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Page 1

www.bridgeconference2006.com

7TH INTERNATIONAL

AUGUST 23-25, 2006

CONFERENCE ON

Le Centre Sheraton Montréal Hotel

SHORT & MEDIUM SPAN

Montréal, Québec, Canada

BRIDGES 2006

MAIN SPONSOR

INVITATION AND

PRELIMINARY PROGRAM

ORGANIZED BY

page 1

Page 2

CONFERENCE PARTNERS

PLATINUM

INVITATION AND

PRELIMINARY PROGRAM

Since 1982 the Short & Medium Span Bridges Conference has been held every four years in Canada. The purpose has been to provide a worldwide state-of-the-art forum on short and medium span bridges. Engineers, practitioners and researchers from around the world will find at the Montreal conference a unique opportunity to gather and discuss examples of current and future practice and research that will cover highway and railway bridges.

DATE AND PLACE

The Conference will be held in August 23-25, 2006, at Le Centre Sheraton, Montréal, Canada.

Port is also the starting point for trips along the turbulent Lachine Rapids, at the western end of the island!

Pulsate to the rhythm of the city

Downtownaboundswithdepartment stores, boutiques and cinemas, not to mention major museums, such as the Montréal Museum of FineArts,the Musée d'art contemporain,the McCord Museum of Canadian History and the Canadian Centre for Architecture.

Objective: Recreation!

Île Notre-Dame and Île Sainte-Hélène are synonymous with vacationing fun. At Parc Jean-

Québec's largest amusement park, La Ronde, and at the beach. At the Biosphère, in

Drapeau, you'll have a ball at

the former U.S. pavilion from

Expo 67, you'll discover the secrets of water, while at the Stewart Museum, located inside an authentic fort, you'll learn about the history of the New World. In the east end of the city, in the Hochelaga-Maisonneuve neighbourhood, you will find irresistible attractions, such as the Olympic Park, host to the 1976 Olympic Games, which boasts the tallest inclined tower place that is home to four ecosystems. Nearby, the Montréal Botanical Garden, one of the world's largest, introduces you to a host of horticultural universes, including a Chinese garden and a Japanese garden, and at the Insectarium you can observe up close insects from around the world!

Montréal the metropolis has everything a big city can offer. But Montréal is also one-of-a-kind, a multicultural city that blends its French accent with that of over 80 other ethnic communities and charms visitors with its Euro-American ambiance. Montréal is also innovative and invigorating, offering a whirlwind of cultural creations, in the world. On the same site, you can also visit the Biodôme, a magical both traditional and modern. Its downtown bustles with life at the foot of its mountain, while history is rooted in the old quarters near the river. With its yearround party atmosphere, Montréal beats to the rhythm of its festivals: jazz, comedy, cinema, fireworks and more! The city beckons you to discover its fashionable boutiques and famed cuisine, over 30 km (18 mi.) of indoor pedestrian walkways, and its lively casino.

Explore the old city

Riding in a horse-drawn carriage around the 18th and 19th-century residences of Old Montréal, you wil discover the imposing neo-gothic Notre-Dame Basilica, as well as museums that recount the past, such as the Pointe-à-Callière museum and the Centre d'his-

toire de Montréal. The Old Port invites you to relax all year round. Among its attractions, you will find the Montréal Science Centre, a vast complex dedicated to scientific culture that also includes an IMAX theatre. The Old

For more touristic information, visit Tourism Montréal or Tourisme Québec at www.tourisme-montreal.org and www.bonjourquebec.com.

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SCIENTIFIC PROGRAM

The Scientific program will consist of Key-Note Lectures and Technical sessions. Key-Note Lectures will be presented by invited speakers.

THEMES

1 Innovative Design

When function, economy and aesthetics are combined, bridges can become important symbols for the communities involved. Engineers and architects can create the most inventive bridge design concepts. Projects that demonstrate innovative design and systems for highway, railway and footbridges pertain to this topic.

2 New Construction

Modern bridge structures have a wide diversity of construction methods. The inherent economy, durability, environmental impact and aesthetic ensure continued use and development of construction technology.

3 Seismic Design

Recent severe earthquakes have provided invaluable lessons towards the un-

9 Repair, Maintenance and Evaluation

Bridges are essential elements in a roadway/railway network, and therefore central to transportation asset management. Presentations dealing with inventory methods data, inspections and performance assessment for evaluation, repair and maintenance strategies will be made.

10 Historic Bridges

The bridge has always been a feature of human progress and evolution. The development has been marked by long periods of gradual improvement, punctuated by decisive innovations, such as the development of a new material or technique.

11 Aesthetics

All too often the aesthetics of bridges are treated as an afterthought, if at all. The public is becoming more and more concerned about aesthetics, and the harmony with the surrounding environment.

derstanding of the behavior of bridge structures under earthquake loading.

Major code changes have had a dramatic influence on the analysis and design earthquake-resistant bridges throughout the world.

4 Management of Bridge Asset

Bridge Management Systems (BMS) are decision-support tools developed to assist bridge authorities in determining how and when to make bridge investments that will improve safety and preserve existing infrastructure.

5 Rehabilitation and Retrofitting

In the face of ageing and deterioration of bridges, authorities are relying on bridge rehabilitation and retrofitting to extend service life. Increasing activity has brought about greater knowledge of deterioration mechanisms, and innovative rehabilitation and retrofit techniques.

6 Analysis

Bridge structural analysis consists essentially of mathematical modeling of the response of a structure to the applied loads. The possibility to discuss advancements in structural modeling and use of soft computer techniques are offered here.

7 Advanced Materials in Bridges

New breeds of advanced materials developed in the last few years are making headway into bridge structures. Structural components for hybrid construction such as FRP reinforced elements, cable and tendon systems have been successfully used in highway, railway and footbridges.

8 Instrumentation, Testing and Monitoring

In spite of their relatively simple structural systems, bridges suffer heavily from the effects of age, climate and especially traffic that often exceeds codified limits. The measurement and documentation will permit evaluation of the changing condition of a bridge over its lifetime.

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PRELIMINARY PROGRAM

TIME	TUESDAY,AUGUST 22, 2006	DAY 1 WEDNESDAY AUGUST 23, 2006	DAY 2 THURSDAY AUGUST 24, 2006	DAY 3 FRIDAY AUGUST 25, 2006
07:30				
08:00				
08:30				
09:00		Plenary Session	Plenary Session	Plenary Session
09:30				
10:00		Coffee-Break	Coffee-Break	Coffee-Break
10:30				
11:00		Session 1	Session 4	Session 7

11:30				
12:10				
12:30		Lunch	Lunch	
13:00				
13:30				
14:00		Session 2	Session 5	
14:30	Registration	Session 2	Session 3	Technical Tour
15:00				recinical roul
15:30		Coffee-Break	Coffee-Break	
16:00				
16:30		Session 3	Session 6	
17:00				
17:40				
18:00			Cocktail	
18:30	Opening Welcome Reception		Cockian	
19:00	Opening welcome Reception			
19:30				
20:00		Social Event and Dinner		
20:30			Evening Banquet	
21:00				
21:30				
22:00				

SOCIAL PROGRAM

1. Opening Welcome Reception

August 22, 2006 (6:00 PM)

The OpeningWelcome Reception will provide an ideal opportunity for convention delegates to meet and familiarize with the conference premises, in a casual and laid back atmosphere.

2. Supper tour on board the Cavalier Maxim

August 23, 2006 (evening)

A supper tour on board the Cavalier Maxim with its windowed panoramic rooms will offer unexcelled views of the city.

The tour, on the Saint Lawrence River, will cover a distance of 25 history- and attraction-filled kilometers such as the Old Port, Nun's Island, the Boucherville Islands, and more. A guide will accompany the guests and offer a commentary on the different facets and attractions of Montreal.

A choice of two fixed, four-course menus will be offered along with two complimentary beverages. The occasion offers a unique opportunity to experience fine dining in a special ambiance where the décor changes as the tour progresses. The supper is served inside and guests are welcome to visit the deck when they wish.

Depart: 7:00 PM (we leave the hotel no later than 6:00 PM)

Return: 11:00 PM

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3. Banquet

August 24, 2006 (evening)

To give you a sense of the Montreal spirit, the banquet and the evening will provide animation, a pleasant meal, an opportunity to meet new colleagues and fun guaranteed. In other words, an outstanding occasion for friendly

business networking.

4.Technical tour

August 25, 2006 (afternoon)

A tour of the different bridges of Montreal Island will take place as a closing activity for the 2006 Conference on Short and Medium Span Bridges. This technical tour will allow participants an opportunity for on-site appreciation of selected transportation infrastructure.

ACTIVITIES FOR ACCOMPANYING PERSONS

1.Tour of Montreal

August 23, 2006 (morning)

A coach tour of a variety of Montreal sites including: downtown Montréal, Notre-Dame and Nun's Island, the site of the 1967 Montreal World Fair, the Gilles-Villeneuve race course (used for the Canadian Grand Prix), the Montreal Casino, the Old Fort, built in the XVIIIth century to protect Montreal, the University of Montreal, McGill University, the financial district, Saint-Joseph Oratory, the Latin Quarter, etc.The coach will stop at Notre-Dame Basilica and at Mount Royal Park. Guests will also be invited to experience a Montreal classic for lunch.

2.Visit to the Botanical Gardens and the Olympic Park August 23,2006 (afternoon)

This tour will visit several of Montreal's other attractions: the Montreal Botanical Gardens (ranked second in the world), the Insectarium, and the Olympic Stadium (constructed for the 1976 Olympic Summer Games) and including the funicular climb up the highest inclined tower in the world.

3.Guided walking tour of Old Montreal including a visit to the Pointe-à-Callière Montreal Museum of Archaeology and History

August 24, 2006 (morning)

This guided walking tour offers guests the opportunity to observe: the Old Port of Montreal and its restaurants; City Hall; the markets and public buildings; the original financial district; historic homes; churches; Place Jacques Cartier; the Pointe-à-Callière Montreal Museum of Archaeology and History; etc.

Note: The walking tour will take place in all weather conditions. Please wear comfortable walking shoes and bring appropriate clothing in case of rain. Transportation to the Old Port of Montreal and return will be by metro (subway).

Dinner

The tour will end with dinner in a restaurant in the Old Port of Montreal area known for its seafood and steaks.

*The description of guest activities is for guidance and is subject to change without notice.

PARTNERSHIP

The International Conference on Short and Medium Span Bridges will offer a varied and high quality technical, social, and cultural program to satisfy the needs of both conference-goers and sponsor organizations.

Four partnership options are available to meet your needs for visibility and the degree of involvement and participation you wish in the success of the conference.

are expected. During this event about thirty exhibit booths for products and services related to short and medium span bridges will be accessible near the conference room.

ACCOMMODATIONS

The Conference Hotel is Le Centre Sheraton Montreal Hotel, conveniently located downtown Montreal, make your reservation soon.

Blocks of rooms at a special group rate of \$205 CAN/night (single or double occupancy) have been set aside for attendees and their accompanying guests. The deadline to tae advantage of this rate reduction is July 21, 2006.

The simplest way to reserve is through the Web site at www.bridgeconference 2006.com under "Accommodation" in the "Registration" unfolding menu.

Reservations can also be made by phone at (514) 878-2000 or by fax at (514) 878-3958. Please make sure to specify that you are attending the 7th International Conference on Short & Medium Span Bridges.

EXHIBITS

The International Conference on Short & Medium Span Bridges will feature more than 250 technical presentations in three days. More than 400 congressmen

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PHOTO CREDITS

- Page 1: Jacques Cartier Bridge
- Page 2: 1 Champlain Bridge, Montréal (The Federal Bridge Corporation Limited) 2 Nautical activities in front of the Casino de Montréal, © Parc Jean-Drapeau, Bernard Brault 3 Terrasse on Place Jacques-Cartier in Old Montréal, © Tourisme Montréal, Stéphan Poulin 4 Montréal as seen from parc Jean-Drapeau, © Tourisme Montréal
- Page 3: Pavillon Desmarais at the Musée des Beaux-Arts de Montréal, © Musée des Beaux-Arts de Montréal, Timothy Hursley
- Page 4: 1 Place-des-Arts, © Tourisme Montréal, Stéphan Poulin
- Page 5: 1 Victoria Bridge in Montréal (The Federal Bridge Corporation Limited) 2 Jardin botanique de Montréal, © Tourisme Montréal 3 Olympic Stadium tower at Parc olympique, © Régie des installations olympiques
- Page 6: Québec Bridge, (Ministère des Transports du Québec)
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CO-SPONSORS

Montréal, Québec, Canada August 23-25, 2006

\$

REGISTRATION	See General Conditions of Registration)		
PLEASE PRINT OR TYPE:			
Name:			
	Ms. FIRST NAME		LAST NAME
Organization:			
Mailing Address:			
		STREET & CITY	
PROVINCE / STATE		COUNTRY	POSTAL / ZIP CODE
Telephone:	Fax:	E-mail:	
Accompanying Person (if registered):			
	FIRST NAME		LAST NAME
Registration Fees	Accepted abstract presenters must register by J	une 1 st , 2006).	
	Before June 1 $^{\rm st}$, 2006	After June 1 st , 20	1006 In Canadian Funds
CSCE Member ²	\$675.00	\$775.00	\$
CSCE Non-Member 2/3	\$750.00	\$850.00	\$
Student ⁴	\$100.00	\$100.00	\$
			Total:\$
Optional Tours Program	1		
	Date	Cost Number of Pa	rticipants In Canadian Funds
Social activity & Dinner	August 23	\$140.00 x	\$

\$90.00

CANADIAN SOCIETY FOR CIVIL ENGINEERING

August 25

S PONSORED BY THE

Technical Tour & Dinner

Accompanying Person: \$ August 22 / August 24 \$150.00 \$ Welcome Reception / Banquet August 23 & 24 \$180.00 \$ Sightseeing Tours in Montreal х August 23 & 24 \$ Conference lunches at the Hotel \$90.00 Total:\$

Payment Method

Please check: MasterCard American Express (Only these Credit Cards are accepted)

> Direct Bank Transfer Bank Draft, Money Order (made payable to Bridge Conference 2006)

Credit Card Number: Expiry Date: Name of Cardholder: Signature:

(PLEASE PRINT) Registration will be final only after receipt of payment.

NOTE: If sending your forms by fax, DO NOT MAIL ORIGINALS

BRIDGE CONFERENCE 2006 (REGISTRATION)

Registration: Gérard Desgagné

Ministère des Transports du Québec

930 ch. Ste-Foy, 7 étage, Québec, Québec CANADA G1S 4X9 Optional Tours:

Fax: (418) 646-5415 **Grand Total:**

Direct Bank Transfers to: BRIDGE CONFERENCE 2006

RBC Royal Bank (Diane Coderre)

728 Plaza Level, 1 Place Ville-Marie, Montréal, Québec CANADA H3C 3B5 Swift code: ROYCCAT2 / Royal Bank: 003 / Transit: 00001 / Account#: 1152149

 $^{\text{th}}$, 2006.

General Conditions of Registration

- 1. It is expressly agreed that the Canadian Society for Civil Engineering, its co-sponsors, members of the Organizing Committee and the Conference Secretariat for the 7th International Conference on Short & Medium Span Bridges (SMSB VII), their legal representatives, directors and employees, and their agents, officers and services, shall not be liable for any loss, injury or damage of any kind whatsoever suffered directly or indirectly by the person, possession or property of any Conference participant or other person during or in connection with the events on the program or any other activities related to the SMSB VII for any reason whatsoever no matter howsoever caused.
- 2. It is agreed that the Organizing Committee and the Secretariat for the SMSB VII, and their agents and officers, reserve the right to cancel at any time any or all of the programmed or other activities if this should appear necessary as a result of events which are beyond their control or which they cannot reasonably be expected to influence or for which they are not responsible. Without limiting the generality of the foregoing, such events shall include force majeure, government or other official regulations, natural disasters, strikes or any kind of industrial action whatsoever, civil, international or other crises, or any other unforeseen occurrence. Decisions regarding the necessity for such cancellation shall be taken by the Organizing Committee, or their agents, at their sole discretion and shall be final.

Cancellation Policy

Refunds of Conference registration fees paid, less a \$100.00 Cdn administration fee, will be granted until June 15 Cancellation must be received in writing to the Registration address before this date.

st . 2006.

A 50% REFUND WILL BE ISSUED AFTER THIS DATE. No refund after August 1

Payment made for optional tours is non-refundable if cancelled after July 1

st . 2006.

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¹ Applicable taxes are included (GST: 10759 9276 RT0038 / QST: 1006467420).

² Registration includes:

- · Admission to all Technical sessions
- · Proceedings on CD-Rom
- · Conference lunches on August 23 and 24, 2006
- · Coffee breaks
- Welcome reception on August 22 and formal banquet on August 24, 2006.
- $^3\,$ Prices include CSCE Membership fees from May 1 $\,$ $^{\mbox{\tiny M}}\,$ to December 31 $\,$ $^{\mbox{\tiny M}}\,$, 2006.
- ⁴ Student Registration includes admission to all Technical sessions and proceedings on CD-Rom.
- $^{\rm 5}\,$ A two-days program with luncheon included during the days of August 23 and 24, 2006.
- ⁶ A copy of your bank transfer form with your name on it MUST be submitted with your registration form. Bank charges are at Registrant's expense.

PRELIMINARY PROGRAM

AUGUST 23-25, 2006

Le Centre Sheraton Montréal Hotel Montréal, Québec, Canada

WEDNESDAY, AUGUST 23RD, 2006

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WEDNESDAY, AUGUST 23 RD, 2006

OPENING SESSION

8:30 - 10:00 KEYNOTE LECTURES

Ballroom

8:30 - 9:15 THEART OF RAILWAY BRIDGE

ENGINEERING -TODAY

Robert A.P. Sweeney

Consultant to Modjeski & Masters

Canada

9:15 - 10:00 BRIDGE MANAGEMENT INTHE PROVINCE

OF QUEBEC:NOWANDTOMORROW

Guy Richard

Ministère des Transports du Québec

Canada

PAGE 1

10:20 - 12:00	THEME 1: INNOVATIVE DESIGN Room A	10:20 - 12:00	THEME 6: ANALYSIS Room B
10:20 - 10:40	DESIGN OFTHE CANADA LINE EXTRADOSEDTRANSIT BRIDGE DonW. Bergman,Andrew Griezic and Christopher R. Scollard Buckland &Taylor Ltd. Canada	10:20 - 10:40	PEDESTRIAN COMFORT OF COLUMBUS MAIN STREET BRIDGE UNDERVIBRATIONS INDUCED BY HEAVYVEHICLES Stoyan Stoyanoff, David D. Byers, and Steve Hague RowanWilliams Davies & Irwin Inc. Canada
10:40 - 11:00	REPLACEMENT OFA DOUBLETRACK RAILWAY CARRYING SWING SPAN OVER THE RICHELIEU RIVER George Nowak Canadian National	10:40 - 11:00	WIND LOADS ON PEDESTRIAN BRIDGES J. Peter C. King, UY. Jeong, L. Z. Kong University of Western Ontario Canada
11:00 - 11:20	Canada LESSONS LEARNED DURINGTHE DESIGNAND CONSTRUCTION OF THE NORTH SASKATCHEWAN RIVER BRIDGE IN EDMONTON,AB. C. P. Rebel and David John Middleton CH2M HILL Canada	11:00 - 11:20	ADVANCEDANALYSISAND TECHNICAL INNOVATIONS OF LIGHTWEIGHT PEDESTRIAN BRIDGES Stanislav Kmet and Jan Kanocz Technical University of Kosice Slovakia
11:20 - 11:40	REPLACEMENT OF THE BELT PARKWAY BRIDGE OVER OCEAN PARKWAY Charles Norrish, III, Chris Sklavounakis, Russell A. Pratt Gannett Fleming, Inc.	11:20 - 11:40	DYNAMICANALYSIS OF BRIDGES UNDER MOVING LOADS Sanjay Gurav University of North Dakota USA
11:40 - 12:00	THREE SPANS IN ONE.BRIDGE IN BENICARLO Salvador Monleón Cremades, Carlos Lázaro Fernández,Alberto Domingo Cabo CMD Ingenieros Spain	11:40 - 12:00	APPLICATION OF OVERLOAD FATIGUE DAMAGE IN PERMIT LOAD BRIDGE RATING Inmar Badwan and RobertY. Liang University of Akron USA

WEDNESDAY, AUGUST 23RD, 2006 Page 16

10:20 - 12:00	PARALLEL SESSION 1 THEME 2: NEW CONSTRUCTION Room C	10:20 - 12:00	PARALLEL SESSION 1 THEME 6: ANALYSIS Room D
10:20 - 10:40	MANITOBA FLOODWAY EXPANSION PROJECT - BRIDGE REPLACEMENT Norm Ulyatt Dillon Consulting Limited Canada	10:20 - 10:40	STABILITYANALYSIS OF HIGHWAY 11 BRIDGES OVER P3TRIBUTARY Brent I.Archibald, Jonathan J.Werner Delcan Corporation Canada
10:40 - 11:00	COMPLETE BRIDGE SPAN INSTALLATIONS Bill Halsband Mammoet Canada	10:40 - 11:00	NUMERICAL STUDY ONTHE DYNAMIC EFFECTS CAUSED BYVEHICULARTRAFFIC ONA FERRY BOARDING RAMP Marc Savard Ministère des Transports du Québec Canada
11:00 - 11:20	INCORPORATINGART INTO BRIDGE DESIGN - SINGLEAND MULTIPLE SPAN PRECAST CONCRETEARCHAPPLICATIONS Paul Proctor, John Shall Reinforced Earth Company Ltd. Canada	11:00 - 11:20	COMPUTER-AIDED GEOMETRIC DESIGN OF HIGHWAY BRIDGES Adel Fam, George Morcous and Mourad Bakhoum Pro/Bridge Engineering Canada
11:20 - 11:40	HOWTO BUILDA 700 FT.\$20M CONCRETE BRIDGE IN ONEYEAR James M. Barker, Richard H.Walters, James A. O'Leary HNTB Corporation USA	11:20 - 11:40	I-GIRDERWARPING STRESS CALCULATION IN 2D FE MODEL YongYang, Jianyuan Sun HDR Engineering Inc. USA
11:40 - 12:00	STUDYAND DESIGN OFANADAPTIVE TUNED MASS DAMPER FOR SELF-CLIMBING FORMWORK INTHE CONSTRUCTION OF CONCRETE PIERS Carlos Casado Sánchez, Alfonso Poncela Méndez, Antolin Lorenzana Ibán CARTIF Spain	11:40 - 12:00	TORSIONAL BEHAVIOUR IN BEAMS AND SLAB DECKS Marco Petrangeli, Alberto Viskovic Università G.D' Annunzio Italy

WEDNESDAY, AUGUST 23 Page 17

10:20 - 12:00	PARALLEL SESSION 1 THEME 1: INNOVATIVE DESIGN Room E	10 :20 - 12 :00	PARALLEL SESSION 1 THEME 7:ADVANCED MATERIALS IN BRIDGES Room F
10:20 - 10:40	INVESTIGATINGA CHANGE OF STRUCTURAL SYSTEM FROM INTERNALTO EXTERNAL POST-TENSIONING MichaelW. Paulsen, David M. Rogowsky, Scott D. B.Alexander Associated Engineering Ltd.	10:20 - 10:40	USING REACTIVE POWDER CONCRETE INAN INNOVATIVE SLAB SYSTEM Ammar Hassan and Makoto Kawakami Taisei Corporation Japan
10:40 - 11:00	Canada DESIGN OF MISSISSIPPI RIVER BRIDGE OVERCOMES ENVIRONMENTAL, FOUNDATION AND STRUCTURAL CHALLENGES Iqbal Husain, Nicolas Theodor, Tony Sangiuliano	10:40 - 11:00	STAINLESS STEEL USE IN PEDESTRIAN BRIDGES Frank N. Smith, Kirk D.Wilson Consultant Canada
11:00 - 11:20	and Dave McAvoy Ministry of Transportation of Ontario Canada DEVELOPMENT OF A BRIDGE EXPANSION	11:00 - 11:20	DUCTAL® PRESTRESSED GIRDERS FOR ATRAFFIC BRIDGE IN MAYENNE,FRANCE Mouloud Behloul, Jacques Resplendino and Olivier Bayard Lafarge
	JOINTWITH INFLATABLE SEAL SYSTEM Jim Au, Clifford Lam and BalaTharmabala Ministry of Transportation of Ontario Canada	11:20 - 11:40	STAINLESS STEEL REBAR:A LONG-LASTING REINFORCEMENT FOR BRIDGES. Frank N. Smith & Kevin Cornell
11:20 - 11:40	JOINTLESSABUTMENT DETAILING FORAN ORTHOGONAL-ENDED STRUCTURE Kelvin L. Fields Neill and Gunter Ltd.	11:40 - 12:00	Consultant Canada HIGH PERFORMANCE STEEL FOR HIGHWAY RDIDGES INTHE USA

Canada
Ca

Ingegneri Pedrazzini sagl

Switzerland

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WEDNESDAY, AUGUST 23 RD, 2006

10 :20 - 12 :00	PARALLEL SESSION 1 THEME 5: REHABILITATION AND RETROFITTING Room G	10:20 - 12:00	PARALLEL SESSION 1 THEME 9: REPAIR, MAINTENANCE AND EVALUATION Room H
10:20 - 10:40	REHABILITATION OF THE LENNOXVILLE BRIDGE INCORPORATING THE SPS (SANDWICH PLATE SYSTEM) TECHNOLOGY Sylvain Lapierre CIMA+ Canada	10:20 - 10:40	FAILURE INVESTIGATION OF STEEL ARCH BRIDGE IN LATCHFORD, ONTARIO Bagnariol, Dino and Kenedi, Walter Ministry of Transportation of Ontario Canada
10:40 - 11:00	PREFABRICATED BRIDGE DECK PANELS - TWENTYYEARS OF HISTORY Mark Kaczinski D.S. Brown Company USA	10:40 - 11:00	MECHANICAL AND HEALTH MONITORING PERFORMANCE OF RC CONCRETE BRIDGE EXTERNALLY REINFORCED BY CFRP BONDING E. Ferrier, A. Si-Larbi, P. Hamelin Université LYON 1 France
11:00 - 11:20	STRENGTHENING OF RC INVERTED T BENTCAP GIRDERS USINGANCHORED CFRP SHEETS Khaled Galal and Mukesh Sekar Concordia University Canada	11:00 - 11:20	PERFORMANCE AND DESIGN CONSIDERATIONS OF SLIDING PLATE-STRIP SEAL EXPANSION JOINTS David Lai, Naran Patel Ministry of Transportation of Ontario Canada
11:00 11:40		11:20 - 11:40	EXPERIMENTAL STUDY ONVARIOUSTYPES

11:20 - 11:40 HIGH PERFORMANCE CONCRETE

OVERLAY FOR REHABILITATION

AND STRENGTHENING OF ORTHOTROPIC

STEEL BRIDGE DECKS

Peter Buitelaar, René Braam, Niek Kaptijn

and Henk Sliedrecht

Contec ApS

Denmark

EFFECT OF DESIGN VARIABLES ON THE

FAILURE MECHANISMS OF FRP-REHABILITATED RC INVERTED T-BEAM BRIDGE BENTCAPS

Khaled Galal and Mukesh Sekar

Concordia University

Canada

OF RETROFITTING METHODS FOR CRACK/ UN CRACK SECTION OF R.C.ELEMENTS

Chetan R. Patel

C.K.Pithawalla College of Eng. &Tech

India

11:40 - 12:00

FIELD PERFORMANCE OF PRESTRESSED

CONCRETE BRIDGE GIRDERS PROTECTED BY CATHODIC PROTECTIONAND CONCRETE

SURFACETREATMENT

Nathalie Chagnon and Zoubir Lounis

National Research Council Canada

Canada

PAGE 5

11:40 - 12:00

WEDNESDAY, AUGUST 23 Page 619

PARALLEL SESSION 1

THEME 8: INSTRUMENTATION, TESTING

10:20 - 12:00 AND MONITORING

Room J

10:20 - 10:40 RESPONSE OF HELICAL STEEL CULVERTS

DURING BACKFILLING IN FULL SCALE

TEST PROGRAM

RW Pritchard, RA Day, PF Dux, KYWong

University of Queensland

Australia

10:40-11:00 DAMAGE IDENTIFICATION OF GIRDER BRIDGE'S

FLEXURAL STIFFNESS

LIU Hua;YE Jianshu

Southeast University

China

11:00-11:20 RECONSTRUCTION OF LOAD TRANSFER

TRAJECTORIES ON A REINFORCED CONCRETE

BRIDGE WITH A LARGE SKEW FROM THE

RESULTS OF A STATIC LOAD TEST

Michel Küntz

CORAXIS

Canada

11:20 - 11:40 FIELDTESTS OF SOIL-STEEL BRIDGE STRUCTURE

Damian Beben, Manko Zbigniew

Opole University of Technology

Poland

11:40 - 12:00 APPLICATION OF LONG GAGE-LENGTH

FIBER OPTIC SENSORSTO MONITOR

BRIDGE STRUCTURES

R.C.Tennyson, N. Banthia, A. Mufti, A. Rivera

FOX-TEK

Canada

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WEDNESDAY, AUGUST 23 RD, 2006 Page 20

	PARALLEL SESSION 2		PARALLEL SESSION 2
13:30 - 15:10	THEME 1: INNOVATIVE DESIGN	13:30 - 15:10	THEME 6: ANALYSIS
	Room A		Room B
13:30 - 13:50	INNOVATIONS IN OPEN SPANDRELARCH	13:30 - 13:50	PRINCIPLE OF DESIGN OF PILETRESTLE BRIDGES
	BRIDGE DESIGN		Anthony Ikpong
	Samanaidu Balakrishnan		Highways and PublicWorksYukon
	Associated Engineering Group Ltd.		Canada
	Canada		
13:50 - 14:10	GREENWAY BRIDGE	13:50 - 14:10	ELASTICVERSUS ULTIMATE PERFORMANCE OF PRESTRESSED CONCRETE BRIDGES
	Joost Meyboom, AnnaLisa Meyboom, M. Sutton		Marcio Araujo and C. S. Cai
	Delcan Corporation		Louisiana State University
	C1-		TICA

Canada

14:10 - 14:30 14:30 - 14:50	TONGNAN BRIDGE INTIANJIN, CHINA Joost Meyboom, W. Victor Anderson Delcan Corporation Canada DESIGN OF THE MAIN SPANS OF	14:10 - 14:30	ULTIMATE STRENGTH OF COMPOSITE I-GIRDER IN PURE POSITIVE BENDING Masatsugu Nagai, Yoshiaki Okui, Naofumi Inaba and Eiji Iwasaki Nagaoka University of Technology Japan
14:50 - 15:10	SECOND HIGHWAY BRIDGE OVERYELLOW RIVER IN ZHENGZHOU, CHINA Bao-chun Chen, Gui-han Peng Fuzhou University China DESIGN PHILOSOPHYAND SUMMARY REPORT: THE PALM JUMEIRAH GATEWAY BRIDGE, DUBAL, UAE Thomas Piotrowski and James Fox	14:30 - 14:50	SLAB CRACKING DURING COMPOSITE BRIDGE CONSTRUCTION: EFFECTIVENESS OF FRACTIONATED CASTINGS IN CONTROLLING THE PHENOMENON Luigino Dezi, Fabrizio Gara, Gianluca Ranzi and Graziano Leoni Marche Polytechnic University Italy
	H2L2 Architects / Planners USA	14:50 - 15:10	CONTROL OF CRACKING FOR CONCRETE BRIDGES-THE PERFORMANCE OF CALCULATION MODELS Lars Eckfeldt Dresden University of Technology Germany

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WEDNESDAY, AUGUST 23 Page 21

	PARALLEL SESSION 2		PARALLEL SESSION 2
13:30 - 15:10	THEME 2: NEW CONSTRUCTION	13:30 - 15:10	THEME 6:ANALYSIS
	Room C		Room D
13:30 - 13:50	REPLACEMENT OF RAINY RIVER BRIDGE	13:30 - 13:50	COMPARISON OF DESIGN EFFECTIVE
	PC Lim, Steve DelVecchio		BRIDGETEMPERATURE RANGES USING DIFFERENT
	Canadian National Railway		BRIDGE DESIGN CODES
	Canada		Alexander Au, Clifford Lam and BalaTharmabala

~umuuu

Canada		Ministry of Transportation of Ontario
DESIGN OF SHORT AND MEDIUM SPAN STEEL RAILWAY BRIDGES - MODERN PRACTICE		Canada
ON NORTH AMERICAN FREIGHT RAILROADS John F. Unsworth Canadian Pacific Railway Canada INNOVATIVE CONCEPTS FOR SEGMENTAL CONCRETE INTERCHANGE Vijay Chandra Parsons Brinckerhoff	13:50 - 14:10 14:10 - 14:30	PREDICTIONS ON FLEXURAL BEHAVIOUR OF REINFORCED CONCRETE BEAMS: APPLICATION OFA FRACTURE MECHANICSAPPROACH Yail J. Kim, R. GordonWight and Mark F. Green Queen's University Canada SPAN STRETCHINGAND OPTIMAL DESIGN OF PRESTRESSED I-GIRDER BRIDGES USING HIGH
USA		STRENGTH CONCRETEAND LRFD METHOD Kamal Mirtalaei, Jean Nehme
CN RAILWAY NEW MEMPHIS SUPER TERMINAL (MST) INTERMODAL DESIGN AND CONSTRUCTION OF A RAILROAD BRIDGE OVER HORN LAKE CUT-OFF DITCH		Arizona Department of Transportation USA
Fernando Moreu ESCA Consultants USA	14:30 - 14:50	LIVE LOAD DISTRIBUTION FOR CONCRETE BRIDGESWITHAASHTO/PCI GIRDERS Z.G. Yousif and R.A. Hindi Bradley University
SIMULATION OF THE RE-DECKING OF JACQUES CARTIER BRIDGE CONSIDERING SPATIAL CONSTRAINTS Cheng Zhang, Amin Hammad, G. Wainer and Tarek M. Zayed Concordia University Canada	14:50 - 15:10	Canada EFFECTIVE SLABWIDTH IN COMPOSITE DECKS: NEW FORMULAS FOR DIFFERENT LOADING CONDITIONS Luigino Dezi, Fabrizio Gara and Graziano Leoni Marche Polytechnic University Italy
	DESIGN OF SHORT AND MEDIUM SPAN STEEL RAILWAY BRIDGES - MODERN PRACTICE ON NORTH AMERICAN FREIGHT RAILROADS John F. Unsworth Canadian Pacific Railway Canada INNOVATIVE CONCEPTS FOR SEGMENTAL CONCRETE INTERCHANGE Vijay Chandra Parsons Brinckerhoff USA CN RAILWAY NEW MEMPHIS SUPER TERMINAL (MST) INTERMODAL DESIGN AND CONSTRUCTION OF A RAILROAD BRIDGE OVER HORN LAKE CUT-OFF DITCH Fernando Moreu ESCA Consultants USA SIMULATION OF THE RE-DECKING OF JACQUES CARTIER BRIDGE CONSIDERING SPATIAL CONSTRAINTS Cheng Zhang, Amin Hammad, G. Wainer andTarek M. Zayed Concordia University	DESIGN OF SHORT AND MEDIUM SPAN STEEL RAILWAY BRIDGES - MODERN PRACTICE ON NORTH AMERICAN FREIGHT RAILROADS John F. Unsworth Canadian Pacific Railway Canada INNOVATIVE CONCEPTS FOR SEGMENTAL CONCRETE INTERCHANGE Vijay Chandra Parsons Brinckerhoff USA CN RAILWAY NEW MEMPHIS SUPER TERMINAL (MST) INTERMODAL DESIGN AND CONSTRUCTION OF A RAILROAD BRIDGE OVER HORN LAKE CUT-OFF DITCH Fernando Moreu ESCA Consultants USA SIMULATION OF THE RE-DECKING OF JACQUES CARTIER BRIDGE CONSIDERING SPATIAL CONSTRAINTS Cheng Zhang, Amin Hammad, G. Wainer and Tarck M. Zayed Concordia University

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WEDNESDAY, AUGUST 23^{RD} , 2006

PARALLEL SESSION 2

13:30 - 15:10 THEME 1: INNOVATIVE DESIGN

PARALLEL SESSION 2

THEME 7:ADVANCED MATERIALS

Room E

13 :30 - 15 :10 IN BRIDGES

Room F

13:30 - 13:50	BRIDGE DECKS HIGH SPEED WATERPROOFING SYSTEMS - SUMMARY OF ACHIEVEMENT IN CANADA Sabine Le Bec, Yvan Paquin Construction DJL inc. Canada	13:30 - 13:50	PERFORMANCE OF ALBERTA INFRASTRUCTURE AND TRANSPORTATION FIBRE REINFORCED OVERLAYS Paul D. Carter, David J. Besuyen CH2M HILL Canada
13:50 -14:10	VANCOUVER CONVENTION CENTRE VIADUCT Craig Schaper, Don H. McCulloch EarthTech Inc. Canada	13:50 - 14:10	DUCTILITY AND DEFORMABILITY OF PARTIALLY PRESTRESSED CONCRETE BEAMS WITH UNBONDED TENDONS KarmenTso, FrancisT. K.Au and Ray K. L. Su University of Hong Kong China
14:10 - 14:30	DESIGNAND CONSTRUCTION OF THE SR 836 FLYOVER BRIDGES ScottW. Dean HNTB Corporation USA	14:10 - 14:30	PROPOSED SHEAR PROVISIONS FOR FRP REINFORCED BRIDGE BEAMS AND GIRDERS John P. Newhook, Brahim Benmokrane and GamilTadros Dalhousie University Canada
14:30 - 14:50 14:50 - 15:10	EXPERIENCE OF INNOVATIVE INTEGRAL BRIDGES IN CHINA Xiaoqin Jin, Xudong Shao Hunan University China AL ENANIA BOWSTRING BRIDGE - EGYPT	14:30 - 14:50	THE FIRST HIGHWAY BRIDGEAPPLYING ULTRA HIGH STRENGTH FIBER REINFORCED CONCRETE IN JAPAN Hikari Okuma, Ikuo Iwasaki, Koichi Nishikawa, Tadatoshi Morita Taisei Corporation
	Hussein Abbas Al Azhar University Egypt	14:50 - 15:10	DEVELOPMENT OF LIGHTWEIGHT HIGH PERFORMANCE CONCRETE MIXES FOR BRIDGE DECK RECONSTRUCTION – STRENGTH, WEIGHT, AND DURABILITY CHARACTERISTICS Guy Mailhot, Glen P. Carlin The Jacques Cartier and Champlain Bridges Inc. Canada

13 :30 - 15 :10	PARALLEL SESSION 2 THEME 5: REHABILITATION AND RETROFITTING Room G	13:30 - 15:10	PARALLEL SESSION 2 THEME 9: REPAIR, MAINTENANCE AND EVALUATION Room H
13:30 - 13:50	CN RAILWAY CONSTRUCTION OF A NEW 80' – 0" STEEL GIRDER SPAN MILE U5.6 EDGEWOOD SUBDIVISION, CRUSE, IL Fernando Moreu ESCA Consultants, Inc. USA	13:30 - 13:50	RELIABILITY-BASED DETERIORATION MODEL FOR DEFLECTION LIMIT STATE OF STEEL GIRDER BRIDGES Pascal Laumet, Andrzej S. Nowak University of Michigan USA
13:50 - 14:10	LIFE-CYCLE ANALYSIS FOR THE GULLWING RIVER BRIDGE REPLACEMENT P.A. Scalzo, K.W. Simbeya Cook Engineering Canada	13:50 - 14:10	LIVE LOAD DISTRIBUTIONS ON IMPACT DAMAGED PRESTRESSED CONCRETE GIRDER BRIDGE Yail J. Kim, Mark F. Green, and R. GordonWight Queen's University
14:10 - 14:30	ANALYSIS ON THE STRENGTHENING EFFICIENCY OF NEAR SURFACE MOUNTED CFRP LAMINATES Jae-Yoon Kang, Young-Hwan Park, Jong-Sup Park, Young-JunYou, Woo-Tai Jung Korea Institute of ConstructionTechnology South Korea	14:10 - 14:30	Canada PRELIMINARY SEISMIC PERFORMANCE EVALUATION OF HIGHWAY BRIDGES Ozgur Avsar,AhmetYakut, Gizem Sevgili and Alp Caner Middle EastTechnical University Turkey
14:30 - 14:50	REVISITING REPLACEMENT RATIONALE FOR THE CLARKE ROAD BRIDGE: "REHABILITATION OF A BRIDGE WITH ONE FOOT IN THE GRAVE" John Pucchio, Matthew Murphy, Ian Blevins ,Tony Fediw, John Lucas EarthTech Canada Inc. Canada	14:30 - 14:50	GARDEN CITY SKYWAY SUBSTRUCTURE REHABILITATION Issam ElKhatib, Dennis Baxter Totten Sims Hubicki Associates Canada
14:50 - 15:10	SMALL AND MEDIUM SPAN BRIDGES: CASE STUDIES FOR STANDARD SOLUTIONS WITH REDUCED MAINTENANCE REQUIREMENTS Enzo Siviero, Bruno Briseghella, Tobia Zordan University of Architecture in Venice (IUAV) Italy	14:50 - 15:10	ASSESSMENT AND MAINTENANCE OF A 15 YEAR OLD STRESS-LAMINATED TIMBER BRIDGE T. Russell Gentry, Karl N. Brohammer, JohnWells, James P.Wacker Georgia Institute of Technology USA

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PARALLEL SESSION 2

THEME 8: INSTRUMENTATION, TESTING

13:30 - 15:10

AND MONITORING

Room J

13:30 - 13:50 COMPARING MONITORING AND POST

DICTION RESULTS OF A HSC CANTILEVER BRIDGE

Cornelis van derVeen and Ane de Boer

Delft University of Technology

Netherlands

13:50- 14:10 APPLICATION OF LONG RANGE 3D LASER

SCANNING FOR REMOTE SENSING AND

MONITORING OF COMPLEX BRIDGE STRUCTURES

Guy Mailhot, Sorin Busuioc

The Jacques Cartier and Champlain Bridges Inc.

Canada

14:10 - 14:30 FATIGUE TESTS ON FULL-SCALE REINFORCED

CONCRETE SLABS:A CASE STUDY

M.P. Natali Sora, G. Rosati

Politecnico di Milano

Italy

14:30 - 14:50 COMPARISON OF TWO IDENTICAL TWIN

HIGHWAY BRIDGES

Jean-François Laflamme, Marc Savard, MartinTalbot

Ministère des Transports du Québec

Canada

14:50 - 15:10 STRUCTURAL EVALUATION OF BRIDGE DREZNIK

DamirTkalcic, Davor Banic, Igor Dzajic

Civil Engineering Institute of Croatia

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15:30 - 16:50	PARALLEL SESSION 3 THEME 1: INNOVATIVE DESIGN Room A	15:30-16:50	PARALLEL SESSION 3 THEME 6:ANALYSIS Room B
15:30 - 15:50	INNOVATIVE BRIDGE DESIGN FOR THE SEA-TO-SKY HIGHWAY IMPROVEMENT PROJECT, DESIGN-BUILD WORK PACKAGE NO. 2, SUNSET BEACH TO LIONS BAY Jianping Jiang, Keith Holmes, Monty Knaus ND LEA Inc.	15:30 - 15:50	SOME IMPLICATIONS OF USING EUROCODE 2 IN THE DESIGN OF MEDIUM SPAN BRIDGES JoséTurmo, Gonzalo Ramos and Angel Carlos Aparicio ETS de Ingenieros de Caminos Spain
15:50 - 16:10	Canada DESIGN OF HIGHLY CURVED CONCRETE RAMP BRIDGES Adel Fam, Derk Meyer and Hank Huitema Pro/Bridge Engineering Canada	15:50 - 16:10	FATIGUE OF TUBULAR BRIDGE JOINTS USING WELDED OR CAST STEEL NODE SOLUTIONS Ann Schumacher, Alain Nussbaumer, Senta Haldimann-Sturm Swiss Federal Laboratories for Materials Testing and Research Switzerland
16:10 - 16:30	CONTINUOUS STEEL-CONCRETE COMPOSITE CONSTRUCTION FOR BRIDGES - AN ECONOMICAL SOLUTION Pydi Lakshmana Rao INSDAG India	16:10 - 16:30	FATIGUE DESIGN OF STEEL-CONCRETE COMPOSITE BEAMS USING F.E.M. Samy GUEZOULI INSA de Rennes France
16:30 - 16:50	CONSTRUCTION OF SHAIKH ZAYED ARCH BRIDGE IN ABU DHABI Parviz Djahani and Jamal AL-Hosani Department of Municipalities and Agriculture	16:30 - 16:50	STRUCTURAL ANALYSIS OF COLD CURVED STEEL PLATE GIRDERS Antoine N. Gergess, Rajan Sen University of Balamand Lebanon

WEDNESDAY, AUGUST 23RD, 2006

15:30 - 16:50	PARALLEL SESSION 3 THEME 2: NEW CONSTRUCTION Room C	15:30 - 16:50	PARALLEL SESSION 3 THEME 6:ANALYSIS Room D
15:30 - 15:50	MINISTRY OF TRANSPORTATION ONTARIO EXPERIENCE IN BRIDGE PLANNING Quazi M. Islam and Iqbal Husain Ministry of Transportation of Ontario Canada	15:30 - 15:50	SURPRISES INSIDE POST-TENSIONED STRUCTURES AND REMEDIES Vijay Chandra, Keith Donington Parsons Brinckerhoff Inc. USA
15:50 - 16:10	THE WUPPER RIVER VALLEY BRIDGE :A STATE-OF-THE-ART COMPOSITE BRIDGE Gero Marzahn, M. Hamme, W. Prehn, J. Swadlo Northrhine-Westfalia Dept. of Transportation Germany	15:50 - 16:10	NEW DEVELOPMENT TO CALCULATE FRICTION LOSS BY 3D FINITE ELEMENT METHOD (3DFEM) F. Danesh , M. Ziaei , M.Ansari Iran University of Science & Technology Iran
16:10 - 16:30	A MODERN CONCEPT OF MOVABLE SCAFFOLDING SYSTEMS António Póvoas Bridge Construction Systems - Portugal Portugal	16:10 - 16:30	PREDICTION OF LOADING-INDUCED TENDON SLIPAT DEVIATORS IN BEAMS PRESTRESSED WITH EXTERNAL TENDONS Bui Khac Diep, Niwa Junichiro Tokyo Institute of Technology

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16:30-16:50 PROPOSED CONNECTION DETAILS FOR PRECAST

CONCRETE BULB TEE GIRDER BRIDGES

Khaled Sennah, Bijal Shah, Reza Kianoush, SiyinTu,

Clifford Lam

Ryerson University

Canada

16:30 - 16:50

ASSESSING THE NORTH AMERICAN BRIDGE CODES FOR THE DESIGN OF T-GIRDERS UNDER

TORSION AND SHEAR

A. Deifalla,A. Ghobarah McMaster University

Canada

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16:10 - 16:30

PRETENSIONED PRESTRESSED CONCRETE BEAM

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15:30 - 16:50	PARALLEL SESSION 3 THEME 1: INNOVATIVE DESIGN Room E	15 :30 - 16 :50	PARALLEL SESSION 3 THEME 7 – ADVANCED MATERIALS IN BRIDGES Room F
15:30 - 15:50	TIME-DEPENDENT EFFECTS IN CONTINUOUS COMPOSITE NU-GIRDER BRIDGES Walter H. Dilger and Gerd Birkle University of Calgary Canada	15:30-15:50	BEHAVIOR OF BRIDGE DECKS REINFORCED WITH MMFX STEEL Hatem Seliem, Gregory Lucier, Sami Rizkalla, and Paul Zia. North Carolina State University USA
15:50 - 16:10	PRECAST PRESTRESSED CONCRETE DECK BULB TEE BRIDGES Mantu C. Baishya, Steven D. Kneip, Joel B. Rossman Kirkham Michael USA	15:50 - 16:10	EVALUATION OF MEDIUM SPAN HYBRID CABLE STAYED BRIDGES WITH ADVANCED COMPOSITE DECK USING FINITE ELEMENT METHOD Husham H.Almansour & M. S. Cheung University of Ottawa Canada

	BRIDGES AND INDUSTRIAL SUPPLY Pierre Passeman, Van-Tho Doan, Philippe Boyer CERIB France	16:10 - 16:30	NEW CHBDC PROVISIONS FOR DESIGN OF FIBRE REINFORCED STRUCTURES JMBT Structures Research Inc. Canada
16:30 - 16:50	DESIGN AND CONSTRUCTION OF STEEL ARCH BRIDGE USING CONCRETE FILLED TUBES (CFT) AT THIMPU CITY, BHUTAN Swapan Sengupta Span Consultants Pvt. Ltd.	16:30 - 16:50	HIGH STRENGTH CONCRETE FOR FLEXURAL DESIGN OF BRIDGE GIRDERS Halit Cenan Mertol,Sami Rizkalla,Paul Zia,Amir Mirmiran North Carolina State University
	India		USA

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WEDNESDAY, AU	JGUST 23 RD , 2006		Page 28
15:30 - 16:50	PARALLEL SESSION 3 THEME 5 – REHABILITATION AND RETROFITTING Room G	15:30 - 16:50	PARALLEL SESSION 3 THEME 9: REPAIR, MAINTENANCE AND EVALUATION Room H
15:30 - 15:50	RE-DECKING OFTHREE MAJOR MONTREAL BRIDGES USING DISTINCT DECK REPLACEMENT METHODS Glen P. Carlin, Guy Mailhot The Jacques Cartier and Champlain Bridges Inc. Canada	15:30 - 15:50	PROPOSED FATIGUE CRITERIA FOR LOAD RATING PRESTRESSED CONCRETE BRIDGES BASED ON STRESS RANGE INTHE STRAND Michael J. Hagenberger Valparaiso University USA

15:50 - 16:10	REPAIR OF HONORÉ MERCIER BRIDGE PIERS BY ENCAPSULATIONWITHTERNARY CONCRETE Pierre Pilotte, François Charbonneau The Jacques Cartier and Champlain Bridges Inc. Canada	15:50 - 16:10	INSPECTION OF TIMBER BRIDGES Anna Pousette, Per-Anders Fjellström SP Swedish NationalTesting and Research Institute Sweden
16:10 - 16:30	DESIGN GUIDELINES FOR STRENGTHENING OF STEEL-CONCRETE COMPOSITE BEAMSWITH HIGH MODULUS CFRP MATERIALS David Schnerch, Mina Dawood, Emmett Sumner and Sami Rizkalla North Carolina State University	16:10 - 16:30	FATIGUE BEHAVIOR OF IMPACT DAMAGED PRESTRESSED CONCRETE BRIDGE GIRDER REPAIRED WITH CFRP SHEETS Owen Rosenboom, Anthony Miller and Sami Rizkalla North Carolina State University USA
16:30 - 16:50	SEISMIC EVALUATIONAND RETROFIT STRATEGY FORAN OVERPASS CROSSING RAILWAY LINES De la Puente, Alejandro; Mitchell, Denis; Chouinard, Luc McGill University Canada	16:30 - 16:50	FATIGUE AND REMAINING LIFE ASSESSMENT OF STEEL BRIDGES MORE THAN 50 YEARS OLD Dominique Bauer and Miguel Morales École de technologie supérieure Canada

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WEDNESDAY, AUGUST 23 Page 629

PARALLEL SESSION 3

THEME 8 – INSTRUMENTATION, TESTING

15:30 - 16:50 AND MONITORING

Room J

15:30 - 15:50 STRUCTURAL ACQUISTICS FOR RRIDGES

15.50 15.50 SINCOLORIE HOOGSICS ON BRIDGE

RELIABILITY EVALUATION

D. Robert Hay, Joel R. Hay, Jose Cavaco, Thomas R. Hay

and Patrick B. Moffatt

TISEC Inc.

Canada

15:50 - 16:10 WAVELET ANALYSIS FOR DAMAGE ASSESSMENT

OF AN EXISTING CONCRETE BRIDGE

Alireza Alvandi, Josée Bastien, Étienne Grégoire,

Marc Jolin

Université Laval

Canada

16:10 - 1 6:30 TESTING OF PRECAST PRESTRESSED CONCRETE

RAILROAD BRIDGES

Duane Otter, Brian Doe and Muhammad Akhtar

TransportationTechnology Center, Inc.

USA

16:30 - 16:50 RELAXATION OF PRESTRESSING STEEL

USED IN CONSTRUCTION OF THE CONFEDERATION BRIDGE

Abu Dabous, S. and El-Badry, M.

Concordia University

Canada

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OPENING SESSION

8:30 - 10:00 KEYNOTE LECTURES

Ballroom

8:30 - 9:15 BRIDGES ON THE CENTRAL ARTERY/TUNNEL

PROJECT, BOSTON MASSACHUSETTS

Vijay Chandra

Parsons Brinckerhoff Inc.

USA

9:15 - 10:00 USE OF PREFABRICATED PANELS IN DECK

REPLACEMENT: RECENT EXPERIENCE IN QUEBEC

Bernard Breault, Adel R. Zaki

SNC-Lavalin inc.

Canada

THURSDAY, AUGUST 24Page 31

10:20 - 12:00	PARALLEL SESSION 4 THEME 1: INNOVATIVE DESIGN Room A	10:20 - 12:00	PARALLEL SESSION 4 THEME 6: ANALYSIS Room B
10:20 - 10:40	BRIDGES THAT COMBINE FUNCTION, ECONOMY AND AESTHETICS YuheYang Parsons Brinckerhoff Inc. USA	10:20 - 10:40	RAILWAY LOADINGS AND REALITY Robert A.P. Sweeney Modjeski & Masters Canada
10:40 - 11:00	ORLANDO INTERMODAL TRANSIT SYSTEM GUIDEWAY "THE ORLANDO EXPERIENCE" - INNOVATIVE DESIGN Victor Ryzhikov, Antonio Ledesma, Joseph Mitchell	10:40 - 11:00	AREMA LONGITUDINAL FORCE REQUIREMENTS Robert A.P. Sweeney Modjeski & Masters Canada
11:00 - 11:20	Parsons Brinckerhoff Inc. USA INNOVATIVE DESIGN OF SHORT SPAN STEEL CONCRETE COMPOSITE BRIDGES WITH ROLLED	11:00 - 11:20	NUMERICAL ANALYSIS OF RAIL – STRUCTURE INTERACTION AND RESONANCE IN RAILWAY BRIDGES Marco Petrangeli, CristianoTamagno University of Pescara
	BEAMS SOME EXAMPLES FROM FRANCE AND GERMANY Wasoodev Hoorpah MIO France	11:20 - 11:40	Italy APPROACH TO THE DESIGN OF MODERN RAILWAY BRIDGES
11:20 - 11:40	DISCOVERING THE POSSIBILITIES OF TWO RECENT TYPES OF UNCONVENTIONAL CABLE-STAYED BRIDGES Ana M. Ruiz-Teran, Angel C. Aparicio	11:40 - 12:00	J.Turmo and A. Meher Prasad University of Castilla-La Mancha Spain DYNAMIC ANALYSIS OF CONCRETE RAILWAY
11:40 - 12:00	University of Castilla-La Mancha Spain THE NEW MAIN STREET BRIDGE		BRIDGE FOR HIGH SPEED TRAINS M.A. Shayanfar, M.Ansari, M. Ziaei Iran University of Science & Technology Iran
	Hans R. Hutton, Jon K. Lindsey, StevenT. Hague HNTB Corporation USA		

THURSDAY, AUGUST 24TH, 2006

10:20 - 12:00	PARALLEL SESSION 4 THEME 2: NEW CONSTRUCTION Room C	10:20 - 12:00	PARALLEL SESSION 4 THEME 3: SEISMIC DESIGN Room D
10:20 - 10:40	TRANS CANADA HIGHWAY SAINT-LEONARD / LONGS CREEK, NEW BRUNSWICK DESIGN, CONSTRUCTION AND REHABILITATION OF STRUCTURES Brian Donald, Mitchell Smith, Hani Keira and Harry Varjabedian Canada	10:20 - 10:40	COMPARATIVE STUDY OF THE SEISMIC PERFORMANCE OF RETROFITTED MULTI-SPAN STEEL BRIDGES Jamie Ellen Padgett, Reginald DesRoches Georgia Institute of Technology USA
10:40 - 11:00	EAST PASCAGOULA RIVER POST-TENSIONED SPLICED GIRDER BRIDGE, MISSISSIPPI, USA TeddyTheryo Parsons Brinckerhoff Quade and Douglas, Inc. USA	10:40 - 11:00	SEISMIC DESIGN AND CONSTRUCTION OF TWO HIGH PROFILE CONCRETE BRIDGES IN A COLD WEATHER ENVIRONMENT Sylvain Montminy, Abdol Noureayan, Ronald J. Watson Delcan Corporation Canada
11:00 - 11:20	SPANNING MISSISQUOI BAY, SIMPLE YET COMPLEX SteveW. Johnson Vanasse Hangen Brustlin, Inc. USA	11:00 - 11:20 11:20 - 11:40	BRIDGE SEISMIC EXPANSION JOINTS Paul Bradford Watson Bowman Acme USA PERFORMANCE-BASED SEISMIC DESIGN OF
11:20 - 11:40	EXPERIMENTAL STUDIES OF PREFABRICATED BRIDGE DECK MODELS AND CLOSURE STRIP CONNECTIONS Alexander Au, Clifford Lam and BalaTharmabala Ministry of Transportation of Ontario Canada	11:40 - 12:00	BRIDGE WITH ENERGY DISSIPATION DEVICES A. Iqbal Bangladesh Consultants Ltd. Bandgladesh SEISMIC BEHAVIOUR OF CABLE-STAYED BRIDGES AND DISSIPATION OF ADDITIONAL ENERGY:A STATE-OF-THE-ART REVIEW

 $11:40-12:00 \qquad \text{INNOVATIVE BUILDING METHODS FOR} \\ \text{BRIDGES WITH SMALL AND MEDIUM SPANS} - \\ \text{VFT@ AND VFT@-WIB} \\$

Victor Schmitt, Michael Weizenegger

Schmitt Stumpf Fruehauf & Pa.

Germany

USA

Galo E. Valdebenito, Angel C. Aparicio

Technical University of Catalonia

Spain

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THURSDAY, AUGUST 24Page 33

10:20 - 12:00	PARALLEL SESSION 4 THEME 1: INNOVATIVE DESIGN Room E	10 :20 -12 :00	PARALLEL SESSION 4 THEME 7:ADVANCED MATERIALS IN BRIDGES Room F
10:20 - 10:40	DEVELOPMENT OF CORRUGATED STEEL WEB T-SHAPED PRESTRESSED CONCRETE GIRDER BRIDGES Takahiro Kakuta, Atsushi Fujioka PSM Construction USA, Inc. USA	10:20 - 10:40	CHBDC DESIGN PROVISIONS FOR REHABI- LITATION OF BRIDGES WITH FRPS Mufti, Bakht, Banthia, Benmokrane, Desgagné, Eden, Erki, Karbhari, Kroman, Lai, Machida, Neale, Tadros, Täljsten JMBT Structures Research Inc. Canada
10:40 - 11:00	THE ILSUN BRIDGE: SPECIAL ISSUES FACED IN THE DESIGN AND ANALYSIS OF PRESTRESSED CONCRETE BOX GIRDER BRIDGE WITH CORRUGATED STEEL WEB Kwang Soo Kim, Kwang Hoe Jung, Chungwook Sim Hyundai Institute of ConstructionTechnology South Korea	10:40 - 11:00	IMPROVING THE DURABILITY AND ECONOMY OF SHORT AND MEDIUM SPAN BRIDGES THROUGH INTERNAL CURING JohnW. Roberts, Bruce Jones, Jessica Hulsman Northeast Solite Corporation USA
11:00 - 11:20	DESIGN OF A TRIANGULAR PRECAST POST TENSIONED BOX GIRDER Takahiko Kimura, Thomas R. Cooper Parsons Brinckerhoff Inc.	11:00 - 11:20	BUILDING A BRIDGE WITH AN ANTICIPATED SERVICE LIFE OF 150 YEARS Sylvain Goulet Ministère desTransports du Québec Canada

11:20 - 11:40	EFFECT OF INITIAL BENDING MOMENT IN	11:20 - 11:40	ADHESIVELY BONDED FRP COMPOSITE SYSTEM FOR REHABILITATION OF BRIDGE DECK
	COMPOSITE GIRDER UNDER FLEXURE FOR UNSHORED CONSTRUCTION		Zihong Liu, Parsun K. Majumdar, Tommy Cousins & Jack Lesko
	V.K. Gupta, Y. Okui, M. Nagai		VirginiaTech
	Saitama University		USA
	Japan		
		11:40 -12:00	FATIGUE BEHAVIOUR OF MMFX CORROSION-
11:40 - 12:00	LAUNCHING ON SUPPLE SKATES		RESISTANT REINFORCING STEEL
	Marco Petrangeli, Marcello Petrangeli		Siebren J. DeJong, Patrick Heffernan, Colin MacDougall
	Università"G. D'Annunzio"		Queen's University
	Italy		Canada

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10 :20 - 12 :00	PARALLEL SESSION 4 THEME 5: REHABILITATION AND RETROFITTING Room G	10:20 - 12:00	PARALLEL SESSION 4 THEME 9: REPAIR, MAINTENANCE AND EVALUATION Room H
10:20 - 10:40	EVALUATION OF NEW SACRIFICIAL ANODE CATHODIC PROTECTION SYSTEMS FOR HIGHWAY BRIDGE DECKSAND SUBSTRUCTURE COMPONENTS David Lai, Frank Pianca Ministry of Transportation of Ontario Canada	10:20 - 10:40	EVALUATING THE FATIGUE LIFE OF REINFORCED CONCRETE BRIDGES Artur Felipe Eckert, Luiz Carlos Pinto da Silva Filho, Francisco de Paula Simões Lopes Gastal Federal University of Brazil Brazil
10:40 - 11:00	CEILING REPAIR OFA RIGID FRAME STRUCTURE USING SELF COMPACTING CONCRETE (SCC) Bernard Pilon Ministère desTransports du Québec Canada	10:40 - 11:00	SYSTEM RELIABILITY MODELS FOR STEEL GIRDER BRIDGES Artur A. Czarnecki and Andrzej S. Nowak University of Nebraska USA
11:00 - 11:20	FLEXURAL BEHAVIOR OF RC BEAMS CTDENGTHENERWITH EYTEDNALL V DDECTDESSED	11:00 - 11:20	FATIGUE OF HIGH STRENGTH BOLTED CONNECTIONS IN TENSION

STRENGTHERED WITH EATERWALL FRESTRESSED

CFRP LAMINATES

Park, Jong-Sup; Park, Young-Hwan; Kang, Jae-Yoon; You,

Young-Jun; Jung, Woo-Tai

Korea Institute of ConstructionTechnology

South Korea

11:20 - 11:40

University of Alberta

Concordia University

COMMECTIONS IN TEMSION

Ian MacPhedran, GilbertY. Grondin

Canada

LEARNING-BASED BRIDGE INSPECTION

Canada

DECISION-SUPPORT SYSTEM Yongxin Hu, Amin Hammad

REHABILITATION OF DAMAGED STEEL-CONCRETE

COMPOSITE BEAMS USING ULTRA-HIGH

MODULUS CFRP SHEETS

Amr Shaat and Amir Fam

Queen's University

Canada

11:40 - 12:00

ANALYSIS AND DESIGN OF REHABILITATED

BUILT-UP HYBRID COMPRESSION MEMBERS

Katherine K.W. Shek and F. Michael Bartlett

University of Western Ontario

Canada

11:40 - 12:00 REHABILITATION, STRENGTHENING AND

> ONGOING MONITORING OF ONTARIO'S LAST REMAINING COVERED WOODEN BRIDGE

Ted Brumfitt, Don Moore, John Stephenson

Regional Municipality of Waterloo

Canada

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11:20 - 11:40

THURSDAY, AUGUST 24Page 35

PARALLEL SESSION 4

THEME 8: INSTRUMENTATION, TESTING

10:20 - 12:00

AND MONITORING

Room J

10:20 - 10:40

EXPERIMENTAL AND THEORETICAL NATURAL

FREQUENCIES OF VIBRATION FOR FATIGUED

CONCRETE BEAMS WITH FRPS

Catalin Gheorghiu, Daniel Bockstael, Jamal E. Rhazi and

Pierre Labossière

University of Manitoba

Canada

10:40 - 11:00

DYNAMIC LOAD RATING OF SINGLE-SPAN

COUNTY RRIDGES

COUNT I DRIDGES

Shen-En Chen and Zhisong Zhao

University of North Carolina at Charlotte

USA

11:00 - 11:20 EXPERIMENTAL INVESTIGATION OF ULTIMATE

STRENGTH OF CONCRETE FILLED STEEL

TUBE GIRDER

Chin, Won-Jong; Kang, Jae-Yoon; Choi, Eun-Suk;

Lee, Jung-Woo

Korea Institute of ConstructionTechnology

South Korea

11:20 - 11:40 REAL-TIME SEISMIC MONITORING OF THE

INTEGRATED CAPE GIRARDEAU BRIDGE ARRAY AND RECORDED EARTHQUAKE RESPONSE

Mehmet Çelebi

USGS

USA

11:40 - 12:00 ASSESSMENT OF BRIDGE DECK SLABS

BY RADAR, POTENTIAL OF CORROSION

AND ELECTRIC RESISTIVITY

O. Dous, J. Rhazi, G. Ballivy

Université de Sherbrooke

Manas Asthana, Craig Smart

Canada

13:30 - 15:10

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PARALLEL SESSION 5
THEME 1: INNOVATIVE DESIGN
13:30 - 15:10
THEME 6: ANALYSIS
Room A
Room B

13:30 - 13:50 STRUCTURALLY SUPPORTED SINGLE POINT 13:30 - 13:50 SOME CONSIDERATIONS IN DESIGN OF BRIDGES

URBAN INTERCHANGES (SPUI) FOR DURABILITY AND SUSTAINABILITY - PART I

Saeed Mirza

UDD MaCill Unvareity

	חשת		MCOIII OHVEISITY
	USA		Canada
13:50 - 14:10	BOSTON'S CENTRAL ARTERY AND ITS INTERCHANGES Vijay Chandra, Keith Donington Parsons Brinckerhoff Inc. USA	13:50 - 14:10	SOME CONSIDERATIONS IN DESIGN OF BRIDGES FOR DURABILITYAND SUSTAINABILITY - PART II Saeed Mirza McGill University Canada
14:10 - 14:30	APPROACHING THE BIG DIG: USE OF PRECAST TRANSITION STRUCTURES Jennifer Hill, Ruchu Hsu, Vijay Chandra Parsons Brinckerhoff Inc. USA	14:10 - 14:30	RELIABILITY BASED BRIDGE RATING SOFTWARE Michael H. Scott, Christopher C. Higgins and Gregory Esch Oregon State University USA
14:30 - 14:50	CONTEXT SENSITIVITY IN PRACTICE THE DESIGN AND CONSTRUCTION OF THE HILLSBOROUGH STREET BRIDGE RALEIGH,NORTH CAROLINA ChristianTodd Ray Parsons Brinckerhoff Quade and Douglas USA	14:30 - 14:50	PROBABILISTIC METHODS IN THE SAFETY ASSESSMENT OF EXISTING BRIDGES: A STEP-BY-STEP PROCESS D.F. Wisniewski; J.R. Casas University of Minho Portugal
14:50 - 15:10	DOCKLAND LIGHT RAILWAY CITY AIRPORT EXTENSION Andrew Alder, Alan Sharpe and James Best Halcrow Group Ltd UK	14:50 - 15:10	A THREE DIMENSIONAL NONLINEAR FINITE ELEMENT MODEL FOR ANALYSIS OF MASONRY ARCH BRIDGES M.A. Shayanfar,A. Sadeghian Iran University of Science & Technology Iran

13:30 - 15:10

PARALLEL SESSION 5 PARALLEL SESSION 5
THEME 2: NEW CONSTRUCTION 13:30 - 15:10 THEME 3: SEISMIC DESIGN

 $Room\ C \hspace{1cm} Room\ D$

13:30 - 13:50	DESIGNAND CONSTRUCTION FOR DURABILITY: COMPARISON BETWEENA NORTH-AMERICANAND EUROPEANAPPROACH Gérard Desgagné, Brigitte Mahut, Florent Imberty, Patrick Guiraud Ministère des Transports du Québec Canada	13:30 - 13:50	ASSESSING THE ADEQUACY OF THE 30% COMBINATION RULE IN ESTIMATING THE CRITICAL RESPONSE OF BRIDGE PIERS UNDER MULTI-DIRECTIONAL EARTHQUAKE COMPONENTS Amar Khaled, RobertTremblay, Bruno Massicotte École Polytechnique de Montréal Canada
13:50 - 14:10	TOWARDS 3D BIM FORTHE BRIDGE LIFECYCLE S. S. Chen, J.W. Li, N. Kannan, R. Patil, K. Potturi, VK.Tangirala University at Buffalo, State University of NewYork USA	13:50 - 14:10	BI-DIRECTIONAL SEISMIC ANALYSIS AND DESIGN OF BRIDGE STEEL TRUSS PIERS ALLOWING A CONTROLLED ROCKING RESPONSE Michael Pollino, Michel Bruneau State University of NewYork at Buffalo
14:10 - 14:30	CONSTRUCTION ENGINEERING ONTHE BENICIA-MARTINEZ BRIDGE REPLACEMENT Jean-Guy Deschamps and Thomas Stelmack Parsons USA	14:10 - 14:30	SEISMIC DESIGN OF THE ST-LAURENT BOULEVARD BRIDGE Sylvain Bédard, Ghislain Dionne, Christian Lemay, Pascal Beauséjour, Patrick Lamontagne Dessau-Soprin
14:30-14:50	MECHANICAL BEHAVIOR OFA BONDED STEEL- CONCRETE COMPOSITE GIRDER A. Si Larbi, E. Ferrier, B. Jurkiewiez, P. Hamelin Université LYON 1 France	14:30 - 14:50	Canada IMPORTANCE OF ACCURATE SHEAR WAVE VELOCITY IN SEISMIC EVALUATION OF BRIDGES Yegian, M. K.; Patel, J.; Kishore, K. and Jain, S. K.
14:50-15:10	THERMAL CRACK RISKANALYSISANDAPPROPRIATE MEASURES FOR PREVENTINGTHERMAL CRACKS AT EARLY-AGE IN CONCRETE BRIDGES Ali A. Farhang, KjellWallin Swedish Cement and Concrete Research Institute Sweden	14:50 - 15:10	Northeastern University USA RAILWAY BRIDGE PERFORMANCE IN EARTHQUAKES THAT DAMAGED RAILROADS William G. Byers BNSF Railway
			USA

ТПUКЭДАТ, AUGUST 24⁻⁻⁻, 2000

13:30 - 15:10	PARALLEL SESSION 5 THEME 1: INNOVATIVE DESIGN Room E	13 :30 - 15 :10	PARALLEL SESSION 5 THEME 7:ADVANCED MATERIALS IN BRIDGES Room F
13:30 - 13:50	INCREASING SERVICEABILITY OF BRIDGES – WIND ASPECTS Petar Sesar, Ana Krecak Civil Engineering Institute of Croatia Croatia	13:30 - 13:50	THE HILLMAN COMPOSITE BEAM John R. Hillman Teng & Associates, Inc. USA
13:50 - 14:10	WIND ENGINEERING STUDIES FOR PROVENCHER PEDESTRIAN BRIDGE Jiming Xie & DeziYang RowanWilliams Davies & Irwin Inc. Canada	13:50 - 14:10	INNOVATIVE BRIDGE SYSTEM OF ULTRA HIGH PERFORMANCE FIBRE REINFORCED CONCRETE: EXPERIMENTS, MODELLING AND DESIGN L. G. Sorelli, P. Fanning, F.Toutlemonde University College of Dublin Ireland
14:10 - 14:30	UNIQUE DESIGN FOR BP PEDESTRIAN BRIDGE, CHICAGO Hal Iyengar, Christopher Rockey, Robert Sinn and John Zils Skidmore, Owings and Merrill LLP USA	14:10 - 14:30	CFRP PRESTRESSED CONCRETE PRISMS AS REINFORCEMENT IN CONTINUOUS CONCRETE T-BEAMS Shahryar Davoudi, Catalin Gheorghiu, Dagmar Svecova University of Manitoba Canada
14:30 - 14:50	STUDY ON RIGID AND FLEXIBLE STRUCTURE SYSTEM OF GIANT WHEEL IN CIHAI BRIDGE Wang Xiaodun,Chen Zhihua,ShiYongjiu,WangYuanqing, Yan Xiangyu Tsinghua University China	14:30 - 14:50	A NEW CONCEPT FOR LIGHTWEIGHT HYBRID-FRP BRIDGE DECK Erika Schaumann, Till Vallée and Thomas Keller Swiss Federal Institute of Technology Lausanne (EPFL) Switzerland
14:50 - 15:10	ROTATION BRIDGE ON WATERWAY STRUCTURE BASED ON FINGER TOUCH SIMULATION USING MULTI-POINTS REACTION AT JOINT SUPPORT SHELL AfshinTurk, Shabnam Ghanavatizadeh KWPA Iran	14:50-15:10	WEAR OF POLYETHYLENE SHEATHINGS OF EXTERNAL TENDONS AT DEVIATION POINTS IN POST TENSIONED BOX GIRDER BRIDGES HermannWeiher, Konrad Zilch Technical University Munich Germany

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13:30 - 15:10	PARALLEL SESSION 5 THEME 5 – REHABILITATION AND RETROFITTING Room G	13:30 - 15:10	PARALLEL SESSION 5 THEME 9: REPAIR, MAINTENANCE AND EVALUATION Room H
13:30 - 13:50	EXPERIMENT ON STRENGTHENING EFFICIENCY OF RC BEAMS STRENGTHENED WITH NSM CFRP REINFORCEMENTS Jung, Woo-Tai; Park, Young-Hwan; Park, Jong-Sup; Kang, Jae-Yoon; You, Young-Jun Korea Institute of ConstructionTechnology South Korea	13:30 - 13:50	CONTAINMENT DESIGN FOR THE PATTULLO BRIDGE STEEL COATING OPERATIONS P.A. Scalzo, K.W. Simbeya, J.G. Hartviksen Cook Engineering Canada
13:50 - 14:10	WIND TUNNEL TESTING AND STABILITY ANALYSIS OF THE ILE D'ORLÉANS SUSPENSION BRIDGE Brad A. Pridham, Stoyan Stoyanoff, MartinTalbot, Alain Brassard, RowanWilliams Davies & Irwin Inc. Canada	13:50 - 14:10	CLEANING AND PAINTING OF THE JACQUES CARTIER BRIDGE – COMPLETING THE CHALLENGE AFTER 15 YEARS OF WORK AND MORE THAN \$45M OF INVESTMENT Glen P. Carlin, Guy Mailhot The Jacques Cartier and Champlain Bridges Inc. Canada
14:10 - 14:30	RECONSTRUCTION OF THE TURCOTTE BRIDGE IN SOREL-TRACY Gaetan Couture, Michaela Aldea, Bernard Pilon Teknika HBA Canada	14:10 - 14:30	SEISMIC EVALUATION OF LEMIEUX ISLAND PIPELINE BRIDGES - A LIFELINE FOR THE CITY OF OTTAWA FRESH WATER NEEDS Jack Ajrab, Sylvain Montminy, Bruce Mason Delcan Corporation Canada
14:30 - 14:50 14:50 - 15:10	DECK REHABILITATION OF THE PEACE RIVER BRIDGE AT DUNVEGAN Bob Ramsay UMA Engineering Ltd. Canada	14:30 - 14:50	EVALUATION AND REPAIRS STRATEGIES FOR NALUBAALE DAM BRIDGE Anthony G Kerali Makerere University Uganda
11.50 15.10		14:50 - 15:10	BRIDGE INSPECTION AND EVALUATION ON CROATIAN HIGHWAYS

DamirTkalcic, Zana Banic, Davor Banic Civil Engineering Institute of Croatia

Croatia

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PARALLEL SESSION 5

13:30 - 15:10 THEME 10: HISTORICAL BRIDGES

Room J

13:30 - 13:50 RAISING OF THE JACQUES CARTIER

BRIDGE – AN HISTORICAL ACCOUNT OF

A DARING ENGINEERING FEAT

Guy Mailhot, Peter Dozzi, Glen P. Carlin

The Jacques Cartier and Champlain Bridges Inc.

Canada

13:50 - 14:10 REPAIR OF A STEEL BRIDGE WITH HIGH

HERITAGE VALUE

Christian Mercier

Ministère des Transports du Québec

Canada

14:10 - 14:30 APPLICATION OF CONTEXT SENSITIVE

DESIGN PRINCIPLES AND PROCESSES TO REPLACE

A HERITAGE BRIDGE IN ONTARIO

Tanya Cross, SusanWagter, Edward Li

Morrison Hershfield Limited

Canada

14:30 - 14:50 THE RESTORATION OF THE PONT TRENCAT

Xavier Font

MLM Consulting Engineers

C---:-

spam

14:50 - 15:10 REHABILITATION OF THE HISTORIC BRIDGE OF

LIONS, ST.AUGUSTINE, FLORIDA

Joseph J. Pullaro, DavidT. Sweeney Lichtenstein Consulting Engineers

USA

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15:30 - 16:50	PARALLEL SESSION 6 THEME 1: INNOVATIVE DESIGN Room A	15:30 - 16:50	PARALLEL SESSION 6 THEME 6:ANALYSIS Room B
15:30 - 15:50	SHORT AND MEDIUM SPAN BRIDGES IN ONTARIO UTILIZING SLIDING ISOLATION BEARINGS Ronald J.Watson R.J.Watson, Inc. USA	15:30 - 15:50	IMPACT OF HYDRATION HEAT ON THE DIAPHRAGM ZONE OF A RIGID FRAME BRIDGE - A CASE STUDY Zhao Liu, Hua Zang, Wusong Wen, Xinya Zhou Southeast University China
15:50 - 16:10	AUTOMATED WELDLESS GRATING FOR BRIDGE DECKS AND THE LIKE Dennis M. Imm Stargrate Systems, Inc. USA	15:50 - 16:10	FE ANALYSIS WITH SMEARED CRACK MODEL FOR CRACK WIDTH EVALUATION IN CONTINUOUS COMPOSITE GIRDERS Okui, Y., Honda, T., Khan, Q., Nagai, M Saitama University Japan
16:10 - 16:30	PROBABILISTIC FATIGUE ASSESSMENT OF POST- WELD TREATED TUBULAR TRUSS BRIDGES ScottWalbridge, Alain Nussbaumer Ecole Polytechnique Fédérale de Lausanne (EPFL) Switzerland	16:10 - 16:30	DETECTION AND LOCALISATION OF DAMAGE IN BRIDGE MODEL BY SPATIAL WAVELET BASED APPROACH Mallikarjuna Reddy. D, Jaya Prakash. G and Swarnamani. S.

Indian Institute of Lechnology Madras

India

16:30-16:50 DESIGN OF PRESTRESSED CONCRETE BRIDGE

GIRDERS MADE WITH HIGH TO ULTRA HIGH

PERFORMANCE FIBRE REINFORCED CONCRETE

S. Braike, B. Massicotte and J.-P. Charron

École Polytechnique de Montréal

PARALLEL SESSION 6

SPAN TECHNIQUE

Canada

16:30 - 16:50 DESIGN AND CONSTRUCTION OF HECHANG

BRIDGE, QUANZHOU, CHINA

Gui-han Peng, Bao-chun Chen

PARALLEL SESSION 6

Fuzhou University

China

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THURSDAY, AUGUST 24TH, 2006

15:30 - 16:50 THEME 2: NEW CONSTRUCTION 15:30 - 16:50 THEME 3: SEISMIC DESIGN

 $Room\ C \hspace{1cm} Room\ D$

15:30 - 15:50 ANALYSIS AND PREVENTION OF IN- 15:30 - 15:50 CONFINEMENT REINFORCEMENT FOR BRIDGES

CONSTRUCTION CRACKS OF PRESTRESSED IN MEDIUM TO HIGH SEISMICITY ZONE
CONCRETE BRIDGES USING SPAN-BY- BASED ON NEW CSA A23.3-04 APPROACH

Frédéric Legeron, Aurélie Vivier, Md. Neaz Sheikh
Zhao Liu, Cao Sanpeng, Qingzhong You, Shouchan Wu,
and Patrick Paultre

Jianlin Zhou

Jianin Znou Université de Sherbrooke

Southeast University Canada

China

Marco Petrangeli, Camillo Andreocci, Francesco Magnorfi,

15:50 - 16:10 PERFORMANCE BASED RETROFIT OF BRIDGE
15:50 - 16:10 LARGE CONCRETE PRECAST BOX GIRDERS PIERS WITH CFRP: TEST DESIGN, MODEL

16:10 LARGE CONCRETE PRECAST BOX GIRDERS PIERS WITH CFRP:TEST DESIGN, MODEL
ALONG THE NEW ITALIAN HIGH SPEED UPDATING, PSEUDO-DYNAMIC TESTING

RAILWAY LINES

Nathalie Roy, Patrick Paultre, Jean Proulx, Thien Phu Le,

BenediktWeber

Marco Orlandini, Giosafatte Geremia Université de Sherbrooke University of Pescara Canada Italy 16:10 - 16:30 FOUNDATION MODELING FOR SEISMIC DESIGNS 16:10 - 16:30 UP-TO-DATE CONCEPTS OF OVERPASSES OF MAJOR TOLL BRIDGES IN CALIFORNIA ON MOTORWAYS Hubert K. Law and Ignatius P. Lam Milenko Pržulj Earth Mechanics, Inc. DDC Consulting & Engineering Ltd. USA Slovenia 16:30 - 16:50 16:30 - 16:50 CONSTRUCTION OF MIDORI-BRIDGE Hirayoshi Imai, Koji Ukai, Shinji Yamanobe, Fujio Yokota Kawada Construction Co., Ltd. Japan

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15:30 - 16:50	PARALLEL SESSION 6 THEME 1: INNOVATIVE DESIGN Room E	15 :30 - 16 :50	PARALLEL SESSION 6 THEME 7:ADVANCED MATERIALS IN BRIDGES Room F
15:30 - 15:50	DESIGN OF CONTINUOUS DOUBLE COMPOSITE HIGH-SPEED RAILWAY BRIDGES Chang-Su Shim, Hyun-Ho Kim, Pil-Goo Lee Chung-Ang University South Korea	15:30 - 15:50	INVESTIGATION OF AN INNOVATIVE FRP- REINFORCED BRIDGE DECK SYSTEM D.Tardif, K.W. Neale, M. Demers, A.R. Zaki and G.Tadros Université de Sherbrooke Canada

15:50 - 16:10	NEW TYPE OF COMPOSITE BRIDGE STRUCTURE WITH CONCRETE FILLED STEEL TUBE GIRDER Jae-Yoon Kang, Eun-Suk Choi, Won-Jong Chin, Jung-Woo Lee, Byung-Suk Kim Korea Institute of ConstructionTechnology South Korea	15:50 - 16:10	ENERGY EFFICIENT INTEGRATED HEATING SYSTEM FOR BRIDGE DECK DE-ICING Pal S. Mangat; David G Catley Sheffield Hallam University UK
16:10 - 16:30	A STUDY ON MULTI-STEPWISE THERMAL PRESTRESSING METHOD FOR STEEL-CONCRETE COMPOSITE BRIDGES Sang-Hyo Kim, Jin-Hee Ahn, Jun-Hwan Kim, Hyung-Ju Kim Yonsei University South Korea	16:10 - 16:30	GLASS FRP JACKETING OF PRESTRESSED CONCRETE BEAMS M. Demers, P. Labossière and C. Mercier Université de Sherbrooke Canada
16:30 - 16:50	STANDARDIZATION OF BRIDGE DETAILING Jure Radic, Zlatko Savor, Alex Kindij University of Zagreb Croatia	16:30 - 16:50	UTILIZATION OF GFRP-REINFORCED CONCRETE PANELS FOR BOX GIRDER BRIDGES T. Sabrah, H. Marzouk and A. Hussein Memorial University of Newfoundland Canada

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PARALLEL SESSION 6 PARALLEL SESSION 6 THEME 5: REHABILITATION AND THEME 4 – MANAGEMENT OF 15 :30 - 16 :50 15:30 - 16:50 RETROFITTING **BRIDGE ASSETS** Room G Room H 15.20 15.50

15.20 15.50

13:30 - 13:30	FOR FLEXURAL STRENGTHENING OF STEEL-CONCRETE COMPOSITE GIRDERS Nora Ragab and Raafat El-Hacha University of Calgary Canada	13.30 - 13.30	AD MODELING IN BRIDGE LIFECTCLE MANAGEMENT SYSTEMS Cheng Zhang and Amin Hammad Concordia University Canada
15:50 - 16:10	THE ART AND SCIENCE OF RETROFITTING HISTORIC ARCH BRIDGES Dr. Sherif S. Morcos, and Mr. Boris Reznikov HDR Engineering, Inc. USA	15:50 -16:10	LOCATION-BASED MOBILE BRIDGE INSPECTION SYSTEM Yongxin Hu,Amin Hammad Concordia University Canada
16:10 - 16:30	THE USE OF GLASS FIBRE-REINFORCED POLYMER FOR RETROFITTING SPLIT TIMBER STRINGERS Sara M. Gómez and Dagmar Svecova University of Manitoba	16:10 - 16:30	BRIDGE MANAGEMENT FOR MUNICIPALITIES: A COMMON SENSE APPROACH John Stephenson Regional Municipality of Waterloo Canada
16:30 - 16:50	Canada STRENGTHENING FULL-SCALE DAMAGED PRECAST/PRESTRESSED CONCRETE DOUBLE-TEE GIRDERS USING CFRP SHEETS Khaled Sennah, Antonio Cofini, Mohamed Attalla, Ayman M. Okeil Ryerson University Canada	16:30 - 16:50	DESIGN AND CONSTRUCTION OF A FULL-WIDTH, FULL-DEPTH PRECAST CONCRETE DECK SLAB ON STEEL GIRDER BRIDGE N. David LeBlanc Totten Sims Hubicki Associates Canada

PAKALLEL SESSION 0

15:30 - 16:50 THEME 11:AESTHETICS

Room J

15:30 - 15:50 THE EAST 153RD STREET BRIDGE - NEW YORK

CITY'S FIRST VEHICULAR CABLE STAYED BRIDGE

Roly Parroco, Alim Baycora, Jeffrey Han

DMJM Harris

USA

15:50 - 16:10 PORT MOODY CABLE-STAYED

PEDESTRIAN OVERPASS

Leslie Mihalik, Dejan Erdevicki

Associated Engineering Ltd.

Canada

16:10 - 16:30 BRIDGE DESIGN AND AESTHETICS IN

FAST CONSTRUCTION IMPLEMENTED ON

MOTORWAYS IN CROATIA

Petar Sesar, Ana Krecak

Civil Engineering Institute of Croatia

Croatia

16:30 - 16:50 COMPARATIVE ANALYSIS OF COMPOSITE

OVERPASSES

Jure Radic, Zlatko Savor, Gordanja Hrelja, Nijaz

Mujkanovic, Andjelko Vlasic

Civil Engineering Institute of Croatia

Croatia

FRIDAY, AUGUST 25th, 2006

FRIDAY, AUGUST 25 TH, 2006

OPENING SESSION

8:30 - 10:00 KEYNOTE LECTURES

Ballroom

8:30 - 9:15 **DEVELOPMENT OF COMPOSITE TRUSS BRIDGE**

USING SUSPENSION STRUCTURE

Akio Kasuga

Sumitomo Mitsui Construction

Japan

9:15 - 10:00 EXTREME BRIDGE OPERATING CONDITIONS

Glen P. Carlin

The Jacques Cartier and Champlain Bridges Inc.

Canada

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	PARALLEL SESSION 7		PARALLEL SESSION 7	
10:20 - 12:00	THEMES 10 AND 11: HISTORICAL BRIDGES	10:20 - 12:00	THEME 6:ANALYSIS	
	AND AESTHETICS		Room B	
	Room A			
10.20 10.40		10.20 10.40	DESIGN OF CONTINUOUS PRINCES	
10:20 - 10:40	A HISTORICAL REVIEW OF BRIDGE AESTHETICS IN ONTARIO	10:20 - 10:40	DESIGN OF CONTINUOUS BRIDGES WITH NU-GIRDERS	
	Roger Dorton, Mark Langridge, Edward Li		Gerd Birkle, Walter H. Dilger and James Hanley	
	Buckland &Taylor Ltd.		Stantec Consulting Ltd	
	Canada		Canada	
10:40 - 11:00	DEVELOPMENT OF THE "AESTHETIC GUIDELINES	10:40 - 11:00	STRUCTURAL EVALUATION OF A TWO-CELL CAST-	
	FOR BRIDGES" FORTHE PROVINCE OF ONTARIO		IN-PLACE CONCRETE BOX GIRDER BRIDGE	
	Edward Li, Iqbal Husain		Brad R. Craig, F. Michael Bartlett	
	Morrison Hershfield Limited		University of Western Ontario	
	Canada		Canada	
11:00 - 11:20	DEN A DIVITA TIAN A PENIN METADA GWAADDA W	11:00 - 11:20	BEHAVIOR AND LOAD-CARRYING MECHANISM OF	
11:00 - 11:20	REHABILITATION OF THE HISTORICWOOD ROW WILSON MEMORIAL BRIDGE	11.00 11.20	RC HIGHWAY BRIDGE DECK SLABSWITH STRAP	
	Evan C. Lowell, Richard C. Ferguson		TomioYasuoka,Atsuhiko Machida, Samitha Jayakody	
	Lichtenstein Consulting Engineers, Inc.		Kajikawa Civil Engineering Consultant Co., Ltd.	
	USA		Japan	
11:20 - 11:40	IMPROVING INFRASTRUCTURE WHILE	11:20 - 11:40	MODELING OF EXISTING MULTI-SPAN SIMPLY	
	PRESERVING HISTORY:WASHINGTON BRIDGE		SUPPORTED STEEL GIRDER BRIDGES UNDER SEISMIC LOADS	
	NO. 200 REPLACEMENT		Bryant G. Nielson and Reginald DesRoches	
	Bharat Patel		Georgia Institute of Technology	
	Vanasse Hangen Brustlin, Inc.		USA	
	USA			
11:40 - 12:00	WROUGHT-IRON BOWSTRING ARCH-TRUSS	11.40 12.00	THE COLL DRESSURE DELINED INVESTORAL	
	BRIDGES:THE ONE-HIT WONDER OF THE 1870S	11:40 - 12:00	THE SOIL PRESSURE BEHIND INTEGRAL DDIDGE ADJUMENTS	

DRIDGE ADUIMENTS

University of Southampton

F. Michael Bartlett and Dana R.Tessler

University of Western Ontario

Canada

Ming Xu

UK

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FRIDAY, AUGUST 25th, 2006

10 :20 - 12 :00	PARALLEL SESSION 7 THEME 7: ADVANCED MATERIALS IN BRIDGES Room C	10:20 - 12:00	PARALLEL SESSION 7 THEME 4: MANAGEMENT OF BRIDGE ASSETS Room D
10:20 - 10:40	NEW PARAPET WALL ON EXISTING DECK USING GFRP FOR THE REHABILITATION OF GLENDALE AVENUE BRIDGE REGIONAL ROAD 89 OVER TWELVE MILE CREEK IN THE CITY OF ST. CATHARINES IN ONTARIO, CANADA Brian Ellis, DuaneVanGeest and Ralph Scholz ELLIS Engineering Inc. Canada	10:20 - 10:40 10:40 - 11:00	MULTI-CRITERIA AND STOCHASTIC MANAGEMENT OF BRIDGE DECKS G. Morcous and Z. Lounis University of Nebraska - Lincoln USA DETERMINATION OF OPTIMAL INTERVENTION STRATEGIES FOR MULTIPLE BRIDGES DURING CATCH-UP PERIODS
10:40 - 11:00	PEDESTRIAN BRIDGES USING RECTANGULAR FRP BOX SECTIONS ACTING COMPOSITELY WITH CONCRETE SLABS Amir Fam Queen's University at Kingston Canada	11:00 - 11:20	Bryan T.Adey, Rade Hajdin, Eugen Brühwiler Infrastructure Management Consultants Switzerland OPTIMAL SINGLE STAGE STRATEGIES FOR BRIDGES Bryan T.Adey, Rade Hajdin, Eugen Brühwiler Infrastructure Management Consultants
11:00 - 11:20	DYNAMIC RESPONSE OF FRP SANDWICH BRIDGES UNDER VEHICLE LOADING Yin Zhang, C. S. Cai and Xiaomin Shi Louisiana State University	11:20 - 11:40	RELIABILITY-BASED ASSESSMENT OF SAFETY FOR EXISTING BRIDGES

USA Stuart G. Reid

University of Sydney

Australia

11:20-11:40 STATIC AND FATIGUE PERFORMANCE OF

CONCRETE BRIDGE DECK SLABS REINFORCED

WITH GLASS FRP BARS 11:40 - 12:00

Brahim Benmokrane, Ehab El-Salakawy, Amr El Ragaby,

and Sherif El Gamal

Université de Sherbrooke

Canada

11:40 - 12:00 MECHANICALLY-FASTENED FRP DECKING SYSTEM

Joan D. Bowser and Morris Muskett

Dan Richards

ZellComp, Inc.

USA

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LIVE LOAD TEST OF A SPS DECK BRIDGE

10:20 - 12:00	PARALLEL SESSION 7 THEME 11:AESTHETICS Room E	10 :20 - 12 :00	PARALLEL SESSION 7 THEME 7:ADVANCED MATERIALS IN BRIDGES Room F
10:20 - 10:40	NEW CROTON DAM SPILLWAY BRIDGE RonaldT. Roman Hardesty & Hanover, LLP USA	10:20 - 10:40	SHEAR DESIGN AND BEHAVIOR OF HIGH- STRENGTH CONCRETE BRIDGE GIRDERS Daniel A. Kuchma, Shaoyun Sun, and Neil M. Hawkins University of Illinois USA
10:40 - 11:00 11:00 - 11:20	AESTHETIC ENHANCEMENTS OF THE PETITCODIAC RIVER BRIDGE NO. 1 Bruce Boyd & Krista MacDonald New Brunswick Department of Transportation Canada THE MERGING OF FORM AND FUNCTION PITS AND MICHIGANIZE IN A SETHETIC DESIGN OF THE	10:40 - 11:00	SHEAR BEHAVIOR OF CONCRETE BRIDGE GIRDERS REINFORCED WITH NEW CARBON FRP STIRRUPS B. Benmokrane, E. El-Salakawy, E.Abdul Mageed, A. El Sayed, and G. Desgagné Université de Sherbrooke Canada
	AND HIGHPOINTS IN AESTHETIC DESIGN OF THE GUADALUPE COUNTY BRIDGES		

11:00 - 11:20

New Mexico Department of Transportation
USA

11:20 - 11:40

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11:40 - 12:00

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11:40 - 12:00

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11:40 - 12:00

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Devin K. Harris, Tommy Cousins, Thomas M. Murray & Angelo Ferro
Virginia Tech
USA

11:20 - 11:40

EFFECT OF LOW AND HIGH TEMPERATURE
ON THE TRANSVERSE THERMAL EXPANSION OF
FRP BARS EMBEDDED IN CONCRETE
Radhouane Masmoudi, Ali Zaidi
Université de Sherbrooke
Canada

11:40 - 12:00

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10 :20 - 12 :00	PARALLEL SESSION 7 THEME 5: REHABILITATION AND RETROFITTING Room G	10:20 - 12:00	PARALLEL SESSION 7 THEME 9: REPAIR, MAINTENANCE AND EVALUATION Room H
10:20 - 10:40	RETROFITTING OF BRIDGE GIRDERS Fathalla Shalouf and Syed Iftikhar Ahmad University of Ottawa Canada	10:20 - 10:40	SIDE-BY-SIDE BOX-BEAM BRIDGE - PERFORMANCE AND DESIGN ISSUES Upul Attanayake, Haluk M.Aktan Wayne State University USA
10:40 - 11:00	FATIGUE STUDY OF THE I-435 MISSOURI RIVER BRIDGE John P. Brestin, Jonathan C. McGormley, and Ghanshyam Gupta	10:40 - 11:00	TESTING AND MONITORING THE PERFORMANCE OF THE QUEENSWAY PEDESTRIAN AND CYCLIST BRIDGE Anthony G Kerali

	Wiss, Janney, Elstner Associates, Inc. USA		Makerere University Uganda
11:00 - 11:20	IMPACT BEHAVIOUR OF CONCRETE BRIDGE DECK SLABS WITH COMPOSITE ULTRA-HIGH PER- FORMANCE FIBER REINFORCED CONCRETE	11:00-11:20	_
	(UHPFRC) OVERLAY Katrin Habel, Paul Gauvreau	11:20 - 11:40	_
	University of Toronto	11:40 - 12:00	_
	Canada		
11:20 - 11:40	_		
11:40 - 12:00	_		

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PARALLEL SESSION 7

THEME 8: INSTRUMENTATION, TESTING

10 :20 - 12 :00 AND MONITORING

Room J

10:20 - 10:40 **REMOTE SECURITY MONITORING OF HISTORIC**

COVERED BRIDGES

Michael D. LaViolette, Brent Phares, JamesVis, TerryWipf,Todd Hagen, Joe Murphy Iowa State University

USA

10:40 - 11:00 RESPONSE OF AN INTEGRAL ABUTMENT BRIDGE

TO TEMPERATURE VARIATIONS

Samir N. Shoukry , Gergis W. William and Mourad Y. Riad

WestVirginia University

USA

11:00 - 11:20 NON-DESTRUCTIVE TESTING OF REINFORCED

CONCRETE BRIDGE DECKS BY THE

GPR TECHNIQUE

Jamal Rhazi, S. Laurens, O. Dous

Université de Sherbrooke

Canada

11:20 - 11:40 —

11:40 - 12:00 —

