [Dermot O'Dwyer](#)

Nubia vernacular: the villages of Bigge - [Bernadeta Schäfer](#)

Earthen mortar walls in Cremona: the complexity and logic behind a construction technique - [Angelo Giuseppe Landi](#)

Adobe constructions in Yun-lin county, Taiwan - [Pierre Smars](#)

4. OPEN SESSION - 4 parallel sessions

TUESDAY July 10
13h30

4a Timber and iron structures (18th-20th centuries)

AULA

Chaired by James Campbell

Beyond Grubenmann: Swiss carpentry 1750–1850 - [Jasmin Schäfer](#), [Stefan M. Holzer](#)

Joining techniques in nineteenth- and early twentieth-century Belgian timber roofs - [Louis Vandenabeele](#), [Inge Bertels](#), [Ine Wouters](#)

What hides behind the plaster? Hollow-brick and iron vaults in Europe between the eighteenth and the twentieth century - [Paola Condoleo](#)

The roof of the Marble Palace in Saint-Petersburg: a structural iron ensemble from the 1770s - [Aleksandra Kosykh](#), [Werner Lorenz](#), [Konrad Frommelt](#)

Iron roof structures by Bosshard & Cie: case studies in Switzerland - [Aikaterina Maria Chalvatzi](#), [Stefan M. Holzer](#)

4b Policy and politics

STEVIN

Chaired by Christine Wall

Gustave Andreas Royers (1848-1923), from Antwerp city engineer to Belgian politician - [Inge Bertels](#)

Competing visions of community, commerce and construction in the first Ohio River railroad bridge - [David A. Simmons](#)

Documenting depression-era construction: the University of Virginia's PWA buildings - [Benjamin J. Hays](#)

Recent geopolitics of construction - origins and consequences - [Andrew Rabeneck](#)

4c **Vaulting during Renaissance and Baroque**

MARIE THERESE

Chaired by Paula Fuentes

Alonso de Vandelvira's approach to the geometrical design of templates for caissons in crossing trellis vaults - [María Aranda Alonso](#)

The vaulted system of the Basilica of S. Ambrogio in Milan: a cross-feature in the Basilica's life. Restorations and interpretations - [Chiara Stanga](#), [Chiara Spinelli](#)

Knowledge transfer in vaulting. The Assier church and Valencian stonecutting - [Pablo Navarro-Camallonga](#), [José Calvo-López](#), [Miguel Ángel Alonso-Rodríguez](#)

The vaulted roof of San Vittore in Milan: an unusual sixteenth-century construction - [Alberto Grimoldi](#)

4d **Modern architecture and construction**

RUBENS

Chaired by Rika Devos

The thirties summer holiday camps in the Abruzzo region: from design to building - [Alessandra Tosone](#), [Renato Morganti](#), [Alessandra Bellicoso](#)

Luigi Moretti and the program of the case albergo in Milan (1947-1950) - [Roberta Lucente](#), [Laura Greco](#)

Innovation of construction systems versus reproducibility of the architectural image. Multiple constructional processes in the 'Unité d'Habitation' (1945-67) - [Franz Graf](#)

The first Luanda's skyscraper: comfort through natural and artificial control methods - [Ana Tostões](#), [Margarida Quintã](#)

Exploring the visual material within the building process of the Villa Savoye - [Veronique Boone](#), [Bénédicte Gandini](#)

5. THEMATIC SESSION - 3 parallel sessions

TUESDAY July 10
16h00

5a **Experts and building assessments. An international comparison (thirteenth-twentieth century)**

RUBENS

Chaired by Robert Carvais, Valérie Nègre

Siena 1357. The failure of a great plan - [Klaus Tragbar](#)

The public architect's role as surveyor of the construction site in the nineteenth century: the example of Belgian provincial architects - [Jeroen Cornilly](#)

The engineer as expert: early structural forensic reports in the United States - [Donald Friedman](#)
Surveyors and building appraisals. Conceptualizing a comparative project (thirteenth—twentieth centuries) - [Robert Carvais](#)

5b **Historic precast concrete**

AULA

Chaired by Herdis A. Heinemann

Building breakwaters with precast concrete blocks (1834-67) - [Stefan M. Holzer](#)

Concrete matter: building the Bruges submarine pens (1917-18) - [Willem Bekers](#), [Ronald De Meyer](#)

Stone and concrete: a review of the coevolution of the surface finishes of two buildings materials - [Herdis A. Heinemann](#), [Wido J. Quist](#)

The NEMAVO Airey system: a wealth of options - [Lidwine G.K. Spoormans](#), [Hielkje Zijlstra](#), [Wido J. Quist](#)

Prefabricated elements and typification in communist Poland - [Piotr Marciniak](#)

5c **Transnational exchange in the construction worlds of nineteenth and twentieth century Asia: the diffusion of materials and processes in the Global South**

STEVIN

Chaired by Amit Srivastava, Peter Scriver

"*Elle pousse, la Capitale Champignon!*" Questioning skill in the Belgian Congo's building industry - [Robby Fivez](#)

Construction technology transfer in Shanghai in the nineteenth to twentieth centuries - [Jingxian Ye](#), [Corentin Fivet](#)

Cement and 'Shanghai plaster' in British Hong Kong and Penang (1920s-1950s) - [Chun Wai Charles Lai](#)

Learning from the 'other': early modern emulation and trans-imperial exchange of 'native' building technologies - [Pedro Guedes](#)

6. OPEN SESSION - 4 parallel sessions

THURSDAY July 12
9h00

6a **Gothic vaults and spires**

AULA

Chaired by Pierre Smars

Iron on top. The use of wrought iron armatures in the construction of late Gothic openwork spires - [Christian Kayser](#)

Abandonment of sexpartite vaults: construction difficulties and evolution - [Rocío Maira Vidal](#)

Late Gothic constructions in Mústair and Meran - [Manuel Maissen](#), [Martin Gantner](#), [Stefan M. Holzer](#)

Late Gothic system in the church of Saint-Séverin (Paris) - [Enrique Rabasa-Díaz](#)

6b Materials and forms

MARIE THERESE

Chaired by Stephen Buonopane

New experiences with reinforced tile for Eladio Dieste when building the Cristo Obrero Church - [Mónica Silva-Contreras](#)

Braided rope with vegetable fibers for the construction of the Inca bridge of Q'eswachaka (Peru) - [Eugenia Muscio](#), [Jesús Anaya Díaz](#)

Earthquake-resistant foundations systems in Italy in the first decade of the twentieth century - [Federica Scibilia](#) (presented by [Vincenzina La Spina](#))

Frederick Lanchester and the invention of the air-supported roof - [Will McLean](#)

6c Representation and official architecture

RUBENS

Chaired by Susan Galavan

The institutional organisation of Belgium's cellular prison building campaign (1830-WWI) - [Jozefien Feyaerts](#)

The Chinese teahouse at the 1873 Vienna world exposition - [Alexandra Harrer](#)

Catetinho: the first presidential house in Brasília, Brazil - [Marina M. Mennucci](#), [Pedro P. Palazzo](#)

Business-card buildings: corporate architecture and promotional strategies in buildings and projects for Eternit in Belgium (1955-75) - [Stephanie Van de Voorde](#), [Rika Devos](#)

6d Stone, gypsum and brick

STEVIN

Chaired by Joao Mascarenhas-Mateus

Study of traditional gypsum in Spain: methodology and initial results - [Vincenzina La Spina](#)

Fire brick in China: from mining to architecture - [Chang-Xue Shu](#), [Yi-Bing Fang](#)

Sturdy as stone, vibrant as ceramics: Italklinker and Modern Movement architecture in Italy - [Emilia Garda](#), [Marika Mangosio](#)

Nineteenth-century stone protection: the invention and early research on fluosilicates and their dispersion into Europe - [Timo G. Nijland](#), [Wido J. Quist](#)

7. OPEN SESSION - 4 parallel sessions

THURSDAY July 12
13h30

7a Concrete construction in 20th century

RUBENS

Chaired by Jos Tomlow

The mushroom column: origins, concepts and differences - [Andreas Thuy](#), [Mario Rinke](#)

Hidden modernity: reinforced concrete trusses in Brussels parish churches (1935-40) - [Romain Wibaut](#), [Thomas Coomans](#), [Ine Wouters](#)

Handmade' pre-cast concrete: the Italian experience between structural engineering and industrial design (1950-80) - [Ilaria Giannetti](#)

Onsite precast concrete: a critical approach to concrete in the faculty of engineering, Prince of Songkla University, Thailand - [Pinai Sirikiatikul](#)

The hyperbolic paraboloids of the Tor di Valle racetrack in Rome - [Stefania Mornati](#)

7b Regulations and specifications

STEVIN

Chaired by Heidi Deneweth

Contracting blunders and innovative regulations of US military construction 1861 to 1918 - [Jeffrey L. Beard](#)

From master builder to subcontractor: the Guastavino Company and the role of specifications - [Jessica Garcia Fritz](#)

Recommended minimum requirements for small dwelling construction'. A forgotten ancestor of the modern USA building code - [Nigel P. Isaacs](#)

Specifications and the standardisation of Ireland's local harbours - [Elizabeth Shotton](#)

Victor Horta and building site photography - [Dirk Van de Vijver](#)

7c Bridges 1 - constructional aspects

AULA

Chaired by Dario Gasparini

Innovative or derivative? The design of the bridge structures on the world's first intercity railway between Liverpool and Manchester - [Mike Chrimes](#)

Iron bridges for Rome, the capital of the Kingdom of Italy - [Renato Morganti](#), [Alessandra Tosone](#), [Matteo Abita](#), [Danilo Di Donato](#)

European iron bridges in Puerto Rico: the example of the Guamaní bridge - [Jorge Ortiz-Colom](#)

The influence of Howe's structural typology on Galician wooden bridges - [Chiara Tardini](#)

Fabrication and erection of large steel bridges in the twentieth century: from structural analysis to optimization of fabrication - [Eberhard Pelke](#), [Karl-Eugen Kurrer](#)

7d Building services

MARIE THERESE

Chaired by Leen Lauriks

Glasgow city chambers: the construction and building services history of a major municipal building from the Victorian period - [Nina C. Baker](#)

Built-in, exposed or concealed comfort services. Attempts to industrialise collective housing after 1945 - [Giulia Marino](#)

A masterpiece in the use of light, Johnson Wax headquarters. Racine, Wisconsin, USA - [Giulio Sampaoli](#)

Richard Neutra and the history of the vertical louvered solar control system - [Clifton Fordham](#)

Sheltered. Parked. Respirated. Three underground spaces by Gottfried Schindler - [Andreas Putz](#)

8. THEMATIC SESSION - 2 parallel sessions

THURSDAY July 12
16h00

8a **Architects and bureaucrats: centralised governments and the administrative pre-conditions of building before 1750**

RUBENS

Chaired by Merlijn Hurx

The impact of bureaucratic procedures on architectural planning in the Late Middle Ages in the Low Countries - [Merlijn Hurx](#)

Building for the Crown: contracts and administration under the Spanish monarchy in the sixteenth and seventeenth centuries, the Monastery of El Escorial - [Pilar Chías](#), [Tomás Abad](#)

Bureaucratization and dynamization of construction processes in the electorate of Bavaria - [Andreas Gommel](#)

The director, the first architect of the academy and the professor: the roles of these figures in the academic teaching of eighteenth-century France - [Hélène Rousteau-Chambon](#)

Architects and institutions in the construction of the new city of Cervia - [Lacopo Benincampi](#)

8b **Early thin shells - players, impulses, and effects (2/2)**

AULA

Chaired by Roland May

The diffusion of the Zeiss-Dywidag system in Italy: two cases in Rome - [Martina Russo](#), [Edoardo Currà](#)

A great achievement of the Soviet construction technology in Siberia: the reinforced concrete cupola of the Novosibirsk Theatre - [Ivan Nevzgodin](#)

Wooden shells in pre-war Soviet Union (1925-39) - [Olga Arkhipkina](#)

Laborious and difficult': the evolution of Pier Luigi Nervi's hangar roofs (1935-41) - [Thomas Leslie](#)

Contemporary light vaults in Colombia. The origin of a modern tradition - [Julian Garcia](#), [Fernando Magdalena](#), [Juan M. Medina](#)

9. OPEN SESSION - 5 parallel sessions

FRIDAY July 13
9h00

9a **Contractors and architects (19th century)**

AULA

Chaired by Hermann Schlimme

General contractors and architects in the late nineteenth-century America - [Brian Bowen](#)

Emergence of heavy contracting in the United States in the nineteenth century - [Sara E. Wermiel](#)

The work and professional status of John (1787-1852) and Benjamin Green (1813-58), architects and engineers - [Paul W. R. Bell](#)

Spatial management of contractors. An analysis of the industrial sites of the Louis De Waele enterprise in Brussels (1867-1988) - [Matthijs Degraeve](#), [Jelena Dobbels](#), [Inge Bertels](#), [Heidi Deneweth](#), [Stephanie Van de Voorde](#)

9b **Process of building (16th-18th century)**

RUBENS

Chaired by Christoph Rauhut

A dispute on Venetian techniques of foundation: Vincenzo Scamozzi in San Nicolò da Tolentino (1591-95) - [Marco Capponi](#)

The foundations of the Nieuwe Kerk Tower in Amsterdam (1645-1652) - [Gabri Van Tussenbroek](#)

The Church of Peace in Jawor: a few remarks on the organization of its construction in the years 1654-56 in the light of written and iconographic sources - [Ulrich Schaaf](#)

Accouplement: vicissitudes of an architectural motif in classical France - [Pedro P. Palazzo](#)

9c **Trades and contracts**

STEVIN

Chaired by Robert Carvais

Building contracts in the city of Girona from the fourteenth to the eighteenth century - [Miquel Àngel Chamorro](#), [Jordi Soler](#), [Ramon Ripoll](#), [Elena Vilagran](#)

Renovating early modern Leiden: new perspectives on the building trades - [Heidi Deneweth](#)

German stonemasons and fort architecture of the Texas frontier - [Liane Hancock](#)

9d **Forts and castles**

ALBERT I

Chaired by Thomas Coomans

Sasanian construction technology in the Maiden Tower Complex as evidence of Late Antiquity building activities in Baku (Azerbaijan) - [Marina Döring-Williams](#), [Luise Albrecht](#)

Geometry and proportions of the medieval castles of Latvia - [Arturs Lapins](#)

Evolutionary traces in European nail-making tools - [Chris How](#)

9e **Modernity and locality**

MARIE THERESE

Chaired by Philippe Sosnowska

Modernity and locality in the use of brick in Spanish architecture (1870s-1930s) - [Ryohei Kumagai](#), [Yoshihiko Ito](#), [Fuuko Kimura](#)

From pickaxes to steam saws: the construction of the row house in Dublin (1730-1888) - [Susan Galavan](#)

Dutch natural stone: interpretation of a vernacular building material in modern architecture - [Wido J. Quist](#)

10a Ancient world

STEVIN

Chaired by Krista De Jonge

New typology for Old & Middle Kingdom stone tools: studies in the Hatnub quarries in Egypt - [Olivier Lavigne](#)

Schematic reconstruction of a type of Roman scaffolding used for the Basilica of Maxentius - [Luise Albrecht](#), [Marina Döring-Williams](#)

The secret of zoomorphic impostos: a new reading of the Achaemenids' roofing system - [Mahdi Motamedmanesh](#)

Early Greek stone construction and the invention of the crane - [Alessandro Pierattini](#)

10b Bridges 2: structural aspects

MARIE THERESE

Chaired by Andreas Kahlow

Navier's 1823 Mémoire: analyses and observations on displacements and stiffness of suspension bridges - [Dario A. Gasparini](#), [Stephen G. Buonopane](#)

John A. Roebling's Allegheny Aqueduct and Smithfield Street Bridge: nineteenth-century innovation in multi-span suspension bridges - [Stephen G. Buonopane](#), [Dario A. Gasparini](#)

The Boyne Viaduct: early indeterminate lattice girder analysis and design - [Dermot O'Dwyer](#), [Ronald Cox](#)

Origins of the modern cable-stayed bridge: the Dischinger story - [Roland May](#)

10c Contractors (20th century)

AULA

Chaired by Brian Bowen

A business-historical analysis of Entreprises générales Henri Ruttiens (1878-2000) - [Jelena Dobbels](#), [Inge Bertels](#), [Bernard Espion](#), [Ine Wouters](#)

History of the Italian contractors of large reinforced concrete structures in the twentieth century - [Carolina Di Pietro](#)

Building in (times of) war. Blaton's construction activities in occupied Belgium - [Rika Devos](#), [Bernard Espion](#)

William Arrol and Peter Lind: demolition, construction and workmanship on London's Waterloo Bridges (1934-46) - [Christine Wall](#)

Chaired by Mario Rinke

François Coignet (1814-88) and the industrial development of the first modern concretes in France - [Gilbert Richaud](#)

The Portland cement industry and reinforced concrete in Portugal (1860–1945) - [Joao Mascarenhas-Mateus](#), [Caio Rodrigues de Castro](#)

'Theory' and systematic testings – Emil Mörsch, Carl Bach and the culture of experimentation into reinforced concrete construction at the turn of the twentieth century - [Christoph Rauhut](#), [Torsten Meyer](#)

From invention to production: the introduction of prestressed concrete - [Jørgen Burchardt](#)

Reinforced concrete in Italy through the work of two generations of engineers: Mario and Giorgio Baroni - [Edoardo Currà](#), [Martina Russo](#)

Guided tours

On July 11 guided tours are organised in Brussels, Antwerp, Bruges and Liège. All tours will depart from the congress venue. Below you can find an overview of the hour of departure for each of the tours as well as the name of the responsible 6ICCH-colleague that will welcome you in the morning and guide you during the day.

For the full day tours lunch packs are provided in the morning at the congress venue. Participants of the tours to Antwerp and Bruges will travel in group by train. Transport to Liège is organised by bus. For some of the Brussels' tours train and metro transport is included as well.

Please wear walking shoes as many tours include walking and climbing.

<i>Tour</i>	<i>Contact person</i>	<i>Departure place</i>	<i>Time</i>
<i>Brussels tours</i>			
<i>Concrete tour</i>	Stephanie Van de Voorde	Academy Palace	9h00
<i>Contractors tour</i>	Rika Devos	Academy Palace	9h00
<i>Horta tour</i>	Linsy Raaffels	Academy Palace	9h00
<i>Iron tour</i>	Ine Wouters	Academy Palace	9h30
<i>Timber tour</i>	Louis Vandenabeele	Academy Palace	9h30
<i>Royal tour</i>	Marianne De Fossé	Academy Palace	13h00
<i>Outside Brussels</i>			
<i>Bruges' craftsmanship</i>	Heidi Deneweth	Academy Palace	8h00
<i>Antwerp towers</i>	Inge Bertels	Academy Palace	8h30
<i>Liegeois engineering</i>	Bernard Espion	Academy Palace	8h30