

JAPAN PREFABRICATED CONSTRUCTION SUPPLIERS AND MANUFACTURERS ASSOCIATION

KOJIMACHI NK BLDG., 2-14 2-CHOME, KOJIMACHI,
CHIYODA-KU, TOKYO 102-0083 JAPAN
TEL +81-3-5280-3121
FAX +81-3-5280-3127
URL <https://www.purekyo.or.jp>
E-mail: info@purekyo.or.jp

Access by subway

- 2-minute walk from the 4 Exit of Hanzomon Station on the Hanzomon Line

- ◇ HOKKAIDO Branch ◇ CHUBU Branch
- ◇ KANSAI Branch ◇ KYUSHU Branch

Note. Parking not available at KOJIMACHI NK Building



AN INTRODUCTION TO JAPAN PREFABRICATED CONSTRUCTION SUPPLIERS AND MANUFACTURERS ASSOCIATION

ASSOCIATION INFORMATION



ASSOCIATION OVERVIEW

Purpose of the Association

Our association was founded in January 1963 as an organization playing a central role in developing the industrial production of housing and promoting the modernization and rationalization of the construction industry. In January of the next year, under the joint jurisdiction of Japan's Ministry of Construction (currently the Ministry of Land, Infrastructure, Transport and Tourism) and the Ministry of International Trade and Industry (currently the Ministry of Economy, Trade and Industry), we became an incorporated association. Further, in October 2013, we got a new start as a general incorporated association that aims to promote the creation of a rich living environment and high quality social capital through research and development on prefab architecture as well as its construction and propagation.

Main Business Activities

In addition to a range of initiatives aimed at improving the quality of prefab architecture, such as developing technologies and human resources, the association's main business activities include supporting the provision of temporary emergency housing in the event of a disaster and offering recommendations to governments and others.

- ◆ Driving demand for high-quality prefabricated housing and buildings (prefab architecture) produced in factories
- ◆ Conducting surveys and research, developing technologies, and creating technical standards to ensure quality and improve performance of prefab architecture
- ◆ Conducting quality certifications, structural inspections, and qualification certifications to improve the quality of prefab architecture
- ◆ Initiatives to develop human resources and improve customer satisfaction in relation to prefab architecture
- ◆ Recovery and reconstruction in the event of a disaster, including support for provision of temporary emergency housing and promotion of provision of public housing for victims of disaster
- ◆ Promoting protection of the global environment through such things as promoting environmental action and the 3Rs (reduce, reuse, recycle) in prefab architecture
- ◆ Production of high-quality building and housing stock through such things as inspection training and determining earthquake resistance
- ◆ Offering recommendations to governments, the Japan Housing Finance Agency and others to promote high-quality prefab architecture

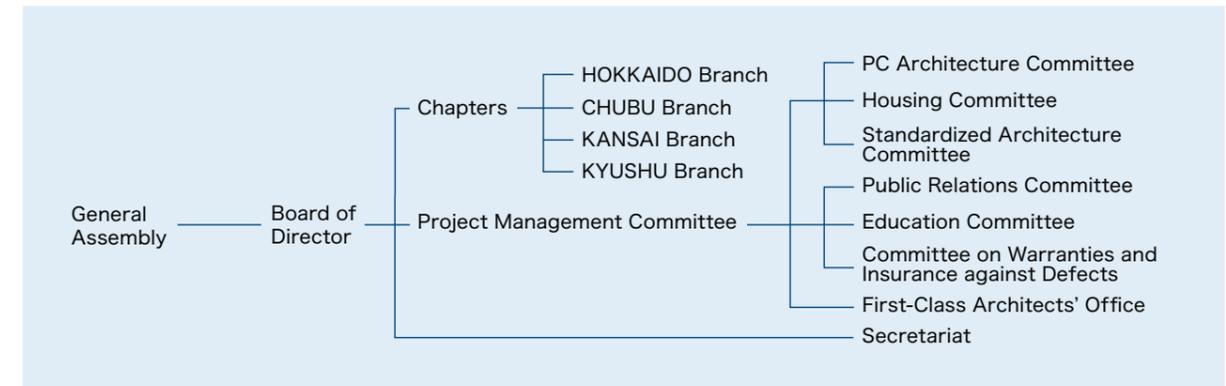
Behavior Charter of the Association

As leaders in the industry, companies with outstanding technical capabilities for creating high-quality spaces and environments will collaborate through the Association to conduct the following activities. The aim is to create a richer, more dynamic and sustainable society even in times of seriously declining birthrates and aging populations.

- ◆ **Considering safety and security**
In light of the current declining birthrates and aging populations, members will work to improve quality and performance of buildings and housing, in terms of safety, durability, energy efficiency, and comfort, to ensure the safety and security that underpin our lives. In addition to creating local infrastructure with outstanding disaster-related resilience and safety, members will also work toward rapid restoration of the lives of victims, and recovery and reconstruction of infrastructure in disaster-affected areas, in the event of a disaster.
- ◆ **Considering the global environment**
Members aim to help realize a sustainable society by actively promoting initiatives for carbon neutrality, a circular society, and coexistence with nature to ensure the beauty of the global environment is here for future generations.
- ◆ **Creating a "stock-type society" through construction of high-quality buildings and houses**
Through the advancement of prefab architecture technologies, members will provide high-quality buildings and housing with outstanding earthquake resistance, energy efficiency and other characteristics, and will create rich cityscapes. By improving the quality of existing buildings and housing through renovation and other methods, members also aim to contribute to the development of a "stock-type society" where high-quality building and housing stock can be used by successive generations, and to help realize a richer society.
- ◆ **Making international contributions**
Taking advantage of the outstanding production technologies of industrialized housing, members will expand their business activities in a range of countries to help improve housing conditions and address related issues. They also aim to help realize a globally cooperative society through such things as promoting technology exchange and participating in recovery efforts after disasters.
- ◆ **Developing human resources**
To develop a sustainable industry, members will work to improve and pass on the technologies and skills of prefab architecture. At the same time, they will implement education, guidance, and awareness activities to develop human resources able to respond to new needs that change with the times.
- ◆ **Implementing digital transformation (DX) initiatives**
Members aim to improve customer service, reform workstyles and improve productivity, while achieving sustainable development of the housing industry, by changing business processes through the use of AI, the IoT, and other new digital technologies.
- ◆ **Creating markets that meet new needs**
Members will work to create markets that meet the needs of the times through such things as creating rich communities and providing services that meet new needs arising from the changing values of residents.

Organizational Structure

The Association consists of six committees, a First-Class Architects' Office, four branches and a Secretariat.



Association member qualification and benefits

There are three types of Association membership; regular members, associate members, and supporting members.

◆ Regular membership

1. Companies engaged in production and sale of materials directly required in prefab architecture
2. Companies engaged in construction or sale of prefab architecture
3. Companies engaged in production and sale of construction machinery for prefab architecture

Category	Business performance criteria
Company type #2 on the left	Architecture for 300 or more houses, or 30,000㎡ or more of total floor area, each year
Company type #1 or #3 on the left	Equivalent to 300 or more houses, or 500 million yen or more of sales, each year

A company that satisfies any of the above requirements, and has business performance that meets the criteria on the right, is eligible to be a regular member of the Association. Regular members can attend and exercise voting rights at the General Assembly. They can also participate in committee activities.

◆ Associate membership

A company that satisfies any of the above requirements, but is not qualified to be a regular member, is eligible to be an associate member of the Association. Associate members can participate in committee activities.

◆ Supporting membership

A company or organization (representative of an organization that does not have corporation status) that endorses the purpose of the Association is eligible to be a supporting member of the Association. Supporting members can receive information about the Association, participate in workshops, seminars and other training, and interact with other members at New Year receptions and other events.

◆ Applying for membership



Companies wishing to become members must submit the prescribed application for approval from the Board of Directors.

To become a regular member, companies must be endorsed by two existing regular member companies.

To become an associate member, companies must be endorsed by two existing regular or associate member companies.

To become a supporting member, companies do not require an endorsement.

PREFABRICATED ARCHITECTURE FEATURES

What is Prefab Architecture?

Prefab Architecture



Prefab architecture is an architectural method that uses many more prefabricated components than traditional methods. Components are initially produced and processed in factories before final construction at the building site. There are three main types of prefab architecture.

Prefab housing, meaning detached houses and rental housing built as homes, includes a number of construction methods such as on-site assembly of wooden, iron and steel, or concrete panels, or on-site assembly of factory-made unit housing (modules).

PC architecture, meaning medium- and high-rise

buildings that are mainly concrete structures, is a construction method that uses on-site assembly of factory-made precast concrete components. It has wide application from medium- and high-rise buildings through to skyscrapers.

Standardized architecture, meaning buildings that use lightweight steel frames as their main structural components, is a construction method for uniform production of consistent and standardized components in factories. The resulting assembled houses or modular houses have wide application from temporary housing to permanent buildings.

Prefab Architecture Features

- ### Uniform and High-Precision Quality

Key building materials are produced under rigorous quality controls in factories with state-of-the-art technologies including computers and robots to create housing with uniform and high-precision quality.
- ### High-Quality Construction

Much of the on-site work is performed in a factory, and as a result, the building materials are consistent and standardized, which makes possible simple yet high-quality construction.
- ### Substantial Reduction in Construction Time

Since emphasis is placed on factory production, there is little reliance on the skills of workers, as in the case of conventional construction methods. On-site work is reduced and construction times are greatly shortened. The ability to put a building into use quickly, depending on its intended use, is one of the benefits of prefab architecture.
- ### Cost Reduction

The factory production method clarifies cost management, and prices are always set appropriately. In addition, extensive streamlining efforts are made in all stages from materials purchasing to production equipment and on-site construction, resulting in lower total costs.
- ### Added-Value Technology and Performance

Factory production makes possible added-value technologies and performance that are difficult to achieve at the construction site such as special processing methods and painting methods.



High-Quality, High-Performance Buildings

Association members provide high-quality, high-performance buildings.

Prefab Housing

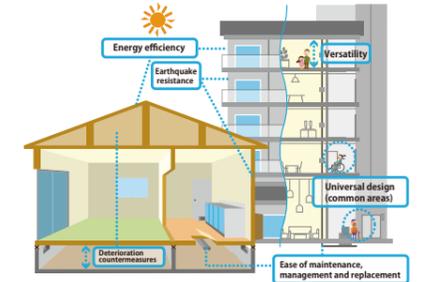
Prefab housings leads the industry in terms of the long-term high-quality housing and net zero energy houses (ZEH) that the Japanese government is promoting.

Percentage of detached houses that are long-term high-quality housing

85.5% of houses provided by member companies have obtained certification as long-term high-quality housing (fiscal 2021) ※ (National target for 2025 is 20% of housing)

What is long-term high-quality housing?

Long-term high-quality housing is housing that has been accredited by the relevant government agency according to the Act on the Promotion of Dissemination of Long-life Quality Housing. It has outstanding levels of earthquake resistance, durability, and universal design, it has a maintenance and management plan, and it can be used in good condition for a long period of time.



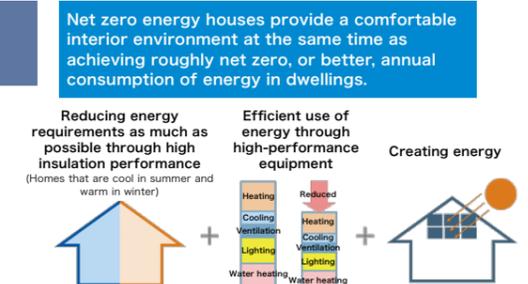
Source: "Certification System Overview Pamphlet (New Construction)," Ministry of Land, Infrastructure, Transport and Tourism website

Percentage of newly constructed detached houses that are net zero energy houses

64.9% of houses provided by member companies are net zero energy houses (fiscal 2021)

What are net zero energy houses (ZEH)?

Net zero energy houses (ZEH) aim to achieve net zero outlays on primary energy consumption in dwellings through adoption of thermal insulation structures for external walls and windows, etc., high efficiency equipment systems, and renewable energy.



Source: Ministry of the Environment website

PC Architecture

PC architecture provides a range of high performance features required of structures, including disaster resistance, faster construction times, and quieter, labor-saving, resource-saving operations at construction sites. These features help address construction worker shortages and contribute to achieving the Sustainable Development Goals (SDGs).

- Various technologies have been developed, including methods for joining precast components, to give PC architecture the same or better structural characteristics as reinforced concrete buildings that are created on-site. As a result, PC architecture provides a high level of impact resistance to earthquakes, which gives it **outstanding earthquake resistance**. Excluding the effects of ground deformation and minor damage, there have been no reports of damage to precast concrete buildings from past earthquakes.
- With the main structural components being non-combustible steel-reinforced concrete, PC architecture can minimize damage in the event of a fire. Fires are a frequent secondary disaster related to earthquakes and

other disasters, but precast concrete buildings exhibit **outstanding fire resistance** that can be a useful local disaster mitigation measure that prevents fires from spreading. Even exposure to flames has no impact on the durability of these structures in the event of a normal fire.

- Steel-reinforced concrete structures have **excellent structural safety** in terms of external forces, such as compressive force and impact loads. They have good strength against typhoons, tornadoes, snow and other external pressures, and demonstrate resistance to all manner of disasters.
- Steel-reinforced concrete structures have longer lifespans, and are less subject to deterioration, than other structures. Precast components in particular have a lower frequency of cracking when dry, compared to on-site poured concrete, because they use a dry consistency concrete with little water. They enable creation of a structural frame with excellent resistance to neutralization and **outstanding durability** due to their high density.

PC ARCHITECTURE COMMITTEE

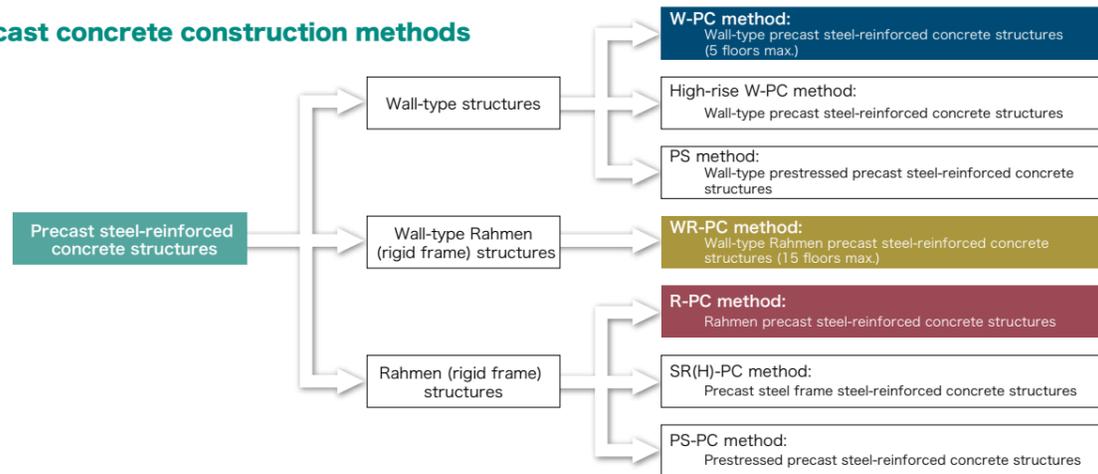


The PC Architecture Committee comprises 70 member companies that provide medium- and high-rise buildings using precast concrete construction methods (as of December 1, 2022).

The committee operates four inspection and certification systems for design, component manufacturing, and

construction management of buildings constructed for various purposes using one of the precast concrete construction methods. It also compiles and publishes technical documents and works to ensure or improve the quality of precast concrete buildings through reliable process management and engineer development.

1 Precast concrete construction methods

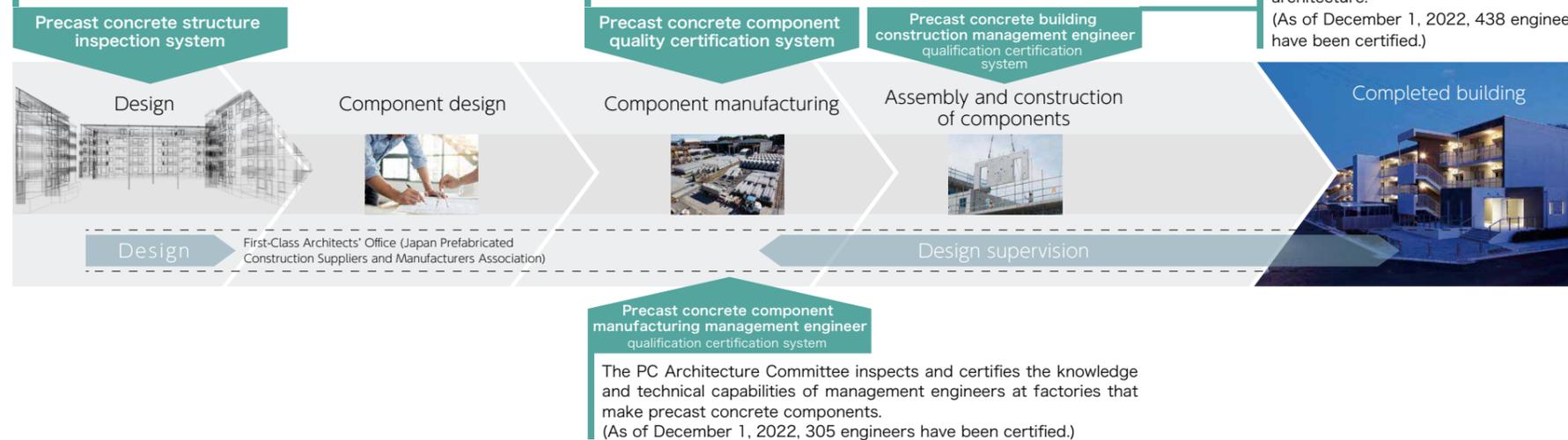


2 Four inspection and certification systems for design, component manufacturing, and construction management

With enactment of the Building Standards Act and the Housing Quality Assurance Act, the Association created an inspection system for buildings constructed using precast concrete components, and began structural inspections of precast concrete buildings.

The PC Architecture Committee inspects and certifies the performance and quality of precast concrete components at the factories where they are made. (As of December 1, 2022, 79 factories in Japan and 2 factories overseas have been certified.)

The PC Architecture Committee inspects and certifies the knowledge and technical capabilities of management engineers involved in construction management of precast concrete architecture. (As of December 1, 2022, 438 engineers have been certified.)



3 Three typical precast concrete construction methods proposed according to architectural conditions and intended use

Wall-type precast construction method

W-PC method

Low- and medium-rise housing complexes

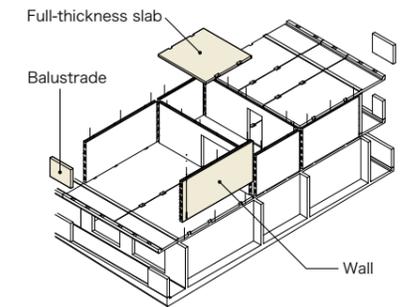
This construction method produces box-type structures comprising precast concrete components (wall, floor and ceiling panels) manufactured in factories. Components are assembled on-site by crane, joined by welded steel reinforcing rods and mechanical joints, and integrated into a single unit with joining concrete.

Features

- Wall-type structures provide living spaces without the intrusion of internal pillars or beams.
- Fixtures are attached to the precast concrete components, providing outstanding water resistance.
- On-site concrete pouring is minimized, which reduces construction times.

Scope

- Floors: 5 or fewer
- Eave height: 20 m or less
- Floor height: 3.5 m or less



Wall-type Rahmen (rigid frame) precast construction method

WR-PC method

Medium- and high-rise housing complexes

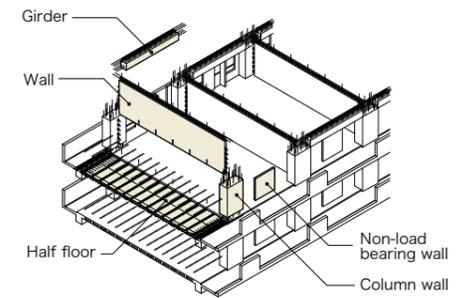
This construction method employs single wall columns and precast concrete beams in the girder direction, and the same precast concrete components in the beam direction, with composite floors using voided slabs or half floor slabs for the floors and ceilings. Wall columns, walls and beams are joined to the floor and integrated into a single unit by on-site poured steel-reinforced concrete.

Features

- A lack of beam forms in party walls creates a cleaner layout compared to normal Rahmen structures. Utility sleeves can also be created in the wall columns.
- Internal floors use composite floor panels that ensure sufficient beam depth, which enables reduced floor height.

Scope

- Floors: 15 or fewer
- Eave height: 45 m or less



Rahmen (rigid frame) precast construction method

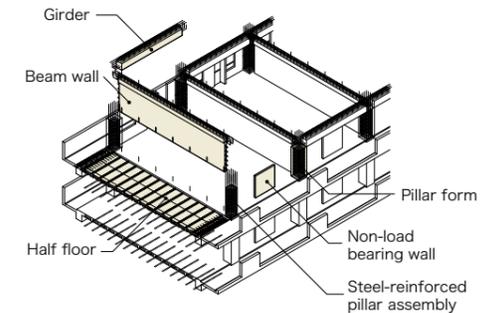
R-PC method

High-rise housing complexes

This construction method uses precast concrete components (pillars, beams, walls and floors), depending on the situation, joined by on-site poured steel-reinforced concrete. Rahmen reinforced concrete buildings are partially precast, which gives this method comparatively fewer restrictions in planning compared to the WR-PC method.

Features

- With characteristics of both conventional methods and precast concrete methods, this method offers considerable freedom in planning.
- Use of precast concrete components for the exterior of dwellings (walls, hallways, balconies) achieves outstanding water resistance and durability.



4 Compilation and publication of technical documents



HOUSING COMMITTEE



The Housing Committee comprises 20 prefab housing manufacturers as of December 1, 2022. Playing a leading role in the industry, it engages in activities with the aim of creating high quality living spaces and residential environments and realizing a rich society full of vitality, through both construction and R&D of industrialized housing. It also strives to create an axis for joint efforts among the member companies to quickly adapt to government policies and changes in the environment surrounding the housing industry.

In October 2021, the Housing Committee formulated and announced, and is currently implementing, the Housing Life Improvement Plan 2025, which is a 5-year medium-term plan for the committee in line with the Basic Housing Policy approved by the Japanese Cabinet in March 2021.

1 Activities of the Housing Committee

① Efforts in further ensuring safety and security, advanced technology and performance improvement in housing

The Housing Committee is working on developing advanced housing and its technology, and promoting its



spread. In addition, it proactively utilizes various performance evaluation indices, such as housing performance labeling and Building Energy-efficiency Labeling System (BELS), to display advanced performance of industrialized housing in an easy-to-understand manner while also improving performance. It also prepared, and updates, the Disaster Response Manual (Housing Committee Edition) to enable a rapid response to the large-scale disasters that are occurring with increasing frequency recently.

② Developing “stock-type society” of high-quality housing

The Housing Committee is working to provide high-quality new housing, through certification of long-term high-quality housing and other measures, to promote utilization of housing stock from a long-term perspective. It is promoting the flow of high-quality existing housing through appropriately managed maintenance of existing housing, promoting renovation to maintain and improve its performance quality, and other measures such as certification of inspection engineers.

③ Opening up new initiatives and technologies in housing in response to the needs of society and the times

The Housing Committee is working to promote new lifestyles, such as multi-regional living, digital transformation, and sharing of information between committee members to help realize new dwellings for the “new normal” and digital transformation.

④ Contributing toward raising the level of housing life through environmental friendliness in housing and town planning

In response to the Japanese government’s goal of carbon neutrality by 2050, efforts to realize a decarbonized society are accelerating. The Housing Committee aims to increase use of net zero energy houses (ZEH) at the dwelling stage, while driving decarbonization through the housing life cycle at the factory production, transportation, and construction



stages. It will also implement initiatives to help create a circular society and encourage coexistence with nature.

⑤ Contributing to improvement of international housing and living environments

In addition to actively disseminating information internationally about Japan’s industrialized housing technologies, living environment technologies, and activities of the Japan Prefabricated Construction Suppliers and Manufacturers Association, the Housing Committee also shares overseas initiatives by member companies with the aim of contributing to improved living environments globally.



⑥ Developing human resources and enhancing information dissemination on housing

The Housing Committee aims to improve the skills of members through various types of workshops and symposiums. To create better housing and an improved living environment, it seeks to communicate with various stakeholders, such as residents, by actively providing appropriate information. It also carries out activities such as facility tours, and reporting on the results of its surveys and research.

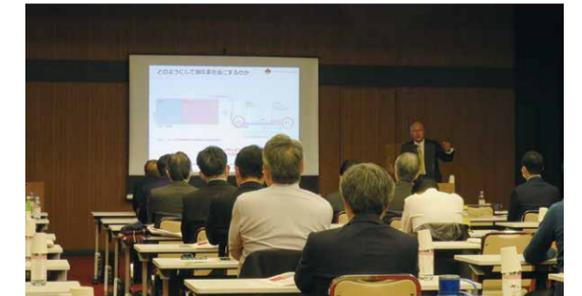
1) Providing training courses and certification systems

- Prefab Architecture Meister Certification System
- Prefab Housing Inspection Engineer Course
- Prefab Housing Renovation Coordinator Course

2) Holding seminars and symposiums

(Housing Committee seminars)

These seminars offer opportunities for mutual information exchange and interaction between member companies with the aim of sharing the latest government policies on housing and studying contemporary issues. (Held once a year)



(Environmental symposiums)

These symposiums offer opportunities to provide the latest information on the environment and homes, to report on progress toward environmental targets, and to report case studies of member company initiatives for the environment. (Held once a year)

(Household and town planning symposiums)

These symposiums offer opportunities to exchange information on research activities, and report case studies of initiatives, related to the state of residential developments in an age of declining birthrates, aging populations, and declining populations. (Held once a year)



3) Announcing survey and research results

- Method for determining earthquake resistance of industrialized housing
- Supply service management standards for prefab housing
- Maintenance guidelines for long-term high-quality housing
- Design guidelines for favorable living environments
- Proposal for townscape scenery appraisal
- Guidelines for replacement components for housing

STANDARDIZED ARCHITECTURE COMMITTEE



1 Introduction to the Standardized Architecture Committee

The Standardized Architecture Committee comprises member companies (14 companies as of December 1, 2022) involved in manufacturing, designing, selling or leasing assembled houses or unit houses constructed with prefab construction methods. With 50-plus years of history and achievements, the committee is working to develop technologies, and improve construction and quality management, to meet the diversifying needs and applications of buildings associated with the rapid development and changes of the times.

Assembled houses and unit houses have the benefits of reduced variability of quality and high-quality construction achieved through uniform production of consistent and standardized structural components in factories. They also exhibit outstanding durability, airtightness, thermal and sound insulating properties, and comfort, while achieving safety through earthquake and fire resistance.

Taking advantage of the properties of this system architecture, these houses have diverse and wide application, from temporary housing to permanent buildings, as offices, shops, warehouses, event venues, and education, medical, or welfare facilities. Temporary housing, in particular, will continue contributing to society going forward through reuse and recycling that addresses resource and environmental issues.



2 Disaster-related initiatives (construction of temporary emergency housing in the event of a disaster)

One of the activities of the Standardized Architecture Committee is construction of temporary emergency housing in the event of a disaster, which is a public service it offers to ensure the safety and livelihood of disaster victims. Committee member companies operate factories and depot centers at 176 locations nationwide (as of April 30, 2022), creating a temporary emergency housing supply system that can respond to disasters anywhere in Japan.

Member companies understand the importance of developing a construction system that is able to provide temporary emergency housing for people impacted by disasters as quickly as possible. They are therefore implementing initiatives to verify the processes of temporary emergency housing construction, through experience of various natural disasters around Japan, and to review specifications and planning for buildings. Member companies are also promoting the use of digital transformation (DX) as below to enable construction of temporary emergency housing to begin quickly after a disaster occurs, to ensure that residents of that housing can maintain favorable living conditions, and to achieve high-quality construction.

- Creation of simple site plans based on data from the Global Navigation Satellite System (GNSS)
- Support for creating layout plans using artificial intelligence (AI) technologies
- Integrated operation, from design to construction,



Use of a layout plan zoning support system

maintenance and management, using Building Information Modeling (BIM)

- Manpower and labor savings in on-site work and management through use of smart glasses

There is a high probability of large-scale disasters occurring in the future, including earthquakes in the Nankai Trough and directly under Tokyo. The Association has entered into agreements with 47 prefectures, and 12 cities designated for relief implementation, to construct temporary emergency housing in the event of a disaster (as of December 1, 2022). To continue fulfilling its roles and responsibilities as a signatory to these agreements, and create systems for rapid and smooth provision of temporary emergency housing even during normal times, it works every year to compile materials on construction of temporary emergency housing, and maintain close relationships with the various government ministries and agencies, the prefectural governments and others through visits and constructive discussion.

3 Initiatives for ensuring the safety and quality of temporary buildings

The Standardized Architecture Committee cooperated in creating the draft of, and publishing, the Japanese Industrial Standard JIS A 3304 "Standard of structural design systems on the prefabricated temporary houses." This standard defines structural design systems and testing methods for the main structural components that ensure the safety and quality of temporary buildings provided by the committee.

To ensure the safety of buildings through appropriate storage and inspection of reusable structural components, the committee also published the 4th edition of "Operation Management Guidelines and Commentary on Reusable Steel Frames" for reusable buildings on April 1, 2022. It also complies with and implements these guidelines.

As part of this, the committee is helping to address resource and environmental issues while ensuring safety. This includes the appointment and renewal of a Reusable Steel Frame Component Operation Manager, the improvement of building knowledge among individual committee members, and a yearly workshop geared toward taking examinations for steel frame manufacturer and management engineers.

4 Initiatives for desktop exercises in construction of temporary emergency housing

In the event of a disaster, a system that provides a rapid and smooth initial response must be established, and a large volume of temporary emergency housing must be constructed. This requires the development and maintenance of a collaborative supply system where each member company's engineers and public relations people work according to a common standard.

As part of its normal activities, and with the cooperation of member companies, the Standardized Architecture Committee therefore uses an actual site to



Desktop exercises (virtual training)



Regional response drills (virtual training)

conduct virtual training once a year (desktop exercises in construction of temporary emergency housing). The purpose is to develop a system that enables rapid and smooth construction of temporary emergency housing, with sharing of the latest information and establishment of centralized construction plans, based on the past experience and achievements of the committee.

To enable local member companies to quickly respond by constructing temporary emergency housing no matter where a disaster occurs throughout Japan, temporary emergency housing construction response drills are also conducted locally.

5 Participation in prefectural emergency drills

The Association participates in comprehensive emergency drills held by each prefecture. These drills are large-scale comprehensive events where local residents, governors and other relevant local government parties participate. They include exhibits of temporary emergency housing models, and display panels with photos of the most recently constructed temporary emergency housing, as part of efforts to provide greater information on temporary emergency housing.



Participating in emergency drills

EDUCATION COMMITTEE



The Education Committee engages in the following activities with the purpose of improving the quality of member company employees in the fields of sales, production, engineering, construction, after-sales service, reform and others.

1 Certifying prefab housing coordinator (PHC) qualifications

In contemporary times, housing business employees require advanced knowledge covering diverse fields from architectural regulations in housing business to financial planning. To meet these demands of the times, a system for certifying the qualifications of housing business employees as prefab housing coordinators (PHC) was set up in 1989 and training courses and certification exams are being held on a nationwide scale. As of the end of March 2022, a total of 35,082 qualified persons have been registered. Educational texts have also been created for the purpose of providing general knowledge on housing, and they are revised roughly once every two



years, with the latest edition (16th edition) being published in April 2023.

2 Holding housing industry CS conventions

Housing industry CS conventions have a long history, starting from 1976 with the TQC Convention (later renamed the TQM Convention), with a total of 47 being held through fiscal 2022. In a typical year, examples of CS activities of each member company are announced and timely special lectures are held regarding activities for improving customer satisfaction in different business fields, which contribute greatly to the expansion and improvement of CS activities in each member company.

3 Holding courses on improving prefab architecture quality

Courses to improve prefab architecture quality have been held annually in Tokyo and other localities starting from 2001. Persons in charge of practical business and leaders active on the front lines of each field (production, design of individual residences, construction, and after-sales service) learn the basics of quality control, conduct research on issues in each field, and exchange information between themselves, according to the theme chosen each year. The courses contribute greatly to improved quality of prefab architecture.

4 Conducting questionnaire surveys on trustworthy residential planning

From 1994, the Education Committee has been conducting questionnaire surveys of clients centering around the performance of sales reps. Questionnaires are mailed to 1,200 clients who have purchased newly built homes from the nine prefab housing manufacturers among the member companies and lived in them for an average of one year, and their responses are received. Based on the results of these surveys, the Association works to improve the prefab housing coordinator system and raise the level of the business managers' performance.

COMMITTEE ON WARRANTIES AND INSURANCE AGAINST DEFECTS



On the basis of the Act on Assurance of Performance of Specified Housing Defect Warranty (Housing Defect Warranty Fulfillment Act), which took effect on October 1, 2009, any business supplying newly built housing has an obligation to ensure its financial ability to fulfill its responsibilities toward defect warranties by depositing security funds or taking out insurance.

As an "organization supplying housing of high quality," our association is treated as a specified organization (or approved organization) by the housing defect warranty liability insurance corporations (five companies) specified by the Minister of Land, Infrastructure, Transport and Tourism, and when our member companies take out insurance to ensure their financial ability, a committee has been set up to promote defect warranty insurance for the purpose of appropriate planning and management of measures that must be taken.

1 The main tasks of the Committee to promote defect warranty insurance include

- ① Planning and management of matters necessary for ensuring financial ability through defect warranty liability insurance (group insurance)
- ② Creating standards for ensuring quality of housing making use of group insurance systems
- ③ Training group inspectors certified as the specified (approved) organizations, and other matters

2 The advantages of qualifying for specified group (certified group) insurance include

- ① Discounted insurance premiums
When our member companies and their affiliated companies apply for group insurance through the offices of our organization, they can receive a discount*1 on insurance premiums compared to applying for general housing insurance.

② For group insurance, inspection is implemented internally

When applying for general housing insurance, two on-site inspections conducted by insurance corporations are necessary (when arranging basic reinforcement and upon completion of roof), but when applying for group insurance, it is possible to have the basic reinforcement arrangement inspection done by group inspectors from one's own company whose qualifications have been certified by the group.*2

Having one's own company's group inspectors conduct the basic reinforcement arrangement inspection provides reduced fees for the first inspection and the possibility of smoother progress management because schedule adjustment for inspectors from insurance inspector organizations becomes unnecessary.

※1: For details on the group insurance discount and discount rates, enquire with our association.

※2: In some cases, group self-inspection may not be possible. In addition, onsite inspections are not required if the housing comes with housing performance evaluation at construction.

③ Flow chart



ASSOCIATION HISTORY

Year	Association History	Disaster Response
1963	<ul style="list-style-type: none"> Japan Prefabricated Construction Suppliers and Manufacturers Association founded Six committees established (Public Housing Component Committee, Housing Committee, General Construction Committee, Materials Committee, Equipment Committee, and Construction Machinery Committee) 	
1964	<ul style="list-style-type: none"> Public Relations Committee established 	
1965	<ul style="list-style-type: none"> Equipment Committee and Construction Machinery Committee merged and Equipment and Machinery Committee established 	<ul style="list-style-type: none"> After large Niigata earthquake, mass-produced public housing constructed (414 units) to aid reconstruction
1966	<ul style="list-style-type: none"> Public Housing Component Committee changed name to Public Housing Committee General Construction Committee, Materials Committee and Equipment and Machinery Committee merged and General Committee established 	
1967	<ul style="list-style-type: none"> Medium- and High-Rise Housing Committee established 	
1969	<ul style="list-style-type: none"> Chapters established in Kansai, Chubu, and Hokkaido 	
1971	<ul style="list-style-type: none"> General Committee disbanded and separate Assembled Temporary Building Department established Medium- and High-Rise Technical Committee established 	
1972	<ul style="list-style-type: none"> Chapter established in Kyushu Assembled Temporary Building Department changed name to Standardized Architecture Committee 	
1973	<ul style="list-style-type: none"> Education Department and Service Department established 	
1975	<ul style="list-style-type: none"> Precast concrete construction welding qualification certification system launched 	<ul style="list-style-type: none"> Agreement concluded with Kanagawa Prefecture to construct temporary emergency housing in the event of a disaster
1978		<ul style="list-style-type: none"> Survey of damage conducted after Miyagi Offshore Earthquake
1979		<ul style="list-style-type: none"> Agreements concluded with Tokyo, Shizuoka Prefecture, and Aichi Prefecture to conduct emergency response operations in the event of a disaster
1980	<ul style="list-style-type: none"> First-Class Architects' Office established 	<ul style="list-style-type: none"> Agreement concluded with Gifu Prefecture to conduct emergency response operations in the event of a disaster
1983		<ul style="list-style-type: none"> After the October 3 volcanic eruption on Tokyo's Miyake Island, temporary emergency housing (total of 340 units) constructed for disaster victims in the Kozu and Ako-Shitasabi districts of the island Agreement concluded with Chiba Prefecture to construct temporary emergency housing in the event of a disaster
1989	<ul style="list-style-type: none"> Precast concrete component quality certification system launched 	
1990		<ul style="list-style-type: none"> After a tornado destroyed homes in Chiba's Mobarra City, temporary emergency housing (14 buildings, 28 units) constructed for disaster victims in the city's Takashi district
1991		<ul style="list-style-type: none"> After a volcanic eruption of Mount Unzen's Fugen-dake peak, temporary emergency housing (1,277 units) constructed
1993		<ul style="list-style-type: none"> After the July 12 Okushiri Earthquake in Hokkaido, temporary emergency housing (408 units) constructed on Okushiri Island
1994		<ul style="list-style-type: none"> After the January 17 Great Hanshin Earthquake (Kobe earthquake), temporary emergency housing (39,526 units) constructed, including 5,620 by the Housing Committee and 33,906 by the Standardized Architecture Committee
1997		<ul style="list-style-type: none"> Promoting appropriate reuse of temporary emergency housing used for the Great Hanshin earthquake, prefab (standardized) buildings constructed overseas (Peru) for the first time under the Grant Assistance for Grassroots Projects scheme, part of Japan's Official Development Assistance (ODA) - 192 units purchased by Hyogo Prefecture Agreements concluded with all prefectures to construct temporary emergency housing in the event of a disaster
1998		<ul style="list-style-type: none"> Temporary emergency housing, used for the Great Hanshin earthquake, leased to the Azores, Portugal (100 units) and to China, Palau and others (about 400 units) After landslides caused by heavy rains and Typhoon Vicki, temporary emergency housing constructed in Tochigi Prefecture (3 units) and Nara Prefecture (21 units)
1999		<ul style="list-style-type: none"> Temporary emergency housing constructed after heavy rainy season rains in Hiroshima Prefecture (30 units), after Typhoon Bart in Kumamoto Prefecture (13 units) and after floods in Iwate Prefecture (30 units)

Year	Association History	Disaster Response
2000	<ul style="list-style-type: none"> Precast concrete structure and building inspection system launched 	<ul style="list-style-type: none"> After a volcanic eruption of Hokkaido's Mount Usu, temporary emergency housing (734 units) constructed, with unit houses being used for the first time alongside assembled houses After heavy rains centered on the Tokai region, temporary emergency housing constructed in Gifu's Keinan region (13 unit houses), and after the Tottori Earthquake, temporary emergency housing constructed in Tottori Prefecture (28 units) and Shimane Prefecture (9 units) After landslides in Niiijima Island, caused by an earthquake in the waters off Niiijima and Kozushima Islands associated with volcanic eruptions in the Izu Islands, temporary buildings constructed for Wakago Elementary School, Niiijima (unit houses)
2001		<ul style="list-style-type: none"> After heavy rains in the western part of Kochi Prefecture, temporary emergency housing (10 units) constructed
2003		<ul style="list-style-type: none"> After the July 26 earthquake in northern Miyagi Prefecture, temporary emergency housing (162 units, 10 locations, 5 towns) constructed
2004		<ul style="list-style-type: none"> After heavy rains in Niigata Prefecture and Fukui Prefecture, Typhoon Namtheun, Typhoon Meari, Typhoon Tokage, and the October 23 Chuetsu Earthquake, temporary emergency housing constructed (total of 3,950 units)
2005	<ul style="list-style-type: none"> Precast concrete building construction management engineer qualification certification system launched 	<ul style="list-style-type: none"> After the March 20 Fukuoka Earthquake and Typhoon Nabi, temporary emergency housing constructed (total of 273 units)
2006	<ul style="list-style-type: none"> Medium- and High-Rise Housing Committee changed name to PC Architecture Committee 	<ul style="list-style-type: none"> After the March 25 Noto Earthquake, temporary emergency housing constructed (334 units)
2007		<ul style="list-style-type: none"> After Typhoon Man-yi and heavy rains, and the July 16 Chuetsu Offshore Earthquake, temporary emergency housing constructed (total of 1,231 units)
2008	<ul style="list-style-type: none"> Insurance Operations Department established in response to enactment of the Act on Assurance of Performance of Specified Housing Defect Warranty 	<ul style="list-style-type: none"> After the June 14 Iwate-Miyagi Nairiku Earthquake, temporary emergency housing constructed (71 units)
2009	<ul style="list-style-type: none"> Association office relocated to M&C Bldg., 3-13, 2-Chome, Kandaogawamachi, Chiyoda-ku, Tokyo 	<ul style="list-style-type: none"> After Tropical Storm Etou, temporary emergency housing constructed in Hyogo Prefecture (42 units)
2011		<ul style="list-style-type: none"> After the March 11 Great East Japan Earthquake, temporary emergency housing constructed in Iwate Prefecture, Miyagi Prefecture, Fukushima Prefecture, Tochigi Prefecture, Chiba Prefecture, and Nagano Prefecture (total of 43,260 units consisting of 14,546 units by the Housing Committee and 28,714 by the Standardized Architecture Committee) After Tropical Storm Talas, temporary emergency housing constructed in Nara Prefecture and Wakayama Prefecture (total of 101 units)
2012	<ul style="list-style-type: none"> Precast concrete component manufacturing management engineer qualification certification system launched 	<ul style="list-style-type: none"> After the heavy rains across northern Kyushu, temporary emergency housing constructed in Fukuoka Prefecture (25 units)
2013	<ul style="list-style-type: none"> Association changed from an incorporated association to a general incorporated association 	<ul style="list-style-type: none"> After the heavy rains across Yamaguchi Prefecture and Shimane Prefecture, temporary emergency housing constructed in Yamaguchi Prefecture (40 units) After Typhoon Danas, temporary emergency housing constructed in Kagoshima Prefecture (25 units) After Typhoon Wipha, temporary emergency housing constructed in Tokyo (46 units) After the Great East Japan Earthquake, public housing designed and supervised (1,095 units, 12 housing estates over 3 years)
2014		<ul style="list-style-type: none"> After the November 22 Nagano Earthquake, temporary emergency housing constructed in Nagano Prefecture (35 units)
2015		<ul style="list-style-type: none"> After the May 29 volcanic eruption of Mount Shindake on Kuchinoerabu Island, temporary emergency housing constructed in Kagoshima Prefecture (27 units)
2016		<ul style="list-style-type: none"> After the April 14 and 16 Kumamoto Earthquakes, temporary emergency housing constructed in Kumamoto Prefecture (3,605 units) After Typhoon Lionrock, temporary emergency housing constructed in Iwate Prefecture (171 units)
2018		<ul style="list-style-type: none"> After the July heavy rains, temporary emergency housing constructed in Okayama Prefecture, Hiroshima Prefecture, and Ehime Prefecture (total of 348 units) After the September 6 Hokkaido Eastern Iburi Earthquake, temporary emergency housing (208 units) and social housing (144 beds) constructed in Hokkaido Prefecture
2019	<ul style="list-style-type: none"> Prefab Architecture Meister Judging Committee established 	<ul style="list-style-type: none"> After Typhoon Hagibis, temporary emergency housing constructed in Miyagi Prefecture, Nagano Prefecture, and Ibaraki Prefecture (total of 313 units), and social housing (76 beds) constructed in Saitama Prefecture With the partial revision of the Disaster Relief Act, started to renew agreements on construction of temporary emergency housing in the event of a disaster with prefectures in which cities designated for relief implementation are located
2021		<ul style="list-style-type: none"> Actively provided ongoing proposals for disaster reconstruction projects and published Public Housing Reconstruction Using Precast Concrete Construction Methods as a summary of the 10 years since the Great East Japan Earthquake, and publicized precast concrete construction to relevant bodies
2022	<ul style="list-style-type: none"> 60th anniversary commemoration ceremony held for the Association Published 60-year chronology of the Association 	