

FOR IMMEDIATE RELEASE

**Our first effort to provide prefabricated house building materials to New Zealand
Prototype standalone house constructed
in cooperation with a local construction company**

Technical guidance provided remotely from Japan as a new initiative in the coronavirus crisis

January 8, 2021, New Zealand – In the Waikato region of New Zealand, Panasonic Homes Co., Ltd. (hereinafter, “Panasonic Homes”) has been promoting an initiative to construct a prototype standalone house, using its prefabricated house building materials, in cooperation with Mike Greer Commercial Ltd. (hereinafter, “MGC”), New Zealand’s largest privately owned residential building company.

On January 22nd, 2020, the prototype standalone house and all landscaping will be successfully completed. The completed house is a 3 bedroom single storey building, constructed using Panasonic Homes’ unique large panel construction method (F method). The installing of the envelope started on September 29, 2020, and all of the construction was completed in about three months. The approximately three-month construction period is about four months shorter at maximum than that required by the conventional housing construction method generally used in New Zealand. After the completion of the prototype standalone house, as well as others currently being worked on, Panasonic Homes will progress verification of housing specifications and construction methods, targeting growth in the New Zealand market.

When the construction work started, Panasonic Homes’ engineers were unable to enter New Zealand due to COVID-19 travel restrictions. Accordingly, we provided technical guidance remotely from Japan to the construction staff of MGC, using a remote guidance app produced by XMRealty AB.

With this initiative, the installing of the weathertight envelope, such as pillars, beams, and the roof, was completed in just three days. After that, the New Zealand Government approved our initiative and issued special entry visas to our engineers, who later arrived at the construction site. They performed an inspection and found no major quality issues in the construction work, which was guided remotely. This was the first time Panasonic Homes has provided prefabricated housing materials and remote technical guidance for housing construction in an overseas country.



Photo of the prototype standalone house, taken from outside

■ Building outline

Location	Te Kauwhata, Waikato region, New Zealand
Total floor area	88 m ²
Design	Panasonic Homes Co., Ltd.
Construction	Mike Greer Commercial Ltd.
Building	One-story standalone house built by a large panel construction method (F method)
Room Layout	3 bedrooms, 1 living and dining area, a bathroom including a toilet
Construction period	The installing of the envelope started : September 29, 2020, Completion: January 22, 2021 (tentative)

■ Remote provision of technical guidance

- **Installing the envelope has been completed in about three days (September 29 to October 1, 2020)**

The building materials shipped from Panasonic Homes' Koto Factory in Japan in July 2020 reached New Zealand about one month later - at the end of August - on a vessel which departed from Nagoya. Because Panasonic Homes' engineers were unable to enter New Zealand due to the travel restrictions put in place at that time, we changed the plans for providing construction guidance from on-site to remote. For this purpose, Panasonic Homes decided to use XMReality, a remote guidance app for smartphones.

Using this app, guiding remotely for the first time ever, panel assembly (installation of pillars, beams, and the roof) for the prototype detached house was completed within a three-day schedule. The construction guidance was provided for three different processes; preparation, construction, and inspection / correction, by visually checking the on-site situation displayed on the screen in real time via the app. Although this was only the first time Panasonic Homes has used this guidance method, the construction work was successfully completed by MGC' employees. Later, Panasonic Homes' engineers performed an inspection at the site and found no defects in the work.



Construction in progress at the site



Technical guidance provided remotely from Japan



Technical guidance provided using a smartphone app

©See the video here for the construction work at the site.

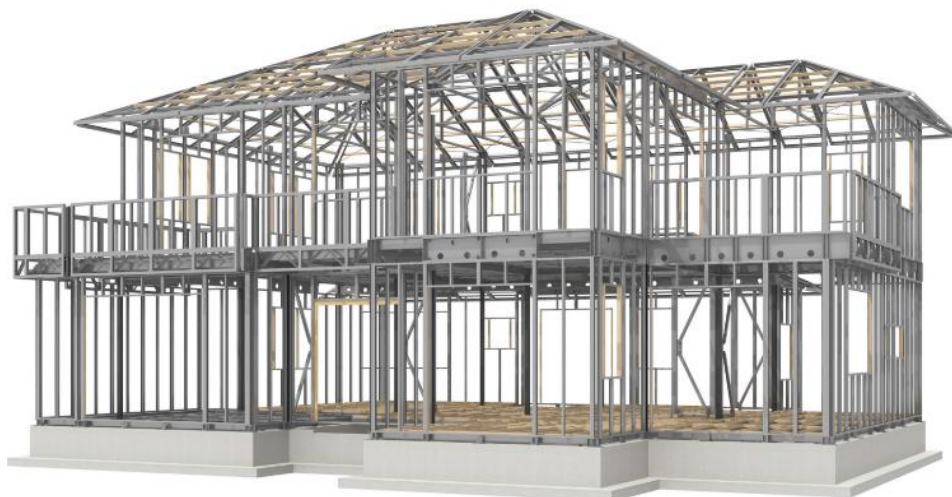
<https://youtu.be/6tqykvSodi4>

■ Large panel construction method (F method)

Panasonic Homes' large panel construction method is used to build detached houses and rental apartments. In this method, panels for various elements, such as external walls, floors, and the roof, are fastened firmly using tough bolts and joint metal fittings and integrated as one strong block body. It is a monocoque structure, which uses its entire structure to support the loads applied to it.

A building constructed by this method receives external forces from typhoons and earthquakes using its entire outer shell and distributes the stresses equally throughout the structure, which leads to excellent earthquake resistance.

In this construction method, buildings are designed using 900 mm modules. Housing fixtures, such as sashes, and ventilation ports are integrated beforehand at a plant into large panels for external walls and other construction elements. These large panels are carried into a construction site and assembled accurately and quickly with a crane and other machinery. This method successfully helps achieve labor saving at construction sites.



■ **Background of the effort to provide housing materials to build a prototype detached house in New Zealand**

Panasonic Homes' initiative to construct a prototype house in New Zealand started in 2018, when the government established a national project, the Kiwi Build Project (hereinafter, "KBP"), to solve the short supply of housing in the country, and it invited overseas prefabricated housing manufacturers to participate in the project. In response to this invitation, Panasonic Homes joined the KBP with the aim to start the provision of housing materials produced by Panasonic Homes overseas. After that, post a change of the country's government, the KBP was integrated into the wider Kainga Ora Prefabrication Project (hereinafter, "KO") promoted by Kainga Ora, a crown agency for housing development in the country. Through this process, Panasonic Homes became connected with MGC and a strong working collaboration has since developed.

Unexpectedly, the recent success in remotely providing technical guidance for envelope installation of the prototype house showcased the strong point of our prefabricated housing to the people in New Zealand. With sashes and other elements integrated into external wall panels at a factory, the work required at the construction site can be reduced to a minimum. This leads to enabling a shorter construction period and provision of housing of stable quality, irrespective of the skill levels of construction workers.

Meanwhile, it can be said that our efforts to provide our housing construction materials to New Zealand will lead to the transfer of skills to selected construction workers in the country.

About Mike Greer Commercial Ltd.

Mike Greer Commercial Ltd. was established following specialisation within the Mike Greer Group, which has a history of more than 25 years as a market leading construction company in New Zealand. The company has significant experience in carrying out construction projects, including detached houses, housing developments, assisted living housing for the elderly, and commercial facilities. This time, in building our prototype standalone house, the company has provided us with land for building the house and performed the construction work.

About Panasonic Homes

Panasonic Homes Co., Ltd. was founded in 1963 by Panasonic Corp. founder Konosuke Matsushita. For more than 50 years, the company has expanded its housing business in Japan and enhanced expertise and technology in home construction. As of 2019 from 1963, total home sales have reached around 430,000 units and 2019 from 1977, total apartment sales have reached around 380,000 units. This company has become a subsidiary of Panasonic Corp. in October 2017 changed its name from PanaHome to Panasonic Homes in April 2018. Panasonic Homes entered the Taiwan market in 2010, Malaysia 2012, and Indonesia in 2017, and has expanded its housing business from tread houses to condos. The company also expands its services from the interior business to the construction business. In January 2020, Panasonic Homes became a group company of Prime Life Technologies Corporation, which was newly founded by Panasonic Corporation and Toyota Motor Corporation with the aim of achieving future-oriented town development.