

# JPCI Award 2025



Japan Prestressed Concrete Institute

**Japan Prestressed Concrete Institute**

公益社団法人 プレストレストコンクリート工学会

# JPCI Award 2025

## 【JPCI Award for Outstanding Structures】

—Civil Engineering Structures Category—



### ● Shin-Minasegawa Bridge

*(Journal of Prestressed Concrete, Japan Vol.66 No. 6; Bridge and Foundation Engineering, February 2025)*

**Location** : Ashigarakami District, Kanagawa Prefecture

**Outline of Structure** :

The Shin-Minasegawa Bridge is a continuous prestressed concrete box girder bridge with corrugated steel webs, located between the Shin-Hadano Interchange and Shin-Gotemba Interchange on the New Tomei Expressway. It consists of a 398-m-long six-span outbound bridge and a 353-m-long five-span inbound bridge. Due to the steep topography and the weak ground conditions, the application of conventional fixed-falsework erection method for constructing concrete webs would have required large-scale falsework and modification of the surrounding terrain, resulting in concerns regarding constructability and safety. In response to these restrictions, a new construction method was developed and applied, in which corrugated steel plate webs were erected in advance and utilized as erection members. In addition, the extensive adoption of precast members, including precast bottom slabs, contributed to the reduction of labor in construction.

**Client** : Central Nippon Expressway Company Limited, Tokyo Regional Head Office

**Design** : Joint Venture of Sumitomo Mitsui Construction and Dai Nippon Construction and Fujita Corporation

**Construction** : Joint Venture of Sumitomo Mitsui Construction and Dai Nippon Construction and Fujita Corporation



### ● Daidogawa Bridge

*(Bridges and Foundation Engineering, July 2025)*

**Location** : Otsu City, Shiga Prefecture

**Outline of Structure** :

The Daidogawa Bridge (provisional name), located between the Otsu JCT and the Joyo JCT/IC on the Shin-Meishin Expressway, is a prestressed reinforced concrete (PRC) continuous girder bridge with corrugated steel webs and connects to the operational Shin-Meishin Expressway. The structure comprises of four bridges, including inbound and outbound mainline bridges exceeding 1,300 meters in length along with two curved ramp bridges with a horizontal alignment radius of 280 meters. At the branching section of the ramp bridges, where the span length is 160 meters, a bifurcated structure was adopted for the pier cap to accommodate the cantilever construction of the long spans. In addition, the girder of the mainline bridge has an asymmetric cross-section with varying overhang span lengths and a ribbed slab structure.

**Client** : West Nippon Expressway Company Limited

**Design** : Sumitomo Mitsui Construction, Kawada Construction, Kyokuto Kowa Joint Venture

**Construction** : Sumitomo Mitsui Construction, Kawada Construction, Kyokuto Kowa Joint Venture

# JPCI Award 2025

## 【JPCI Award for Outstanding Structures】

—Buildings Category—



### ● The University of Osaka and The Nippon Foundation Center for Infectious Diseases

*(Journal of Prestressed Concrete, Japan Vol. 67, No. 4;  
Journal of PC Press, January 2026, Vol. 039; Detail, April 2026)*

**Location** : Suita City, Osaka Prefecture

#### **Outline of Structure :**

The University of Osaka and The Nippon Foundation Center for Infectious Diseases was conceived as a facility that would enable The University of Osaka to address the new challenges brought to light by COVID-19. Rooted in the legacy of Tekijuku, the school founded by Koan Ogata who is a pioneer who made major contributions to the treatment of smallpox, the center is also intended to function as a globally open hub for integrated knowledge on infectious diseases. Structurally, the building features a base-isolated system that allows research activities to be maintained even during major earthquakes, a beamless flat-plate system, prestressed concrete beams that create large unobstructed spaces, and an outrigger frame that suppresses uplift forces on the isolation devices while reducing overall building deformation. Through the effective use of prestressed concrete, the building achieves both high structural performance and an appealing architectural space.

**Client** : The University of Osaka  
**Design** : Taisei Corporation / Nikken Sekkei Joint Venture  
**Construction** : Taisei Corporation, Kansai Branch



### ● NAGASAKI STADIUM CITY (PEACE STADIUM) Connected by SoftBank)

*(Journal of Prestressed Concrete, Japan Vol.67 No.4; Concrete Journal Vol.63, No.6; Journal of Construction Technology November 2024; Journal of Steel Technology January 2025; Shinkenchiku January 2025; Nikkei Architecture December 12th 2024)*

**Location** : Nagasaki City, Nagasaki

#### **Outline of Structure :**

The building is a soccer-specific stadium with a capacity of approximately 20,000, serving as the home stadium for the professional soccer club “V-Varen Nagasaki.” It was designed to use the power of sports to convey a message of “peace” from Nagasaki to the world, and to serve as a prototype for sustainable regional revitalization through private investment and operation. By opening the spacious two-story stadium concourse and seating area composed of PCaPC columns to the public daily, the stadium provides a park-like space that is open to the community and contributes to the society as a hub for regional revitalization in Nagasaki. Furthermore, by minimizing the building’s volume using sloped PCaPC columns, the structure blends seamlessly into Nagasaki’s compact streetscape, creating a space that harmonizes with its surroundings.

**Client** : Japanet Holdings  
**Detailed Design** : Takenaka Corporation  
**Preliminary Design** : Environment Design Institute  
Yasui Architects & Engineers  
Kanabako Structure Engineers (Structural Design)  
**Construction** : Takenaka, Tanigawa, Saikai, Sinwa Construction Joint Venture

# JPCI Award 2025

## 【JPCI Award for Outstanding Structures】

—Buildings Category—



### ● Nagaoka Institute of Design Atelier Building No.4

*(Journal of Prestressed Concrete, Japan Vol.67 No.4; GA JAPAN 196; DETAIL October 2025; DETAIL January 2026)*

**Location** : Nagaoka City, Niigata Prefecture

**Outline of Structure** :

The Fourth Atelier Building at Nagaoka Institute of Design serves as the hub of the Department of Design, which leads new forms of education in the digital age. Conceived under the concept of “Creative Grove,” the project draws on the campus’s natural assets to create a place of learning where technology and nature converge.

The gently curved large roof, designed as a “smooth displacement” that connects the surrounding landscape with the existing campus buildings, incorporates a structural strategy in which prestress is introduced across the entire roof. This innovation enables a low-rise profile while generating an open and expansive space. Acting as a node that links the rich natural environment with student activities, the building stands as a new symbolic landmark for the campus.

**Client** : Nagaoka Institute of Design  
**Design** : NIHON SEKKEI, INC.  
**Construction** : KAJIMA CORPORATION, YOSHIHARAGUMI Co., LTD. Joint Venture  
**Construction (PC)** : Oriental Shiraishi Corporation



### ● NIAGE Public Complex

*(Journal of Prestressed Concrete, Vol.66 No.4; 52nd PC Technical Seminar Text; Cement & Concrete No. 949)*

**Location** : Oita City, Oita Prefecture

**Outline of Structure** :

This facility is a multi-purpose public complex that inherits the rich forest environment of the area and the history of the former elementary school site, while also serving as a community hub and disaster response center. Under height restrictions imposed by the scenic district, a ceiling-free design using precast prestressed concrete double-tee slabs was adopted to reduce story height, achieving both comfort and safety.

The structural system employs mid-story seismic isolation, and a hybrid structure of reinforced concrete, steel, and steel-reinforced concrete ensures high seismic performance and business continuity. In addition, an integrated approach to architecture, structure, and building services including ductless air conditioning, natural ventilation, and solar shading with precast concrete eaves enhances energy efficiency and environmental performance, resulting in CASBEE S Rank certification and ZEB Ready status.

**Client** : Oita City  
**Design** : Kume Sekkei Co., Ltd.  
**Construction** : Nishimatsu Construction Co., Ltd. / Umabayashi Construction Co., Ltd. Joint Venture

# JPCI Award 2025

## 【JPCI Award for Outstanding Engineering Innovations】



**Development** : Penta-Ocean Construction Co., Ltd.,  
Nippon PS Co., Ltd.  
Port and Airport Research Institute (PARI)  
Institute of Science Tokyo

### ● Development of Precast Pier Construction Method Using Prestressed Pressure Joint

*(Journal of Prestressed Concrete, Japan Vol.67 No.6 pp. 91-103, 2025)*

**Location** : Tahara City, Aichi Prefecture

#### Outline of Structure :

This innovative technology is a fully precast (PCa) construction method for port pier superstructures, where all primary components, including pile heads and beams, are factory-manufactured and assembled on-site via prestressed pressure joints. By segmenting and reducing component weight, typical requirements for conventional methods such as extensive on-site casting yards and large crane barges are eliminated, thereby enabling efficient inland transportation. The lightweight superstructure reduces the load on the substructure, leading to substantial optimization in both design and construction, such as a reduction in the required number of piles. Furthermore, this method not only shortens construction periods and reduces labor requirements but also lowers CO2 emissions. Consequently, it achieves a high-level synergy between enhanced productivity and environmental sustainability in maritime infrastructure development.

## 【JPCI Award for Outstanding Accomplishment of Constructions】



**Development** : Kajima Corporation

### ● Cantilever Removal Technology for the Former Myoko Bridge

*(Journal of Prestressed Concrete, Japan Vol.67, No.34;  
The 34th Symposium on Developments in Prestressed Concrete;  
Bridge and Foundation Engineering, April 2025)*

**Location** : Myoko City, Niigata Prefecture

#### Outline of Structure :

The cantilever removal technology is a method for safely dismantling PC box girder bridges by using erection girders installed on the bridge deck in the reverse order of construction. This technique involves dividing the superstructure into blocks, cutting and transporting them while suspended, and safely dismantling the bridge in mid-air. The target bridge was constructed in 1972, and a preliminary inspection prior to removal revealed corrosion and fracture in some PC steel materials. To ensure structural safety during removal, an investigation of the residual prestress in the main girder was conducted, and temporary external reinforcement cables were installed on the bridge deck. During the cantilever removal of this bridge, the stress conditions at each segment joint were measured in real time, and differences from the removal design were confirmed to ensure safe execution.