JPCI Award 2016

【JPCI Award for Outstanding Structures】

● Shin-Meishin Mukogawa Bridge

Location	: Hyogo
Structural Type	: 5-span continuous extradosed PC bridge with butterfly webs
Bridge Length	: 442.2m
Span	: 71.8+3@100.0+67.8m
Width	: 10.75m×2 (effective width)
Design	: Sumitomo Mitsui Construction Co.,Ltd.
Construction	: Sumitomo Mitsui Construction Co.,Ltd.

● NICHIA SUWA TECHNOLOGY CENTER

Location	: Nagano
Structural Type	: PCaPC+PCaRC+RC+S
Number of Stories	: 2 stories+1 basement
Building use	: Resarch Center
Floor Space	: 2,625.44m^2
Total floor space	: 4,002.86m^2
Design	: Takenaka Corporation
Construction	: Takenaka Corporation

● Aichi High School of Technology and Engineering

Location	: Aichi
Structural Type	: RC+PCaRC+PCaPC+S
Number of Stories	: 5 stories
Building use	: High School
Floor Space	: 12,161.07m^2
Total floor space	: 30,692.99m^2
Design	: KUME SEKKEI Co.,Ltd
Construction	: JV of TODA CORPORATION and MEIKO CONSTRUCTION Co.,Ltd

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【JPCI Award for Outstanding Structures】

● Aichi Prefectural Police Headquarters
(Rebuild and refurbishment)

Location	: Aichi
Structural Type	: SRC+RC(Seismic Isolation)
Number of Stories	: B3/F9/P2
Building use	: Government Office
Floor Space	: 2,431.50 m^2
Total floor space	: 32,937.51m^2
Proprietor	: Aichi Prefectural Police Headquarters
Repair Design	: NIKKEN SEKKEI LTD
Construction	: KAJIMA・TOKURA Specified Construction JV

● The Metropolitan Expressway Route 1 (Haneda Line)
(Rebuild and refurbishment)

Location	: Tokyo
Structural Type	: Before: 3-span PC continuous box-girder with Gerber hinge After: 9-span PC continuous box girder
Bridge Length	: 476.5m
Span	: (32.1+24.0+23.0)+(25.0×2+32.0)+(23.0+25.0×2)+(20.7+25.0×2)+(23.0+25.0×2)+(23.0+40.0+20.7)m
Width	: 7.5m(effective width)
Design	: P.S.Mitsubishi Construction Co., Ltd ORIENTAL CONSULTANTS Co., Ltd
Construction	: P.S.Mitsubishi Construction Co., Ltd
Outline of construction	: Gerber hinge are made continuous and separated.

【JPCI Award for Outstanding Accomplishments of Constructions】

● Asakegawa Bridge

Location	: Mie
Structural Type	: 3-span steel-PC composite continuous box girder bridge stiffened with arch ribs
Bridge Length	: 325.0m
Span	: 58.8+225.0+38.6m
Width	: 23.25m(effective width)
Design	: IHI Infrastructure Systems Co.,Ltd. Kawada Industries, Inc. Kawada Construction Co.,Ltd. JV
Construction	: IHI Infrastructure Systems Co.,Ltd. Kawada Industries, Inc. Kawada Construction Co.,Ltd. JV

JPCI Japan Prestressed Concrete Institute
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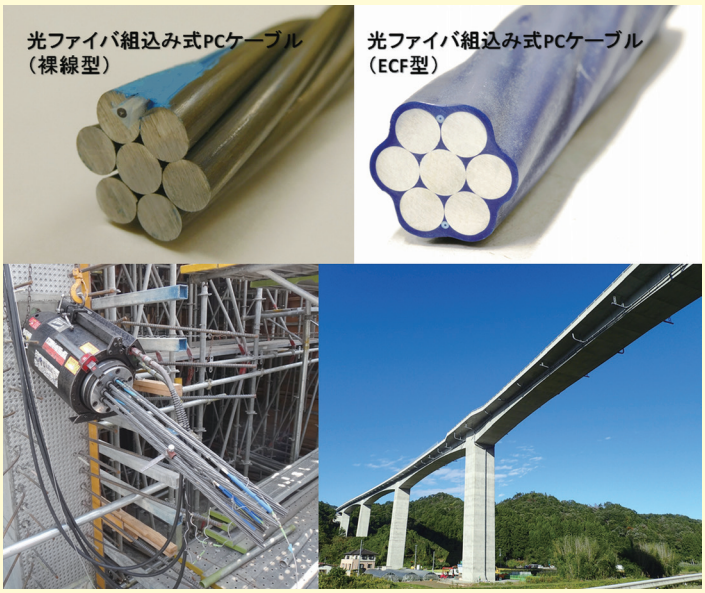
【JPCI Award for Outstanding Engineering Innovations】



● Method of Measuring Tendon Force Using Optical Fiber Sensor

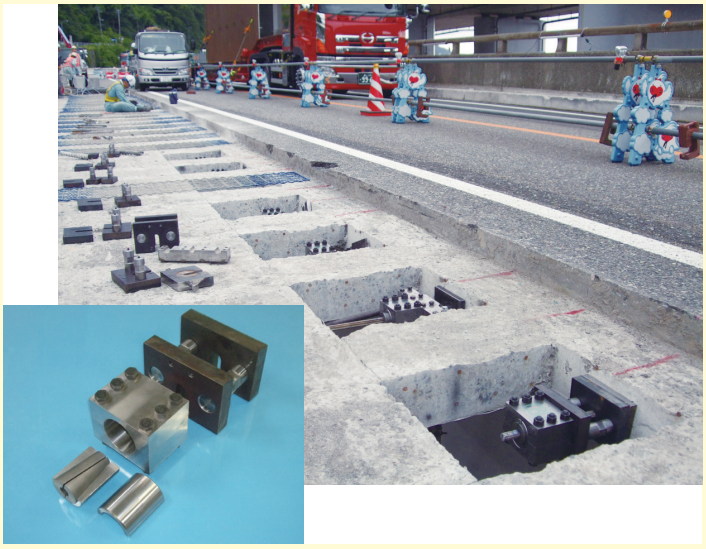
Summary : Measurement method which can monitor tensioning force at any certain section along whole length of tendon by embedding permanently optical fiber strain sensor in prestressing steel strand has been developed. The method has been applied to internal tendon using bare strands and external tendon using epoxy coated and filled strands in a prestressed concrete viaduct. It is confirmed that this method is capable of measuring tensioning force at any certain section along whole length of tendon during tensioning and after a bridge is constructed.

Location : Fukushima
Structural Type : 6-span continuous rigid frame girder bridge
Bridge Length : 462.0m
Span : 44.5m+4@91.0m+51.5m
Effective Width : 12.0m and 14.5m (emergency parking zone)
Design : Sogo Engineering Inc.
Construction : Kajima Corporation

● Development of the Seismic Retrofit by Pre-compressed Wooden Brace System with prestressing

Summary : In this construction method, the compression brace is used to fix the timber in the RC or SRC framework under prestress by the coil spring.
Installation to an existing framework is simple because of prestress, and we can do it easily by hand because we use light-weight timber.

Development : Takenaka Corporation



● PC Internal Fixing Method “i-Fix”

Introduction : The method “i-Fix” exhibits its power for internal fixation of transversal prestressing wires on PC T-girder or I-girder bridge rebuilding works, especially in case of securing traffic spaces on a part of the bridge. This method was applied to the internal fixation on the bridge rebuilding work of Uta Viaduct.

Development : Kawada Construction Co., Ltd.
Nippon Steel & Sumikin SG Wire Co., Ltd.