**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**: Research Center
- **Floor Space**: 2,625.44m²
- **Total floor space**: 4,002.86m²
- **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
- **Design**: KUME SEKKEI Co., Ltd.
- **Construction**: JV of TODA CORPORATION and MEIKO CONSTRUCTION Co., Ltd

### 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 m²
- **Total floor space**: 32,937.51 m²
- **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**: 476.3m
- **Span**: (32.1+24.0+23.0)+25.0+32.0+23.0+25.0+2+(20.7+23.0+25.0+2)+23.0+40.0+20.7)m
- **Width**: 7.5m (effective width)
- **Design**: PS Mitsubishi Construction Co., Ltd ORIENTAL CONSULTANTS Co., Ltd
- **Construction**: PS Mitsubishi Construction Co., Ltd

### 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**: 23.5m (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 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: Research Center
  Floor Space: 2,625.44m²
  Total floor space: 4,002.86m²
  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: 12,161.07m²
  Total floor space: 30,692.99m²
  Design: KUME SEKKEI Co., Ltd
  Construction: JV of TODA CORPORATION and MEIKO CONSTRUCTION Co., Ltd

【JPCI Award for Outstanding Accomplishments of Constructions】

● 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 m²
  Total floor space: 32,937.51m²
  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: PS.Mitsubishi Construction Co., Ltd, ORIENTAL CONSULTANTS Co., Ltd
  Construction: PS.Mitsubishi Construction Co., Ltd
  Outline of construction: Gerber hinge are made continuous and separated.

● 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)
**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**: 46.5m+4(91.0m)+51.5m

**Effective Width**: 12.0m and 14.5m (emergency parking zone)

**Design**: Sogo Engineering Inc.

**Construction**: Kajima Corporation

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**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

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**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.