COBRAE

Composite Bridge Alliance Europe

April 2005 COBRAE NEWS No. 04-05

COBRAE NEWS is distributed to over 1.900 addresses among the composites industry, bridge builders, bridge designers & bridge owners.
COBRAE NEWS gives information about the development and application of fiber reinforced polymer composites in bridge and other engineered constructions. COBRAE News is a collection of news items gathered from many sources, such as papers, magazines, newsletters, our readers, exhibitions within AND outside the Composite Industry. Contributions from other sources are welcome and will be included, if they fall within the scope of COBRAE news, so please submit your articles and news!

This newsletter features:

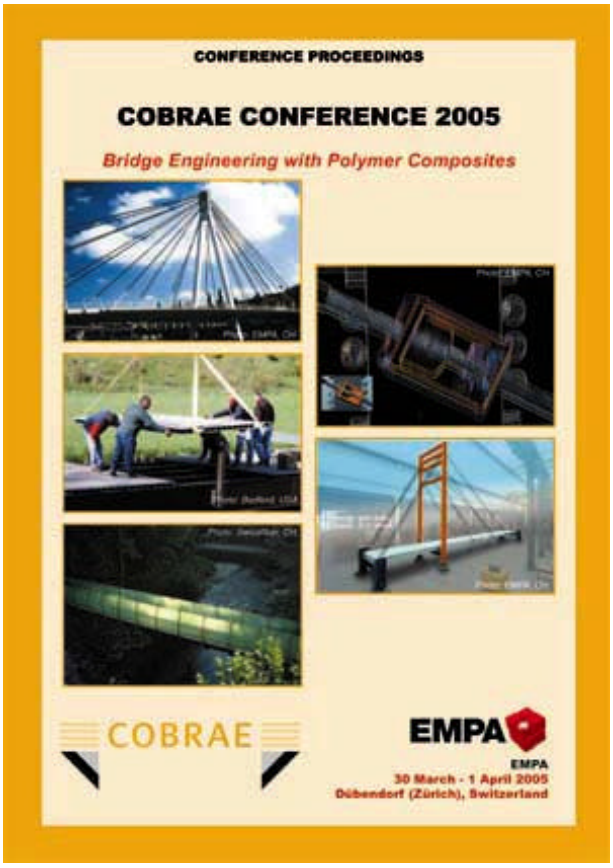
* If you would like to be removed from this mailing list, please reply to info@cobrae.org and type in the subject line "remove: 'e-mail address'" (please type e-mail address you received this e-mail at).
* If you would like to add people or companies to this e-mail list, please give us their contact details/ e-mail.
* To become a Founding Member of the COBRAE Alliance, please fill out the enclosed form.

Visit COBRAE on the Internet at http://www.cobrae.org/

COBRAE GOUP INFO

Bridge engineering with polymer composites
31 March - 1 April 2005
EMPA Akademie, Dübendorf, Switzerland

CONFERENCE PROCEEDINGS OF SUCCESSFUL CONFERENCE FOR SALE



The proceedings of the 'Bridge engineering with polymer composites' conference can be ordered with COBRAE. The proceedings cost Euro 195,-, this includes postage and handling.

25 high quality papers, for full details on papers and authors, please visit our website. Abstracts can be found on the COBRAE website. Please follow this link: http://www.cobrae.org/conference.html and find the link to the abstract page in the Conference Menu.

To order the proceedings, please fill out the order form as listed on the COBRAE website.

For more information:
COBRAE Office
Attn: Mr. Jaap Ketel
PO Box 18
3830 AA Leusden
The Netherlands
Tel: +31 33 4343 500
Fax: +31 33 4343 501
E-mail: info@cobrae.org
http://www.cobrae.org/conference.html

NOT A COBRAE MEMBER YET?

We would like to ask our readers to become a member of this Alliance. COBRAE will need more members to accomplish all its goals. The Alliance has already established a close co-operation with IABSE and the MDA. COBRAE is a member of the newly formed organisation IIFC in Hong Kong.
For more information about the Alliance and its goals, please visit our website at http://www.cobrae.org.
You are also invited to contact the administrative office to discuss activities or actions, which you think COBRAE should take. You can either call to (31) 33 4343 500 or e-mail to info@cobrae.org
We look forward to your positive response. In the end of this newsletter you will find a registration form for membership.

COBRAE MEMBERS

Ashland Specialty Chemical Co., Drew Ameroid Deutschland GmbH
Dr. Hartwig Lohse
Frauenhoferstr. 3
25524 Itzehoe
GERMANY
Tel: (49) 4821 778 480
Fax: (49) 4821 778 489
E-mail: hlohse@ashland.com
http://www.ashland.com

Boettger GFK-Anlagenbau GmbH
Mr. Arne Boettger
Schoener Straße 46
97753 Karlstadt
GERMANY
Tel: (49) 9353 981 090
Fax: (49) 9353 981 092
E-mail: boettger@gfk-anlagenbau.de
http://www.gfk-anlagenbau.de

CCLab - EPFL, Swiss Federal institute of Technology Lausanne
Prof. Dr. Thomas Keller
BP 2225 (BAT. BP)
Station 16
1015 Lausanne
SWITZERLAND
Tel: (41) 21 693 3226
Fax: (41) 21 693 3240
E-mail: cclab@epfl.ch, thomas.keller@epfl.ch
http://www.cclab.ch

Company Armoproject
Mr. Alexey Asseev
Vl. 27, Malakhitovaya str.
RF- 129 128
Moscow
RUSSIAN FEDERATION
Tel. (7) 095 187 1661
Fax.(7) 095 187 1661
E-mail: aga@aproject.ton.ru

Creative Pultrusions, Inc.
Mr. Shane E. Weyant
214 Industrial Lane
Alum Bank, PA 15521
USA
Tel: (1) 814 839 4186
Fax: (1) 814 839 4276
E-mail: sweyant@pultrude.com
http://www.creativepultrusions.com

CRS - Composite Reinforcement Systems AS
Mr. Arne Roger Hole
Drammensveien 264
N- 0240 Oslo
NORWAY
Tel: (47) 22 53 8070
Fax: (47) 2253 7490
Email: arne.roger.hole@hydro.com
http://www.crs.no

DSM Composite Resins
Mr. Bert Bakker
Stettemerstraße 28
8207 Schaffhausen
Switzerland
Tel: (41) 52- 6441 244
Fax: (41) 52- 6441 200
E-mail: bert.bakker@dsm.com
http://www.dsmresins.com

EMPA, Swiss Federal Laboratories for Materials Research
Prof. Urs Meier
Ueberlandstrasse 129
8600 Dübendorf
SWITZERLAND
Tel: (41) 1 823 4100
Fax: (41) 1 823 4014
E-mail: urs.meier@empa.ch
http://www.empa.ch

Exchem Mining and Construction
Mr. Steve Richards
PO Box 7, Venture Crescent
Alfreton, Derby DE55 7RE
UNITED KINGDOM
Tel: (44) 1773 527 333
Fax: (44) 1773 607 638
E-mail: steve.richards@exchem.com
http://www.exchem.com

Exel Oyj
Mr. Vesa Korpimies
Muovilaaksontie 2
82110 Heinävaara
FINLAND
Tel: (358) 13 737 15 12
Fax: (358) 13 737 15 00
E-mail: vesa.korpimies@exel.fi
http://www.exel.fi

Fiberbar AB
Mr. Per Orre
Magasingatan 9
S-21613 Malmo
Sweden
Tel: +46-40160905
Fax: +46-40151101
E-mail: fiberbar@swipnet.se
http://www.fiberbar.se

Fibreforce Composites Ltd.
Mr. John Hartley
Fairoak Lane Whitehouse Ind. Est.
GB- WA7 3DU Runcorn, Cheshire
UNITED KINGDOM
Tel: (44) 1928 701 515
Fax: (44) 1928 713 572
E-mail: john@fibreforce.co.uk
http://www.fibreforce.co.uk

Fortius, Divisie van B.K. International bvba
Mr. Bert Kriekemans
Grasbos 50
BE- 3294 Diest
BELGIUM
Tel: (32) 1332 6873
Fax: (32) 1332 6874
Email: info@fortius.be
http://www.fortius.be

Fyfe Company LLC
Mr. Edward Donnelly
6310 Nancy Ridge Drive Suite 103
San Diego, CA 92121
USA
Tel: (1) 858.642 0694
Fax: (1) 858.642 0947
E-mail: ed@fibrwrap.com
http://www.fyfeco.com

Gordon Composites
Mr. Ed Pilpel
2350 Air Parkway
81401 Montrose, Colorado
USA
Tel: +1 970 240 4460
Fax: +1 970 240 2853
ed@gordoncomposites.com

IREX
Mr. Georges Casari
10 Rue Washington
75008 Paris
FRANCE
Tel: (33) 1 441 332 77
Fax: (33) 1 435 968 30
E-mail: g.casari@wanadoo.fr
http://www.irex.asso.fr

Martin Marietta Composites
Mr. Grant Godwin
2501 Bleu Ridge Road, 5th Floor
Raleigh, NC 27607
USA
Tel: (1) 919 882 2300
Fax: (1) 919 882 2301
E-mail: grant.godwin@martinmarietta.com
http://www.martinmarietta.com

Ministry of Transport, Public Works and Water Management
Ir. Ane de Boer
P.O. Box 20000
3502 LA Utrecht
THE NETHERLANDS
Tel: (31) 30-285 76 99
Fax: (31) 30-288 84 19
E-mail: a.dboer@bwd.rws.minvenw.nl

Owens Corning
Mr. Claude Renaud
Route De Charneux, 59
4651 Battice
BELGIUM
Tel: (32) 87- 69 24 71
Fax: (32) 87- 67 51 10
E-mail: claude.renaud@owenscorning.com
http://www.owenscorning.com

PPG Industries UK Ltd.
Mr. Roger A. Goodwill
Fiber Glass Division, Leigh Road, Hindley Green
Wigan, Lancs WN2 4XZ
UNITED KINGDOM
Tel: (44) 1942 257 161
Fax: (44) 1942 822 388
E-mail: rgoodwill@ppg.com
http://www.ppg.com

Saint-Gobain Vetrotex
Dr. Peter Thornburrow
c/o P.O. Box 2
Aslockton, Nottinghamshire NG13 9EF
UNITED KINGDOM
Tel: (44) 1949- 850 761
Fax: (44) 1949- 851 526
E-mail: peter.thornburrow@saint-gobain.com
http://www.vetrotexeurope.com

Schöck Bauteile GmbH
Dr.-Ing. André Weber
Vimbucher Str. 2
D- 76534 Baden-Baden
GERMANY
Tel: (49) 7223 967 273
Fax: (49) 7223 967 490
E-mail: Andre.weber@schoeck.de
http://www.schoeck.de

Shenzhen ocean Power Engineering Technology Co., Ltd.
Mr. Polo W.P. He
Block C&D, 7&8/F, Bldg. F3.8, Tian'an Cyber Park
518040 Futian District, Shenzhen
CHINA
Tel: +86 755 83300 666
Fax: +86 755 83300 726
E-mail: polo@oceanpower.com
http://www.oceanpower.com

STO Scandinavia AB
Mr. Otto Norling
Gesällgatan 6
SE- 582 77 Linköping
SWEDEN
Tel: (46) 1337 7100
Fax: (46) 1337 7137
o.norling@stoeu.com
http://www.sto.com

Sika Services AG
Mr. Heinz Meier
Tüffenwies 16
CH- 8048 Zürich
SWITZERLAND
Tel: (41) 1 436 4040
Fax: (41) 1 436 4655
E-mail: meier.heinz@ch.sika.com
http://www.sika.com

Tradecc NV
Mr. Roan van Boeckel
Terbekehofdreef 50-52
B- 2610 Wilrijk- Antwerp
BELGIUM
Tel: (32) 3 828 9495
Fax: (32) 3 830 2769
Email: info@tradecc.be
http://www.tradecc.be

To register as a founding member, please fill out the attached form (last page of this document) and return it to the KCA office.

Bridge News Flashes

Messina Bridge bidders withdraw over unfair terms.
Italy was last week struggling to save the 4.6bn (£3.1bn) M essina suspension bridge project between the mainland and Sicily.
The Stretto di Messina Authority had achieved its target of attracting five potential bidders for the record-breaking Messina Bridge project. After the formal bidding documents were sent out following the vetting of the prequalification proposals the five bidders decided to withdraw from the project because of unfair terms in the terms.

The commission to examine the prequalification , chaired by the Council of State president Renato Laschena and includes Stretto di Messina's chief technical officer Giuseppe Fiammenghi will reconsider the process.

The road and rail bridge over the Strait of Messina will be the longest single span suspension bridge in the world with a central span of 3.3km. Cost of the bridge and its links is put at US$5.57 billion. Work is due to start on site next year.
Source NCE Plus: http://www.constructionplus.co.uk

FIRST GRP ROAD BRIDGE ON EUROPEAN CONTINENT

Fiberline Composites have built the first GRP road bridge on the European continent.

The new fibreglass road bridge will be built in the German town ofKlipphausen near Dresden, Germany, and regarded by the company as being quite an innovation, being the first bridge to be built from GFRP to carry road traffic on the European continent.

Bridges made from composite materials are increasingly becoming a more favoured choice of materials to replace worn-out steel and concrete bridges, largely due to the ease in which composite materials can be assembled along with the commonly known advantages that composite materials can bring over the life cycle of bridge structures.

Fiberline claim that the GRP bridge near Dresden is one of the most technologically advanced road bridges in Europe, and has made the bridge the object of considerable international interest. The bridge is built entirely of GRP profiles, and has the same load-carrying capacity as similar bridges in steel or concrete.

Klipphausen has previous experience of GRP bridges, having constructed four new pedestrian and bicycle bridges from Fiberline in 2003 to replace bridges that were destroyed during the flooding in 2002.

Mayor Gerold Mann said that the municipality has chosen GRP structures instead of steel and wood to save money in the long term.

"Purchasing a traditional steel and wood bridge might be cheaper, but a traditional bridge is also expensive to maintain. Due to moisture and corrosion, we have had to renovate bridges that were built at the beginning of the 1990s. GRP bridges have long service lives, they do not corrode, and they require only minimal maintenance. We intend to exploit these advantages," Mayor Gerold Mann added.

Throughout Europe, many road bridges are becoming worn out and in need of being replaced or updated, primarily due to corrosion caused by ice and road salt, but also because many of the older bridges were not designed to cater for heavy traffic.

Norbert Bieseke, an engineer at Fiberline Composites states that "In many cases, a bridge must be installed quickly so there is as little disruption as possible to traffic. This gives GRP bridges another major advantage because they can be assembled in advance and then hoisted into place, due to their low weight," explains Mr. Bieseke.

The bridge at Klipphausen arrived in two separate sections. The two sections were mounted on a foundation already in place in the river, after which the two sections were glued together. Alternatively, it may have been equally feasible to build the bridge in a tent alongside the river or beside a railway line, and then hoist the finished bridge into place.

"At Klipphausen, the bridge was secured to the foundation by bolts, making it easy to remove the bridge in the event that it is threatened by high water in future, and ensuring that the municipality will not lose its investment yet again," says Mr. Bieseke.

The bridge is the result of years of research and development in the ASSET (Advanced Structural SystEms for Tomorrow's Infrastructure) project which has been partially financed by the EU with the project costing some 4 million Euros to date. One of the primary aims of the ASSET project is to find new and more durable construction materials for road bridges. Other members of the ASSET project have included SKANSKA and the British engineering company Mouchel.

The first product borne out of the project was Europe's first GRP road bridge, which opened to traffic in Oxfordshire, UK in 2002.

Article: http://www.netcomposites.com/news.asp?2926

Link: http://www.fiberline.com

REINFORCED LEGS AID TRIPOD STABILITY

A lightweight tripod developed by Vinten Broadcast Ltd, UK, for professional video cameras, uses rack strips made of liquid-crystal polymer (LCP) in each carbon fibre-based leg to help form a stable platform.

For more information:
http://www.performance-materials.net/htm/f20050407.620983.htm

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CONSTRUCTIONAL BEAM WITH SINE-CURVEWEB

Swedish company Biteam AB has developed a single-piece I-beam made of carbon fibre reinforced plastic (CFRP) that has a sine-curve web design integrated with straight top and bottom flanges. This is said to be the first I-beam to be made with this geometry.

For moreinformation:
http://www.performance-materials.net/htm/f20050407.489364.htm

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CONCRETE REPAIR SYSTEM USES MECHANICAL FASTERERS

Researchers at the University of Wisconsin, USA, are investigating an alternative to the current method for concrete repair that uses adhesively bonded fibre reinforced plastics (FRPs).

For more information:
http://www.performance-materials.net/htm/f20050407.149688.htm

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"SMART BRIDGE" TECHNOLOGY

The Need

A new bridge over the Rio Puerco river, west of Albuquerque will be the first of its kind in the nation with built-in fiber-optic sensors to monitor stress in the bridge's girders. Known as "smart bridge" technology, the self-monitoring system offers many advantages over methods that rely largely on visual inspections. Fiber-optic sensors can monitor shrinkage, creep and other processes that cause weakening in high-performance concrete structures.

The Technology

For bridge safety monitoring, the use of fiber-optic sensors can provide information on the effects of stress long before signs of fatigue begin to show visibly, allowing engineers to address potential problems before they become serious and costly. Sensor enables precise strength measurement as the concrete cures, as pieces are trucked to the site and placed and during the first year of use.

Data from such systems can be downloaded on-site, which will be the case for the Rio Puerco bridge, or transmitted to a remote location. The monitoring system installed on the I-10 bridge in Las Cruces transmitted data by cellular telephone to computer of Dr. Rola Idriss, principal investigator for this project, on the NMSU campus.

The Benefits

1. The data will be immediately useful, from the time the concrete is poured for the girders, as they are transported to the site, during the construction of the bridge, and while it is in service.
2. The built-in monitoring system will provide data for assessing the performance of the concrete, which is expected to withstand heavier loads and last longer than ordinary concrete.

Status

The Rio Puerco bridge, being built for an Interstate 40 frontage road about 15 miles west of Albuquerque, is the first U.S. bridge to have this type of monitoring system built into the girders. The Rio Puerco bridge monitoring project is being funded by the state Highway and Transportation Department, the Federal Highway Administration and the National Science Foundation. Collaborating on the project is the University of New Mexico, which is involved in testing the high-performance concrete. Installation of the fiber-optic instrumentation and the pouring of concrete for the girders took place in July. The bridge construction is expected to be completed by the end of the year.

Barriers

* The price of sensors is expensive.
* Careful installation and protection method during construction should be considered.

Source: http://www.new-technologies.org/ECT/Other/foptic.htm
Contact:
1. Dr. Rola Idriss. Bridge Research Program, New Mexico State University, Box 3001, MSC 3-CE, Las Cruces, NM 88003, Tel: (505) 646-3818, Fax: (505) 646-6049. E-mail: ridriss@nmsu.edu
2. Dr. Ken White. Bridge Research Program, New Mexico State University, E-mail: krwhite@nmsu.edu

SMART BRIDGE II

NMSU has received a $400,000 grant from the Federal Highway Administration to install “smart bridge” technology on a new bridge to be constructed on Interstate 25 at the village of Doña Ana.

The grant will enable Rola Idriss, a professor of civil engineering, to install fiber-optic sensors in the bridge’s concrete beams. These sensors will relay information about the effects of stress on the bridge long before any signs of aging begin to show, allowing engineers to address potential problems before they become serious and costly.

The bridge will be the second interstate highway bridge in New Mexico that Idriss has fitted with this type of technology. The first, on Interstate 10 over University Avenue in Las Cruces, opened in July 2004 and was the first interstate highway bridge in the nation to be fitted with such technology (see NMSU Research, 2004).

The new bridge is part of a $5.7 million project to reconstruct the I-25 interchange at Doña Ana. The project is expected to begin in August.

The new bridge in Doña Ana will be the first “smart bridge” to be monitored remotely. Data from the bridge will be transmitted to NMSU.

Idriss said construction of this newest bridge shows that “smart bridge” technology is on the road to becoming standard in the industry. Since the first “smart bridge” was opened in Las Cruces, Idriss has received requests from around the world from researchers who want to apply the technology in their countries.

Contact: Rola Idriss, ridriss@nmsu.edu

Source: http://researchmag.nmsu.edu/2005_SP/d_rr.html#a6

BAY BRIDGE WELDS FOCUS OF FBI PROBE

Bridge safety questioned following workers' allegations

The new Bay Bridge is riddled with defective welds, 15 welders told the Oakland Tribune in a nine-month investigation - allegations that could lead to criminal fraud charges.

The welders' claims have prompted an FBI investigation. In the worst case, the federal probe could lead to tearing apart the bridge to see if it is structurally sound or needs to be rebuilt.

The FBI began investigating allegations in February that welders were "encouraged or instructed to save time by producing substandard welds," said FBI Special Agent in Charge Mark Mershon of the bureau's San Francisco division.

The bureau is investigating whether contractor KFM Joint Venture provided "fraudulent services in exchange for federal contract dollars," Mershon said this week.

The new span is the largest public works project in California history. The state is spending $6.2 billion to replace the vulnerable 68-year-old bridge between Oakland and Yerba Buena Island with one that would likely stay open after the most violent earthquakes. Every day, 282,000 cars cross the bridge.

The allegations involve the first part of the new bridge, a $1.5 billion skyway held up by 160 steel legs. Each leg is riddled with weak welds, because some supervisors ordered welders to hide defects, workers told the Oakland Tribune.

Several welders in interviews estimated one-third of the 5,280 welds in these legs, or piles, may be substandard. Almost all are now encased in concrete even as contractor KFM, according to several Capitol sources, is aggressively lobbying Sacramento to finish the bridge — a contract worth $5 billion more. Welders still on the job said in interviews KFM has promised them part of that work.

In interviews or in testimony, welders describe a skyway worksite where KFM paid cash bonuses to hurry the job, leading to shoddy work and injury cover-ups.

Article by: Sean Holstege and Jill Tucker, STAFF WRITERS

Contact:
Sean Holstege at sholstege@angnewspapers.com
Jill Tucker at jtucker@angnewspapers.com.

Source: http://www.910knew.com/040605FBIBridgeIBA.html

COMPOSITE BRIDGE

Bijl Profielen BV (NL) worked together with Groot-Lemmer (NL) to develop the concept. They produced the pultruded composite profiles for the beams.

This bridge has been built by Groot-Lemmer (NL) for city of Zaanstad (NL).
The decking and handrailing is manufactured by KLP (NL) and is made of recycled polyethylene.

Picture is courtesy of KLP

Picture is courtesy of Groot-Lemmer

Contact: Joop van der Burg

Source: www.bijlprofielen.nl; www.grootlemmer.com; www.lankhorst-mouldings.nl

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Who can help a student?

From: "alessia zambon" <alessiazambon@hotmail.com> Subject: Materials composites.
Date: Mon, 02 May 2005

I'm a student of I.U.A.V. in Venice, I'm doing a graduation thesis with prof. Salvetore Russo, about applications of fiber composites. I would know if I can have material about it,
above all, i would like know which is the last buildings that is made with this materials.

Thank you very much! Alessia ZAMBON.

WWW

The following websites can be of interest:

A BRIDGE DICTIONARY

http://www.nireland.com/bridgeman/Dictionary.htm

WHY AND WHERE COMPOSITE REBAR ?

http://www.fiberglassrebar.com/why_composites.htm

NEW ANNOUNCED EVENTS

FRP INSTITUTE
A professional society for the advancement of composite materials and their applications

International Conference and Exhibition on Reinforced Plastics (ICERP) 2006 at Chennai Trade Centre, Chennai

Contact:
Mr. Y.J. Jayakumar, Executive Secretary
FRP Institute,
NP 23/24, Developed Plot, Ekkattuthangal, Chennai - 600 097, India.
Phone : + 91 44 2644 2093, Fax : + 91 44 2225 0349
Mobile : + 91 98414 26644 e-mail : frpinst@vsnl.net www.frpinstitute.org
Chennai Trade Centre, The Venue

EVENT CALENDAR

2005

4-5 May 2005 Victoria, Australia	**Composites Australia: Conference 2005** Contact: ciainfo@compinst.asn.au, http://www.compinst.asn.au
11-14 May 2005 RAI , Amsterdam, NL	**18th BIBM-congres** Contact: info@bibm2005.com, http://www.bibm2005.com
23 - 25 May 2005 Budapest, Hungary	**FIB Symposium: Keep Concrete Attractive** Contact: fibSymp2005Budapest@eik.bme.hu, www.eat.bme.hu/fibSymp2005

8 - 10 June 2005 Maastricht, Netherlands	**Eurosteel** Contact: initiative@eurosteel2005.info, www.eurosteel2005.info
13-15 June 2005 Pittsburgh, USA	**22nd annual international bridge conference** ***Presentation by COBRAE representative*** Contact: eswp@eswp.com, http://www.eswp.com/bridge/bridge-CFP_info.htm
27 June - 1 July 2005 Durban, South Africa	**ICCM-15** Contact: iccm15@ukzn.ac.za, http://www.iccm15.com
11-13 July 2005 Lyon, France	**Composites in Construction CCC 2005** Contact: l2m@iutal2m.univ-lyon1.fr, http://l2m.univ-lyon1.fr/site_CCC2005/ccc2005_0.html
17-20 July 2005 Boston, Massachusetts	**Sixth International bridge engineering conference:** **Reliability, security, and sustainability in bridge engineering** Contact: TRBMeetings@NAS.edu, http://trb.org/Conferences/IBEC/
28 - 30 July 2005 Melbourne, Australia	**Exhibit at Infrastructure Australia '05** Contact: eventellas2005@smartemail.co.uk, http://www.tradecom.ae/infra_b/index.htm
14 - 19 August 2005 Maui , Hawaii	**International conference on advanced materials for construction of bridges, buildings and other structures - IV** Contact: info@eci.poly.edu, www.engconfintl.org/5aa.html
22-24 August, 2005 Vancouver, BC, Canada	**CONMAT ' 05 - Construction Materials 2005** Contact: conmat05@civil.ubc.ca, http://www.civil.ubc.ca/conmat05
14-16 September 2005 Lisbon, Portugal	**IABSE Symposium Structures and Extreme Events** Contact: iabse.lisbon2005@lnec.pt, http://www.iabse.org/lisbon
24-28 September 2005 Makuhari Messe, Japan	**JAPAN 2005 IPF - Asia's leading plastic & rubber trade show** Contact: ipf@a-tex.co.jp, http://www.a-tex.co.jp/plastics
28-30 September 2005 Colubus, OH, USA	**Composites 2005** http://www.acmashow.org
6-7 October 2005 Barcelona, Spain	**COMPOSITES EUROPE 2005** Contact: info@netcomposites.com, http://www.netcomposites.com
7-10 November 2005 New Orleans Marriott	**7th Int. Symposium on Fiber Reinforced Polymer Reinforcement for Reinforced Concrete Structures** Contact: frprcs7@ce.umn.edu, http://frprcs7.ce.umn.edu
15-16 November 2005 Rotterdam, the Netherlands	**BridgEneering, International Bridge Technology Exhibition** **Conference session organised by COBRAE** Contact: info@briskevents.nl, http://www.briskevents.nl
17-19 November 2005 Mumbai, India	**INDIA COMPOSITES 2005** Contact: airpma2005@yahoo.com / kushal@bom3.vsnl.net.in

22-24 November 2005 London, United Kingdom	**CIVILS 2005** Contact: russell.kenrick@emap.com, http://www.civils.com
8-10 December 2005 Hong Kong, China	**International Symposium on Bond Behaviour of FRP in Structures (BBFS 2005)** Contact: iifc@iifc-hq.org, http://www.iifc-hq.org/

2006

23-24 March 2006 Budapest, Hungary	**8th World Pultrusion Conference** Contact: info@pultruders.com, http://www.pultruders.com
28-30 March 2006 Paris, France	**JEC 2006** http://www.jeccomposites.com
5-8 June, 2006 Naples, Italy	**Second FIB Congress 2006** Contact: fib2006@unina.it, http://www.naples2006.com

N.B. COBRAE TAKES NO RESPONSIBILITY FOR THE CORRECTNESS OF THE ABOVE LISTED INFORMATION

COBRAE

COmposite BRidge Alliance Europe

REGISTRATION FORM FOR FOUNDING MEMBERS

We wish to participate in the COBRAE group as one of the founding members.

We pay Euro 950, - for the period 2005. COBRAE will be an unincorporated association, which will be run by Ketel Consulting Agents B.V. in the Netherlands. The Euro 950, - is made up out of Euro 450, - for annual membership and Euro 500, - for a one time joining fee. Payment can be made after receipt of invoice.

COBRAE's mission is to promote the research, development and application of fibre reinforced polymer composites in rehabilitation, upgrade and new build bridge constructions and infrastructure.

Organisation : …….. (Please write clearly)

Address : ……..……..

Town : ……..……..

Postal code : …….. Country: ……..…

Phone : …….. Fax : ……...……

E-mail : ……..……..

Website : ……..……..

This website to be linked from the COBRAE website: yes / no

Contact person : ……..……..

Payment can only be made by:

❒ Cheque made out to Ketel Consulting Agents

❒ (Inter) National Bank (Euro) Transfer

❒ Credit Card:

❒ MasterCard ❒ Amex ❒ Visa ❒ Diners Card

Credit card number : …… Expiry date: ……..…...

Credit card holder : ……..……...

CVC (Card Validation Code): …… (VISA only, last 3 numbers on back of the card)

Date : …….. City : ……...……..

Signature : ……..……..

Please return this registration form by fax or mail to Ketel Consulting Agents.

COBRAE
P.O. Box 18
3830 AA LEUSDEN
The Netherlands
Tel: (31) 33-4343500
Fax: (31) 33-4343501
E-mail: info@cobrae.org
http://www.cobrae.org