

FOOT BRIDGE 2017 Berlin

6—8.9.2017 TU-BERLIN
PROGRAMME

WEDNESDAY 6.9.2017

ROOM OVERVIEW

3rd Floor

→ Room D



1st Floor

→ Room A + B

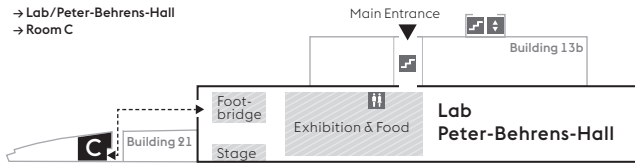
→ Registration Desk



Ground Floor

→ Lab/Peter-Behrens-Hall

→ Room C



THEMES OF THE CONFERENCE

Opening Session
Keynote Lectures
Closing Session

Footbridges for Berlin

Venice, Paris, or London—the images of these cities are defined considerably by their many pedestrian bridges. Berlin also offers a wide and still unexploited potential for this exciting building task. These bridges contribute significantly to the quality of life of city residents and furthermore their planning and construction require the close cooperation of construction engineers, architects, landscape and lighting planners. Footbridges, therefore, represent an important and interdisciplinary contribution to building culture. As part of the international conference "Footbridge 2017", experts from around the world developed bridge ideas for six typical locations in the German capital, under the title "Tell a Story". The separate book "The World's Footbridges for Berlin" published by Jovis provides an illuminating insight into the current state of footbridge design.

Cultivate Debate

Tell your colleagues stories about a design of yours or the concepts, ideas, challenges behind a new material, an algorithm or a construction sequence you have used. Explain from whom or what you have learned or enter into a discourse about your own work or that of others. Structural and civil engineers in particular are not experienced in discussing their work, in participating in critique without offending, in consciously entering debate on their design ideas, in defending them or arguing the case of others. Inspire your colleagues by telling your story.

Dynamics and Innovation

In the late 1990s some well-known pedestrian bridges suffered from excessive excitations and no immediate solutions were available. Research on pedestrian-induced vibrations rapidly became a hot topic in the engineering community and a main theme for footbridge 2002 in Paris. Even now it is a subject of great importance and we are looking forward to interesting research papers on dynamics issues such as identification of vibrations and dealing with them. Furthermore, many contributions on innovations in the field of footbridges were submitted to the conference.

PROGRAMME

	Lab/Peter-Behrens-Hall	Room A	Room B	Room C	Room D
8:00	Registration opens				
9:00—10:30		Opening Session M. Schlaich Welcome Address Reiner Nagel <i>(President of Bundesstiftung Baukultur)</i> Tell a Story Robert Schwentke <i>(Movie Director and writer, Hollywood: R.E.D., Flightplan, Hauptmann)</i> From shells to bridges P. Block			
10:30—11:00	Coffee break				
11:00—12:30	Footbridges for Berlin Chairs: J. Romo, J. Sobrino Moabit	Positions Chair: Y. Pagès Sublimation (Footbridge transition) G. Collell i Mundet Bridges at night, How to light a bridge? A. Keil, C. Sander Design at the edge—bridge parapets C. Ernst, D. Jensen Winning or not— in competition, the journey is the reward V. Angelmaier The modern engineer's janus face: Delivering reliability and mystification M. Rinke Walking on a spiders web—Sofie's Bridge P. Jensen, S. Trojaborg, J. Henriksen	Case Studies II Chair: J. Anderson Design of 10 footbridges in new highway "express pass of Cuernavaca", Mexico A. Patron, C. Poon, A. Melo, E. Morales, E. Reyes Dafne Schippersbrug: Design and construction D. Karagiannis, R. Vernooij, D. Tuinstra The bridge of the dialogue in Chiavenna (Italy) E. Siviero, V. Martini One pedestrian suspension bridge with spatial unilateral hangers and twin curved decks in Shanghai Y. Fang, X. Pang, B. Hua Design, construction and health monitoring for a large span pedestrian bridge Q. Zhang, H. Chen, X. Luo Creative design resource: Revelation on footbridge of Jörg Schlaich L. Ren, A. Chen	Response and Structural Behavior Chair: P. Van den Broeck Footbridges. Dynamic design—selected problems K. Zoltowski, M. Binczyk, P. Kalitowski Wind tunnel tests and full-scale measurements on a cable-stayed footbridge G. Bartoli, M. Gioffré, C. Mannini, A. Marra, T. Massai, C. Pepi, L. Pigolotti Vibration analysis of a long-span bridge with a Suspended Pavement System (SPS) caused by the vehicle excitation C. Cui, R. Ma, D. Wang, A. Chen Wind and pedestrian vibration assessment on the new swan river pedestrian bridge N. Cosentino, M. Majowiecki, S. Pinardi Effect of pretension on the dynamic response of footbridges R. Brasil, V. Della Monica, H. Braglia Pacheco Numerical analysis of vibrations in suspension footbridge under pedestrian traffic S. Pereira, G. Doz	Movables Chair: A. Kasuga Design of movable bridges—selected examples A. Kok, N. Degenkamp The rollout stress ribbon bridge B. Manum, A. Rønquist, N. Labonnote, A. Aalberg A novel concept for a cable-stayed movable footbridge T. Zhang, K. Kawaguchi, M. Wu Turning heads in Gdansk C. Bednarski Architectural concept of a cable-stayed, moveable footbridge P. Hawrysków, W. Zielichowski-Haber, A. Rutecka-Blimke, A. Zachariasz
12:30—13:45	Lunch break				

	Lab/Peter-Behrens-Hall	Room A	Room B	Room C	Room D
13:45—15:15	Footbridges for Berlin Chairs: J. Conzett, M. Knight Brommy 1	Case Studies I Chair: J. Brownjohn The future transportation node Køge North Station J. Henriksen, S. Trojaborg, P. Jensen Shared platform footbridges in rural environments: Footbridge over Miño River in Os Peares (Ourense) J. Corbal, A. Meijide, A. Antón Next connects: bridges as socio-cultural practices M. Schreinemachers, B. Reuser, M. Schenk Moody pedestrian bridge University of Texas in Austin, TX, USA M. Rosales Jubilee Bridge in the heart of Singapore P. Burnton, S. Lin Ming, L. Chye Wong Elizabeth Quay Pedestrian Bridge, Perth—the jewel of the quay P. Burnton, N. Birmingham, S. Buxton	Case Studies IV Chair: L. Ney The Golden Bridge—a footbridge over the Sarawak River K. Chew, K. Choong, L. Lichok La Passerelle du Marche—Maisons-Laffitte P. Chassagne, Y. Pages, O. Canat The observation point “Wolkenhain”—bridge as well as tower: A new landmark in Berlin T. Klähne, G. Kubieniec Swan River pedestrian bridge in Perth—structural design story from the concept to the construction M. Majowiecki, S. Pinardi, G. Berti Natural and landscape inspirations in designing of modern footbridges M. Furtak A polyester-rope suspended footbridge in Ait Bayoud, Morocco: Structural analysis and key details E. Segal, R. Woodward, S. Adriaenssens, T. Zoli	Vibration Performance Chair: C. Sahnaci “Tripod” footbridge in Terni (Italy): On site dynamic characterization and numerical investigation of lock-in O. Manfroni, R. Benedetti Experimental verification of the dynamic performance of a footbridge under high pedestrian densities K. Van Nimmen, P. Van den Broeck Evaluation of the experimental and analytical dynamic response of pedestrian bridges M. Mendoza, R. Gomez, G. Arroyo, J. Escobar, R. Flores Dynamic response of girder footbridges with supplemental damping N. Garcia-Troncoso, A. Ruiz-Teran, P. Stafford Design, construction and dynamic analysis of a laboratory-scale FRP composite footbridge P. Archbold, B. Mullarney Vibration performance of two FRP Footbridge Structures in the United Kingdom S. Živanović, X. Wei, J. Russell, J. Mottram	Scissors Chair: V. Schmid A rippled footbridge accessible for all E. Bouleau, G. Guscetti Scissoring origami inspired deployable bridge for a disaster K. Adachi, I. Ario, Y. Chikahiro, S. Matsumoto Fundamental study on dynamic property of deployable emergency bridge using scissors mechanism Y. Chikahiro, I. Ario, K. Adachi, S. Shimizu, P. Pawlowski, C. Graczykowski, J. Holnicki-Szulc Origami inspired deployable & movable bridge for disaster relief I. Ario, Y. Hama, Y. Chikahiro, K. Adachi, A. Watson
15:15—15:45	Coffee break				
15:45—17:15	Footbridges for Berlin Chairs: J. Conzett, M. Knight Brommy 2	Case Studies III Chair: J. Sobrino An international arrival: The collaborative design of an iconic airport footbridge M. Sarkisian, M. Schlaich, N. Mathias, M. Stein, P. Draper, J. McCann Beer Sheva Footbridge, Rokach-Ashkenazi Engineers I. Rokach, D. Levin Weiterleiten Bridge J. Strydom, J. Liebenberg Zabalzana Footbridge over Madrid—Irún railroad in Vitoria J. Romo, F. Prieto, L. Capdevila St. Philips Pedestrian and Cyclist Bridge in Bristol. A holistic aesthetic, structural and functional design H. Beade-Pereda, J. McElhinney, R. Romo-Torres, B. Barbulescu More than a footbridge—the new Baakenhafen crossing complexity of developing a multi-functional structure in an urban context T. Helbig, T. Müller, M. Oppe, R. Schieber	Education and Guidelines Chair: V. Schmid The School of Bridge Design in Ecampus, Como, Italy E. Siviero, A. Zanchettin The book “Footbridges—Small is Beautiful” G. Humar, E. Siviero Teaching architects to design pedestrian bridges C. Herr Education of future builders through footbridge design to construction projects H. Capart, C. Chou, S. Hsieh, P. Kuo, W. Yu, L. Lu, T. Hsu, M. Tomita, E. Siviero, A. Zanchettin Dutch design guide for bicycle and pedestrian bridge design A. Kok, N. Degenkamp Footbridge design as an act of inexperience I. Filkovic	Load Models for Pedestrians Chair: S. Narasimhan Investigation of the human-structure interaction on a full scale experimental footbridge A. Firus, J. Schneider, A. Seyfarth, C. Schumacher Application of the tuned mass damper concept to the modelling of pedestrian-structure interaction E. Caetano, C. Gaspar, J. Santos Silva, C. Moutinho Partial squats—the dynamic load of the footbridges M. Paňtak A full probabilistic model for loads induced by walking C. Sahnaci, M. Kasperski Vertical vibration of complex and slender footbridges due to stochastic crowd-induced excitation J. Zhong, X. Xie, H. Zhang Vertical accelerations due to joggers of a short span footbridge F. Beers	
17:30	Footbridge Awards (H. Russell) and Welcome Reception				

8:00	Registration opens				
	Lab/Peter-Behrens-Hall	Room A	Room B	Room C	Room D
9:00—10:30		Keynote Lectures Chair: A. Goldack Footbridge dynamic performance assessment using inertial measurement units J. Brownjohn Engineering Adventures J. Knippers Footbridges with prestressed concrete decks J. Strasky			
10:30—11:00	Coffee break				
11:00—12:30	Footbridges for Berlin Chairs: L. Ney, I. Firth Europacity	World Bridges Chair: C. Ernst Bridging Mzamba—perspectives on trans-disciplinary and cross-cultural implementation process M. Wagner Changing paradigm of Indian footbridges: From connectors to destinations R. Battiboi Long-span pedestrian bridges in the USA—a futuristic approach M. Sarkisian, E. Long, N. Mathias, J. Gordon, A. Beghini, R. Garai, A. Krebs Six languages and cultures for the design & construction of a new cable-stayed pedestrian bridge at Algiers Bay S. Mohr, D. Cobo del Arco, I. Raventós Dudous He Kōrero Takiwā, He Takiwā Kōrero / Stories within spaces, spaces defined by stories: Footbridge design concept, Christchurch, NZ A. Sarkis, G. Granello, R. Liu, B. McHaffie, C. Capellaro, E. Wallbanks, D. Patterson, A. Palmero, A. Kreisler, P. Millar Designing for the realities of a day in the life of a good looking but hardy footbridge J. Anderson, E. Kruger, M. Lethale	Case Studies VI Chair: C. Bednarski OO2804—A footbridge over the Watersportbaan in Ghent P. D'Haeseleer, K. Boghaert Difficulties encountered during the construction of Qingchun irregular-shaped footbridge M. Wang, J. Wang, H. Xiang Management of constraints to create meaningful places: New footbridge over the river Mogent in Montronès Del Vallès X. Font Diatomea Footbridge—integrating modern infrastructure into a national park in Chile F. Schanak, J. Reyes, J. Osman Letelier Adventure art construction M. Kadel Example of an urban footbridge—a safe way home J. Biliszczuk, J. Onysyk, M. Sutkowski, R. Toczkiwicz	Serviceability I Chair: E. Caetano Perceptibility of vibrations by pedestrians B. Czwikla, M. Kasperski Serviceability response of a benchmark cable-stayed footbridge: comparison of available methods C. Ramos-Moreno, A. Ruiz-Teran, P. Stafford Key findings from serviceability studies on aluminum footbridges P. Dey, S. Narasimhan, S. Walbridge Long-term vibration serviceability assessment of a steel-plated stress-ribbon footbridge J. Soria, I. Díaz, J. García-Palacios, A. Lorenzana The effect of runners on footbridges—a case study E. Zöll, J. Garmendia Purroy, A. Andersson, M. Ülker-Kaustell Study of the group effects on the vibration serviceability of slender footbridges M. Setareh	Materials I Chair: J. Romo Extremely light and slender precast pedestrian-bridge made out of carbon-concrete S. Rempel, C. Kulas, J. Hegger Pre-design of a modular footbridge system with pre-tensioned CFRP reinforcement S. Perse, N. Will, J. Hegger The saw-tooth connector: An effective joint-element for slender concrete decks A. Reimer, V. Schmid, H. Al-Kroom Cable-stayed footbridge with UHPC Deck in Celakovice M. Kalny, J. Komanec, V. Kvasnicka Demonstration footbridges made of ultra-high-performance concrete and FRP composites W. Zatar, H. Nguyen, H. Mutsuyoshi An equivalent homogeneous model for FRP sandwich bridge deck panels with sinusoidal cores B. Mandal, A. Chakrabarti
12:30—13:45	Lunch break				
13:45—15:15	Footbridges for Berlin Chairs: M. Rosales, J. Strasky Waisen I	Case Studies V Chair: J. Anderson Design of Raos Footbridge over the A-67 motorway, Santander (Spain) G. Capellán, M. Sacristán, A. Godoy, M. García, S. Urdinguio, J. González Tripod Footbridge, Terni (Italy) The bridge as a public realm driver of urban regeneration R. Benedetti, C. Sorrentino, O. Manfroni Bicententio Sinus Footbridge in San Sebastián M. Guisasola Falmer High Level Walkway A. Oliver A walkable sculptural structure — stress ribbon bridge at Tirschenreuth, Germany W. Strobl Combined cable-stayed stress ribbon bridges G. Goberna, M. Goberna	Historic Context & Reconstruction I Chair: E. Siviero Footbridge in the old centre of Ljubljana or how thin can bridge be V. Markelj, P. Gabrijelčič Harlech Castle Footbridge—a structure that connects the past with the present K. Andradi, B. Duguid Structures on pedestrian and bicycle paths in historic parts of cities J. Biliszczuk, J. Onysyk, H. Onysyk Crossing Hamburg's historic Schleusen Graben with a swing—landscape as the governing factor S. Quappen, D. Junker, J. Lüdders, G. Zehetmaier Schlosssteg 2.0 R. Brandstötter Dejima Footbridge, making a connection in the 400 years' history. A study on cultural meaning of building contemporary bridge R. Watanabe, E. Bodarwé, L. Ney	Serviceability II Chair: K. Goorts Design and vibration serviceability evaluation of pedestrian space arch bridge P. Cheolung, K. Dabeom, C. Daehun, K. Dongseok, P. Jaeyong Fuzzy probabilistic method of footbridge vibration serviceability assessment under pedestrian loads L. Ke, R. Ma, A. Chen Assessment of vibration serviceability of a large-span cable-supported footbridge in the scenic area D. Wang, L. Ke, R. Ma Dynamic considerations in case of footbridges with elevators M. Vicente, A. Lichtenfels, D. González Experimental investigation of the vibration susceptibility of footbridges for subcritical vibration modes C. Meinhardt, C. Sahnaci	Materials II Chair: K. Zoltowski Sustainable pedestrian bridge using advanced materials (Superbam) L. Pellegrini, R. Ribó, J. Jordan, J. Sobrino Fully bio-based-composite footbridge: strain monitoring during use phase R. Blok, P. Teuffel The KuBAaL Footbridges in Bocholt/Germany—the client's wish to use low maintenance materials K. Baumann, M. Gabler, E. The Fort York Pedestrian Bridges in Toronto. The two first duplex stainless steel bridges in North America J. Sobrino, J. Jordan, S. Carratala, D. Sisi

	Lab/Peter-Behrens-Hall	Room A	Room B	Room C	Room D
15:15–15:45	Coffee break				
15:45–17:15	Footbridges for Berlin Chairs: M. Rosales, J. Strasky Waisen 2	Case Studies VII Chair: C. Meinhardt Passerelle de la Paix, Lyon A story about the effort to appear effortless A. Keil, S. Linden, M. Zimmermann Passerelle Du Millénaire, Paris Y. Pagès, M. Ferrari, M. Cassagnes La Belle Liégeoise— the new footbridge in Liège V. Servais, F. Gens Ailsa Wharf Footbridge: Creativity through collaboration C. Smith, B. Curry Mangere Arch Footbridge, Auckland, New Zealand—Design of a 60 m tied arch, harbour crossing J. McNeil, A. Reeves Crossing the Viamala Gorge J. Conzett	Historic Context & Reconstruction II Chair: S. Narasimhan History of the reconstruction and modernization of the Bolko Island Pedestrian Bridge in Opole J. Rabięga, S. Bolanowski, P. Watroba Restoration of the Iconic Shaw Bridge I. Nitschke, F. Griggs Jr. Restoration of the Bridges of Ouro Preto, Minas Gerais—MG, Brazil B. Oliveira The Refurbishment of the Llangollen Chainbridge A. Marginson, L. Matthews Innovation in providing a solution to river scour J. Hogger	Materials III Chair: K. Zoltowski Solid Timber Bridge constructions— Design by material F. Miebach, D. Niewerth Design of a stress ribbon glulam foot- bridge across a steep forest torrent P. Hsieh, Y. Liu, Y. Tung, C. Chuang, P. Chen, L. Cheng, C. Chien How to make the largest footbridge over a motorway in Spain ... (in Timber) J. Vivas, J. Santos Easily constructable bamboo footbridges for rural areas T. Paraskeva, E. Dimitrakopoulos, G. Grigoropoulos	
17:45	Departure from venue for Boat Cruise to Dinner location (included in cost for Conference Dinner)				
20:00	Conference Dinner (extra booking) → The Conference Dinner will take place at Spreespeicher, Stralauer Allee 2, 10245 Berlin				



Footbridge 2017 Awards & Welcome Reception

Bridge design & engineering and the organisers of the Footbridge 2017 conference invite all delegates to join them for this informal networking event.

The Footbridge 2017 Awards will be presented during the evening so you will have a chance to meet the prizewinners and shortlisted teams and find out more about the winning projects. It will also be a good opportunity to meet fellow delegates and make new contacts in a relaxed setting.

Drinks and light refreshments will be served during the event.

8:00	Registration opens	
9:00–10:30	Lab/Peter-Behrens-Hall	Room A Keynote Lectures Chair: A. Goldack Die Ungebauten—The Unbuilt: Bordeaux, Ile Seguin, Saint Denis, Lyon Confluence D. Feichtinger Taste (a world of difference) K. Brownlie Infrastructure to create value M. Mimram
10:30–11:00	Coffee break	

	Lab/Peter-Behrens-Hall	Room A	Room B	Room C
11:00—12:30	Footbridges for Berlin Chairs: C. Ernst, E. Siviero Gleisdreieck	Future Chair: J. Biliszczuk Playing structural efficiency with architects R. Bastos, A. Fonseca, A. da Fonseca BIM and the art of motorcycle maintenance M. Knight Paper and pencil in the age of BIM. Design and construction of The Butarque Footbridge P. Tanner, J. Bellod, D. Sanz Rethinking cities S. Trojaborg, P. Jensen, J. Henriksen The future of the footbridge engineer in the purpose economy E. Thie Difficult roots and happy ends—how to master the design process B. Reyher	Modelling, Design & Construction Chair: N. Janberg Intelligent fabrication—digital bridges M. Tam, L. Bergis, D. Naicu, K. de Rycke, A. Orlinski, E. Jankowska Bicycle and pedestrian bridge Sittard-Geleen R. Torsing, R. Kieft Parametric design for footbridge: A case study L. Ren, H. Hou, X. Ruan Towards a fully digital modelling of steel joints at ULS L. Tosini, M. Arquier, X. Cespedes Why we will all be looking for a new job soon, true story based on study case of Orkdal Footbridge M. Luczkowski, S. Dyvik, J. Mork, N. Rønquist	Vibration Control & Monitoring I Chair: P. Van den Broeck Economic approach to damping trail-style footbridges S. Valdivinos, J. Rice New real-time controlled semi-active tuned mass damper for human, vortex and wind excitations F. Weber, H. Distl, S. Spensberger, O. Benicke, P. Huber, C. Braun Vibration control of footbridges under pedestrian loading using tuned mass damper systems with eddy current damper technology D. Saige, J. Engelhardt, S. Katz Performance of MTMD Systems based on realistic load contributions due to walking C. Sahnaci, C. Meinhardt, T. Krampe Towards deployable, autonomous, vibration control systems for light-weight footbridges K. Goorts, S. Narasimhan Model-based active vibration control for next generation bridges using reduced finite element models R. Jirasek, T. Schauer, A. Bleicher
12:30—13:30	Lunch break			
13:30—15:00	Footbridges for Berlin Chairs: C. Bednarski, L. Ney Spandau	Case Studies VIII Chair: J. Biliszczuk A park with bridges, “Murgauenpark” Frauenfeld, Switzerland J. Conzett The John v. Tunney Bridge: A new courtyard connection for the Hammer museum L. Walgenwitz, G. Nordenson, K. Bensuka Markarfljot Footbridge—a slender long span suspension bridge in windy surroundings K. Oskarsson, M. Arason, S. Christer, E. Ingolfsson A conceptual approach to design of funicular spatial arches in footbridges J. Jorquera-Lucerga Kai Tak landscaped deck-concept design L. Wojnarski, N. Hussain, M. To Footbridge Flugfeld Böblingen Sindelfingen—client and designer in cooperation A. Keil, T. Waldraff	Cables and Testing Chair: E. Caetano State of the art new products and methods for cable bridges small and big I. Siotor, T. Hermeking, C. Schloegl Advanced corrosion protection of structural tension members B. Allaert, F. Rentmeister Dubai Canal Footbridges: An engineering reply to a stunning architectural challenge S. Geyer, D. Lombardini, P. Ferrante Modelling construction of footbridges with cables J. Lozano-Galant, J. Turmo Testing major footbridges in Italy A. Totaro, E. Siviero Footbridge load tests in Poland: History, regulations, examples, results D. Borek, Ł. Karkut, J. Katuża, M. Wazowski	Vibration Control & Monitoring II Chair: P. Dey Control of human-induced vibration of footbridge using tuned mass dampers designed by LQR algorithm Z. Liu, H. Huang Implementation of a dynamic monitoring system for a butterfly arch footbridge D. Tang, W. Hu, J. Teng Structural system identification of pedestrian bridges by observability method J. Lei, J. Lozano-Galant, M. Nogal, D. Xu, J. Turmo Time-frequency-based analysis of pedestrian induced vibration using a two-step clustering approach A. Goldack, A. Jansen, S. Narasimhan Computing serviceability predictors for an in-service footbridge I. Díaz, J. García-Palacios, A. García-Cruz, J. Soria
15:00—15:30	Coffee break			
15:30—16:30	Closing Session M. Schlaich, L. Ney, J. Romo The Floating Piers Wolfgang Volz <i>(“The Eye of Christo and Jeanne-Claude”)</i>			
16:30—16:45	Young Authors’ Award G. Morgenthal			
16:45—17:00	Closing Ceremony			