

Creating Expansive Open Spaces with Custom Ceiling Heights and New Technology

Launch of “The Forest BF” custom-built detached houses

Sumitomo Forestry Co., Ltd. (President and Representative Director: Akira Ichikawa; Headquarters: Chiyoda-ku, Tokyo; hereinafter, Sumitomo Forestry) announced the nationwide launch (excluding Okinawa) on April 21, 2017, of “The Forest BF” evolved from its unique Big-Frame construction method (hereafter “BF construction method”¹). In addition to offering a range of custom ceiling heights, this construction method allows for door and window openings that are wider than previously possible by using beams constructed with a newly patented technique to provide expansive open spaces. The company aims to sell 5,500 units each year.

It is possible for these houses to become net zero energy houses (ZEH) with annual primary energy consumption of net zero or less. This can be achieved through the combination of a high efficiency water heater and solar power generation system in addition to the houses’ insulation efficiency, which is higher than local standards.



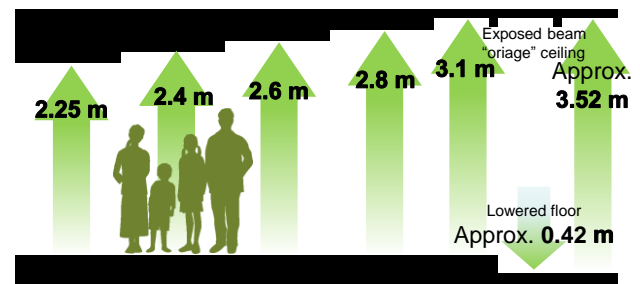
■ Key Features of “The Forest BF”

1. Custom ceiling height

The ceilings are open and airy, and there are a range of custom heights (2250 mm, 2400 mm, 2600 mm, and 2800 mm).

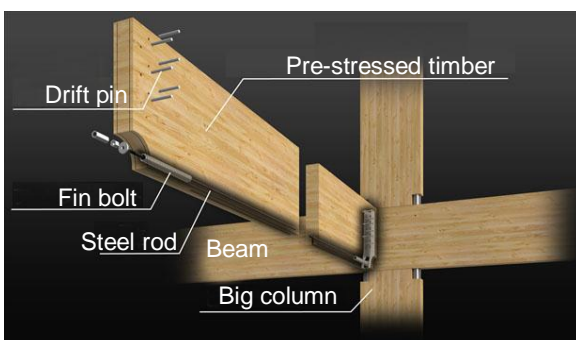
Ceiling heights of 2250 mm and 2400 mm create spaces with a sense of calmness, and high ceilings of 2600 mm and 2800 mm provide free and open spaces, so customers can design interior spaces to their own liking.

In addition, Sumitomo Forestry satisfies a wide range of customer needs by offering various combinations, such as using the slope of roofs to create sloped ceilings, or raised ceilings with exposed beams to make ceilings appear higher.



2. Wide door and window openings and open spaces with pre-stressed timber

Pre-stressed timber beams are made using a hybrid construction method with high-strength steel rods and wooden engineered beams. This is an innovative patented technique that enables the construction of wider door and window openings and more open spaces than previously, and can be designed to withstand heavy loads from above with a maximum opening width of 7.1 m. This technique can be used for spacious rooms with wide doors or windows,



large-size garages (accommodating two cars with extra space), and for designing shops.

3. Can be used for ZEH by improving insulation properties and using environmental equipment^{*2}

This method has strengthened the buildings' insulation properties and improved the comfort of the homes. Based on the region classifications of the energy-saving standards for 2016 (the smaller the number, the colder the region), "The Forest BF" gives buildings in regions rated 4 to 7 insulation properties meeting those in regions rated 3. Resin composite aluminum sash with argon gas injected low-E multi-layered glass is used to increase the insulation properties of external openings.

Sumitomo Forestry is also promoting this system in combination with high efficiency water heaters and solar power generation systems to achieve ZEH.

4. Uses SI partitions to make future layout modifications simpler^{*3}

"The Forest BF" uses SI partitions to adapt to changes in customer lifestyles. SI partitions are easy to remove compared to other partitions used in general construction methods. This gives the buildings excellent adaptability as other housing types such as two-generation households, houses serving also as stores, and owner-occupied rental housing in order to adapt to changes in lifestyles, such as when children are born, growing, and when they gain their independence.

5. "Shinkabe" (walls with exposed columns) Japanese rooms offered using BF construction method

By developing metal joints for the base of columns, traditional Japanese rooms can now be



Column base metal joint for use in "shinkabe"

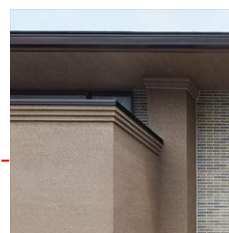
constructed using the BF construction method. This offers both high seismic resistance and Japanese serenity, bringing peace of mind to the occupants.

The column base metal joint developed this time uses a special design that does not expose the joint, resulting in "shinkabe" (walls with exposed columns) Japanese rooms that only show the supporting columns.

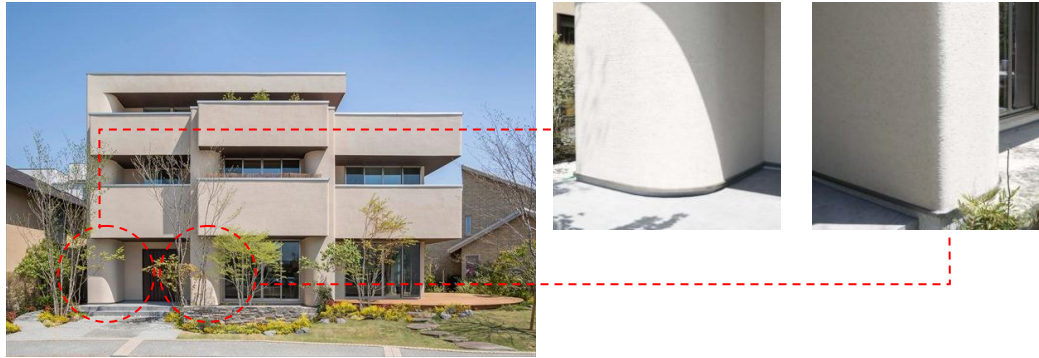
6. External walls with exceptional aesthetic qualities

Customers can choose exteriors full of beauty and elegance only possible with the designability of custom-built houses, such as using molding to accent external walls with three-dimensional patterns made by mortar plasterers, or using external walls with rounded corners to give a soft and gentle impression

1) Molding



2) Rounded external walls



7. Interiors which can be designed from a variety of tree species to give spaces rich with the elegance of wood

Materials for floors can be chosen from different types of precious wood from all over the world including Japan. These include solid pieces or sawn boards of trees such as oak, chestnut, Japanese cypress, walnut, cherry, maple, teak, and mahogany. Sumitomo Forestry also offers interior designs rich with the warmth of wood, including interior walls with wooden tiles, wooden ceilings, and exposed structural timbers such as beams and columns.

“The Forest BF” offers interiors with taste, making full use of the exceptional features of wood.

■ Product overview

Product names:	The Forest BF
Launch date:	April 21, 2017
Sales area:	Japan (excluding Okinawa)
Construction:	Big-Frame construction method
Body price:	From ¥640,000 per 3.3 m ² (tax excluded) (model plan of 130 m ²)
Sales target	5,500 units/year

Through this new product, Sumitomo Forestry hopes to satisfy as many customers as possible with its housing development by making them feel that “Happiness grows from trees.” Sumitomo Forestry will continue to contribute towards realizing a prosperous society by using wood as a renewable natural resource that is gentle to both people and the environment in its housing and lifestyle-related services.

*1 Developed exclusively by Sumitomo Forestry, BF construction method was the first wooden beam Rahmen structure method to be successfully patented in Japan when launched in February 2005. Instead of load-bearing walls, BF construction method uses “big columns” (heavy section large columns) that are linked together directly with dedicated “metal-touch” joiners (purpose-specific BF metal joints). This creates an extremely strong structural framework without the need for through pillars, thereby allowing far more design flexibility since columns can be located at different points on different stories. By employing a rigid frame structure, BF construction method is able to accommodate large doors and windows in walls as well as spacious interior design configurations. On houses with narrow street frontage, big columns allow larger door and window openings than conventional construction techniques to maximize natural light and ventilation characteristics.

*2 Net zero energy house (ZEH) refers to housing whose objective is to realize a net zero or negative balance of annual household primary energy consumption by air conditioners, ventilators, water heaters and lighting. This is achieved by improving the insulation properties of exteriors, installing high-efficiency energy-saving equipment, and making use of renewable energy.

*3 SI partitions are based on the concept of skeleton-infill. By making a clear distinction between the skeleton (the structural frame) and the infill (interior partitions, fixtures and fittings), it is possible to more freely design spaces compared to conventional houses.

Reference

Interior photographs



• Walnut



• Mahogany



• Teak



• Cherry



• Maple



• Oak