



IRF Workshop

Bridge Repair & Maintenance

Professional, hands-on training

**Abha, Saudi Arabia
April 3-6, 2016**



ABOUT THE IRF

The International Road Federation, established in Washington, D.C. in 1948, is a non-governmental, not-for-profit organization with the mission to encourage and promote development and maintenance of better, safer and more sustainable roads and road networks worldwide. Working together with its members and partners, the IRF promotes the social and economic benefits that flow from well-planned and environmentally-sound road transport networks; it helps put in place technological solutions and management practices that provide maximum economic and social returns from national road investments.

The IRF has a major role to play in all aspects of road policy and development worldwide:

- For governments and financial institutions, the IRF provides a wide base of expertise for planning road development strategy and policy.
- For its members, the IRF is a business network, a link to external institutions and agencies, such as the United Nations and the European Union, and a platform to communicate with and access government officials and decision makers.
- For the community of road professionals, including national road associations, advocacy groups, companies and institutions dedicated to the development of road infrastructure, the IRF provides support and knowledge.

Through the International Road Educational Foundation, the IRF awards grants to graduate engineers and other transportation professionals from around the world in support of full-time academic training. With this, the IRF actively supports future generations of industry leaders.

The International Road Federation also takes pride in honoring and recognizing road-industry projects demonstrating excellence and innovation in road development worldwide, via the Global Road Achievement Awards program. The competition, designed to elicit information on successful projects and programs from leading industry organizations, will draw attention to these leading projects and organizations, providing a road map for others to follow in continuously improving and advancing road development worldwide.

With a wide network spanning 116 countries across six continents, the IRF believes that it can make a difference by providing best practices and expert advice to face today's multifaceted world of transport.

MORE INFORMATION

Outside KSA

Magid Elabyad

melabyad@IRFnews.org

+1 703 535 1001

Inside KSA

Hussain M. Aldokhie

hussain.aldokhi@mot.gov.sa

+9966 50 934 7566

ASRC.IRFNEWS.ORG

PRESERVING OUR BRIDGE ASSETS



Well built and maintained bridges are an essential part of Saudi Arabia's transportation network; thus, identifying appropriate measures and tools to repair and maintain these bridges is a key issue for the efficiency and functioning of the Kingdom's transportation network. This IRF certified training workshop will provide you with world-class guidance on bridge repair and maintenance techniques that can enhance the life span and the safety of bridges. This course is part two of the IRF's Bridge Workshop Series in the Kingdom of Saudi Arabia. The first workshop focused on Bridge Inspections and Condition Assessments, while this workshop will have a more hands-on approach to repair and maintenance. Thank you for joining the global family of alumni who have benefited from the IRF's unparalleled training programs.

Eng. Abdullah A. Al-Mogbel

Minister of Transport, Kingdom of Saudi Arabia

ABOUT IRF CERTIFIED WORKSHOPS



IRF Certified Workshops provide a unique forum for sharing the latest industry technologies, solutions and best practices from all over the world. Delegates will exchange knowledge and take it back to their respective countries for the benefit of their industry and societies.

Roads play a vital role in the economic development of all nations. It is a well-established fact that a poor road network hampers economic and social progress; therefore, in these challenging times, investments in the road sector can benefit the whole of society by providing access to markets, jobs, education, healthcare and other services, by lowering the cost of moving goods, and by saving lives and avoiding injuries in unnecessary accidents.

I am honored by your participation in this cutting edge IRF Certified Workshop!

C. Patrick Sankey

IRF President & CEO

OVERVIEW

This course focuses on practical bridge maintenance and repair techniques. During the course experienced practitioners will provide hands-on guidance on how to repair and maintain bridges under various conditions. A wide variety of topics will be covered including, but not limited to Bridge Deck Repair, Expansion Joint Repair, Column and Beam Repair, Crack Repair, Bridge Scour Repair, and Impact Damage Repair. This course is ideal for agencies, contractors and engineering firms currently involved in the maintenance and repair of bridges.

COURSE OUTCOMES

Upon completion of the course, participants will be able to:

- Identify maintenance or repair needs and select the best remedial strategy.
- Describe the step-by-step tasks required to repair and maintain different bridge elements
- Recognize problems that warrant specialized expertise, for example, soliciting the involvement of a qualified structural engineer when repairing structural damage
- Apply effective management techniques (such as planning, scheduling, monitoring and reporting) during daily bridge maintenance operations

VENUE

Abha Palace Hotel

www.abhapalace.com.sa



SUNDAY, APRIL 3: 08:30–14:30

Introductions and Field Trip

MONDAY, APRIL 4: 08:30–14:30

Bridge Deck Delamination Repair

Column and Beam Repair

Crack Repair

Post Tensioning Damage Assessment and Repair

Expansion Joint Repair

Expansion Joint Replacement

TUESDAY, APRIL 5: 08:30–14:30

CFRP Field Installation

Effective Carbon Fiber Repairs

Columns Strengthening with CFRP

Impact Damage Repair

Fire Damage Assessment and Repair

WEDNESDAY, APRIL 6: 08:30–14:30

Bridge Scour Repair

Repair of water and Sewage facilities.

Reinforcement Corrosion and Repair of Corroding Reinforcement

Effective Tools for Asset management



JOSE GARCIA

*Assistant Vice President
Parsons Brinckerhoff*

Jose (Pepe) Garcia holds a BSE and MSE in Engineering from the University of South Florida, Tampa. Mr. Garcia has participated in bridge assessment, preservation, rehabilitation and asset management work. In addition to co-authoring several papers on post-tensioning rehabilitation, his credentials include his experience in structures design, construction, maintenance and management of transportation facilities. With over 20 years with the Florida Department of Transportation (FDOT) and in his current project assignment as principal investigator in support of FHWA's long Term Bridge Performance Program (LTBP), Mr. Garcia has performed simple bridge design and high level bridge evaluations and assessments for simple and complex bridges for projects in the United States and Canada.

Design Manual, the first comprehensive bridge design manual dealing with the implementation of the AASHTO LRFD Bridge Specifications.



PAOLO FRANCHETTI

*CEO
Studio Franchetti*

Paolo Franchetti graduated in Civil Engineering at the University of Padova (Italy) in 1999 and got the PhD in Design, Preservation and Structural Control at the same University. He is CEO, starting from 2003, of Studio Franchetti. The firm was founded in 1960 and continuously, has been operating in the various fields of civil, transportation and environmental engineering, including renewable energy. The firm is present with offices in Italy (Vicenza), Brazil (Rio de Janeiro) and Hong Kong. He

is an Adjunct Professor at the University of Padova for the courses of Dynamic of Structures and Design of Structures for Environmental Protection, as well as a Visiting Professor at the University of California Irvine for a study on seismic vulnerability of networks and road infrastructures.



MOHSEN SHAHAWY

*Principal & CEO
SDR Engineering
Consultant, Inc.*

Dr. Shahawy has more than 35 years of experience in bridge engineering design, assessment, rehabilitation and non-destructive evaluation. He has published more than 180 papers in the areas of pre-stressed /reinforced concrete performance, LRFD Code issues related to shear/bond interaction, bridge performance, load testing and load rating of bridges, dynamic behavior of bridges, and bridge rehabilitation. He is a co-author of the Pre-stressed Concrete Institute (PCI) Bridge

Design Manual, the first comprehensive bridge design manual dealing with the implementation of the AASHTO LRFD Bridge Specifications.



DAVID WHITMORE

*President and Chief
Innovation Officer
Vector Corrosion
Technologies*

Vector Corrosion Technologies, a company which specializes in the repair and corrosion protection of reinforced concrete structures. David Whitmore is a registered Professional Engineer, a NACE Cathodic Protection Specialist and he serves on a number of repair, corrosion, sustainability and education committees of ACI, ICRI and NACE. He is a fellow of the American Concrete Institute and the Canadian Society of Civil Engineers. He has been involved with US Federal Highway Administration

on the Strategic Highway Research Program (SHRP) and SHRP 2 projects with regard to Electrochemical Chloride Extraction and Cathodic Protection of concrete bridge structures.

Sponsorship Packages	PLATINUM	GOLD	SILVER	BRONZE
Cost	IRF Member US \$30,000 Non-member US \$37,500	US \$20,000 US \$25,000	US \$15,000 US \$18,750	US \$10,000 US \$12,500
Recognition in post-program communications	✓	✓		
Company pull-up banner in workshop room (self-supplied)	✓	✓	✓	
Complimentary workshop registrations	8	5	3	2
20% discount on registration price when purchasing additional registrations	Unlimited	15	10	5
Company name and logo will be presented in all publicity and marketing materials under sponsorship level, including: event banners, opening screen, IRFnews.org website, official workshop agenda*	✓	✓	✓	✓
Recognition and plaque presentation at closing ceremony	✓	✓	✓	✓

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FOR OFFICE USE ONLY

Sponsor Application

Payment Received Date

Contact Information

REFERENCE CODE (IF APPLICABLE)

YEAR MONTH DAY

LAST NAME		MOBILE PHONE (WITH COUNTRY CODE) <input type="checkbox"/> PREFERRED CONTACT NUMBER	
FIRST NAME		OFFICE PHONE (WITH COUNTRY CODE) <input type="checkbox"/> PREFERRED CONTACT NUMBER	
EMAIL		FAX NUMBER (WITH COUNTRY CODE)	
ORGANIZATION NAME	JOB TITLE		
ORGANIZATION ADDRESS			
CITY	STATE/PROVINCE	POSTAL CODE	COUNTRY

Sponsor *(check the one box that applies; all amounts in US dollars)*

IRF MEMBERS <input type="checkbox"/> Platinum: US \$30,000 <input type="checkbox"/> Gold: US \$20,000 <input type="checkbox"/> Silver: US \$15,000 <input type="checkbox"/> Bronze: US \$10,000	NON MEMBERS <input type="checkbox"/> Platinum: US \$37,500 <input type="checkbox"/> Gold: US \$25,000 <input type="checkbox"/> Silver: US \$18,750 <input type="checkbox"/> Bronze: US \$12,500
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Payment

PAYMENT TYPE <input type="checkbox"/> Invoice <input type="checkbox"/> Check <input type="checkbox"/> Credit Card	CARD TYPE <input type="checkbox"/> Visa <input type="checkbox"/> MasterCard <input type="checkbox"/> AMEX	CARD NUMBER
CARD EXPIRATION DATE (MM/YY)	CARD SECURITY CODE	NAME ON CARD
AMOUNT TO BE CHARGED (IN US DOLLARS)	TODAY'S DATE (YYYY/MM/DD)	SIGNATURE

By signing this document, I agree to comply with the Terms and Conditions applicable to IRF Events and provide full release of my likeness and voice to be used for promotional purpose by the IRF. This release covers photos and videos taken during the event.

PRINTED NAME	SIGNATURE	DATE OF APPLICATION (YYYY/MM/DD)
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Important Note:

Registration can also be completed online at: www.irfnews.org/event/brm16-abha/



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Registration

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Contact Information

REFERENCE CODE (IF APPLICABLE)

YEAR

MONTH

DAY

LAST NAME

MOBILE PHONE (WITH COUNTRY CODE)
 PREFERRED CONTACT NUMBER

FIRST NAME

OFFICE PHONE (WITH COUNTRY CODE)
 PREFERRED CONTACT NUMBER

EMAIL

FAX NUMBER (WITH COUNTRY CODE)

ORGANIZATION
NAME

JOB TITLE

ORGANIZATION
WEBSITE

ORGANIZATION ADDRESS

CITY

STATE/
PROVINCE

POSTAL CODE

COUNTRY

ORGANIZATION CATEGORY

Government Academia Industry Association Private Sector

Additional Registrants *(please list the names of any additional delegates you are registering)*

LAST NAME

EMAIL

FIRST NAME

JOB TITLE

LAST NAME

EMAIL

FIRST NAME

JOB TITLE

LAST NAME

EMAIL

FIRST NAME

JOB TITLE

LAST NAME

EMAIL

FIRST NAME

JOB TITLE

Registration Rates *(check the one box that applies; all amounts in US dollars. Prices are per person)*

IRF MEMBERS

Government/Academia: **US \$960 / SAR 3,600**
 Private Sector: **US \$2,000 / SAR 7,500**

NON MEMBERS

Government/Academia: **US \$1,200 / SAR 4,500**
 Private Sector: **US \$2,500 / SAR 9,400**

Rates valid through February 24. Late / on-site registrations are subject to an additional 10% fee.

VISA INVITATION

Do you require a visa invitation letter? Yes No

Payment

PAYMENT TYPE

Invoice Check Credit Card

CARD TYPE

Visa MasterCard AMEX

CARD NUMBER

CARD EXPIRATION DATE (MM/YY)

CARD SECURITY CODE

NAME ON CARD

AMOUNT TO BE CHARGED
(IN US DOLLARS)

TODAY'S DATE
(YYYY/MM/DD)

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PRINTED NAME

SIGNATURE (IF FAXING)

DATE OF APPLICATION (YYYY/MM/DD)

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GLOBAL

KNOWLEDGE • SOLUTIONS • EDUCATION
BUSINESS OPPORTUNITIES • BEST PRACTICES



Building Industry Partnerships

Better Roads. Better World.



IRF

International Road Federation

GLOBAL HEADQUARTERS

Madison Place

500 Montgomery Street, Suite 525

Alexandria, VA 22314 USA

Telephone: +1 703 535 1001 Facsimile: +1 703 535 1007