

September 1, 2016

For Immediate Release

Sumitomo Forestry Co., Ltd.

~Incorporating research on sleep and cognitive function~
“Gran Forest Gakugei Daigaku”
Private-pay Elderly Care Facility to Open

Sumitomo Forestry Co., Ltd. (hereafter “Sumitomo Forestry”) announces that Fill Care Co., Ltd. (hereafter “Fill Care”), a Group company operating private-pay elderly care facilities, will open a new facility, “Gran Forest Gakugei Daigaku,” in February 2017. The facility is accepting applications for residents starting from today.



As new initiatives to improve residents’ physical and mental well-being, the facility features indoor living spaces designed to improve the quality of sleep, as well as a garden to enhance residents’ cognitive function. These initiatives are based on research results from Sumitomo Forestry’s Tsukuba Research Institute. In addition, the facility adopts Sumitomo Forestry’s proprietary Big Frame (BF) Construction Method, offering spacious living with a minimum number of walls.

Residents of elderly care and nursing facilities often have difficulty sleeping. It’s not unusual for residents to wander facilities at night due to the reversal of day-night sleeping patterns and other lifestyle rhythm imbalances. Residents suffering from dementia, meanwhile, have a tendency to stay in their rooms, which often aggravates their illness. To help alleviate these problems, Sumitomo Forestry’s Tsukuba Research Institute’s research was utilized to create innovative living spaces enabling residents to sleep soundly and establish healthy lifestyle rhythms, as well as a garden area encouraging residents to enjoy the outdoors, just as they would at their previous home, and help improve their cognitive function.

Regarding the indoor living spaces, Fill Care has combined a wood interior with indirect lighting. This combination enhances the function of the parasympathetic nerve system to help residents relax and improve their quality of sleep while lessening fatigue. This design is based on the research results and reflected in all of the resident’s rooms in the facility. The wood materials for the walls and other elements are arranged effectively and combined with appropriate lighting brightness, colors, and illumination times in order to help residents relax and provide an environment in which they can sleep well. The research results on which the design is based have been verified in collaboration with Osaka City University Graduate School of Medicine and Faculty of Medicine. The medical evidence and other details were published in the December 2015 issue of the “Japanese Journal of Complementary and Alternative Medicine.”

Regarding the garden, the design reflects research showing that trees, plants, and other greenery help people recall memories and events, while gardening work stimulates the fingertips to improve the cognitive function and slow the dementia process. Regarding the exterior planning, the “Hanaemi Garden,” which means living actively with beautiful smiles every day, provides easy access from inside the facility to encourage residents to enjoy the outdoors and a variety of well-arranged plants. The facility will also utilize the garden’s trees and flowers in various recreational events, celebrating the changes of seasons and helping to improve residents’ lifestyle rhythm. Sumitomo Forestry Landscaping Co., Ltd. managed the construction of the garden and the landscaping. The company leveraged its technology in designing green residential and urban spaces to ensure that residents can enjoy all four seasons in a comfortable, limited space.

Additionally, the new facility adopts a new ICT monitoring system which the Sumitomo Forestry Group is deploying in private-pay elderly care facilities from this fiscal year to continually monitor the health and safety of residents.

Regarding the building construction, the Housing Division's MOCCA (Timber Solutions) Department, which builds medium- and large-sized wooden structures, managed the facility's design and construction. The department leveraged the Sumitomo Forestry Group's know-how in the custom-built detached houses business to create spaces featuring the warmth of wood in wooden flooring and fittings and provide living spaces with the same relaxing comfort as a private home. The cafeteria, where all the residents gather, features high-grade oak flooring. The shock-absorbent underfloor materials ensure safety in the event of a fall, as well as sound insulation.

Fill Care plans to increase its portfolio of elderly care facilities from the current 10 facilities to 20 facilities by fiscal 2019. "Gran Forest Gakugei Daigaku" will become the 12th facility under its management.

The Sumitomo Forestry Group will continue to offer a unique level of security and services to promise spaces where residents can live comfortably and enjoy an enriching senior lifestyle.

Reference

■ Overview of the facility

Facility name:	"Gran Forest Gakugei Daigaku"
Location:	3-13-5 Gohongi, Meguro-ku, Tokyo
Nearest station:	6 minutes by foot from Gakugei-daigaku Station, Tokyu Toyoko
Site area:	Line : 2,008.97 m ²
Floor space:	2,832.37 m ²
Structure:	Wood
Completion:	December 2016
Capacity:	64 residents
Rooms:	64 units
Monthly fee (reference):	¥276,000 for basic plan (subject to change)

■ Details of Tsukuba Research Institute's Research and "Gran Forest Gakugei Daigaku" Features

(1) Living spaces

i. Living environments to improve sleep quality and facilitate a comfortable sleep

To ensure a comfortable sleep, each of the living spaces is designed with wood interiors which absorb blue light from lighting fixtures and make it easier for residents to fall asleep. Residents can also control the lighting by setting the timer to gradually dim the lights 30 minutes before going to bed and gradually brighten the lights 30 minutes before waking. With a single controller, residents can create an environment ideal for their sleeping rhythm.



Image of living space lighting

The Tsukuba Research Institute's research on improving sleep quality found that the optical properties of wood (significant absorption of blue light rays) can be leveraged by using wood as reflectors for the indirect lighting. The institute conducted medical experiments showing the benefits of wood on improving sleep quality and lessening fatigue.

The combination of a wood interior and indirect lighting can create a positive sleep environment by helping residents transition to a parasympathetic nerve state conducive to relaxation and before sleep. This supports residents' quality of sleep and lessens their fatigue. The research on which this approach is based was recognized by the "Japan Wood Design Award 2015" Chairman's Commendation Award.

ii. ICT monitoring system provides more robust nursing

The ICT monitoring system collects and analyzes information from multiple bed and motion sensors, as well as environmental data such as indoor temperature. Nursing staff can access this information from computers and smartphones to monitor residents' activities in real-time.

Injuries from falls and other accidents can also be prevented by monitoring when residents have woken and left their beds. Among the other benefits to sleep management, daytime exercise can be increased for residents who sleep long hours during the day and wander the facility at night, so as to improve the quality of their nighttime sleep. This style of sleep time management will improve the daily quality of life of each individual resident, fulfilling Fill Care's management philosophy of "Warm and caring nursing care, like a family."

(2) Exterior

i. "Hanaemi Garden" developed specifically for elderly facility in hopes of improving cognitive function

Fill Care facilities are designed to encourage residents to freely enjoy the outdoors, as they did at their own private homes, and experience the seasons and greenery to live active daily lives. Based on that approach, the company collaborated with the Tsukuba Research Institute to develop a garden which residents can easily access and enjoy.

The garden name, "Hanaemi," combines the words "hana," or blooming flower, with "emi," or smile, to represent the goal of naturally encouraging brilliant, blooming smiles whenever residents enter the garden.

◆ **Seven main features of "Hanaemi Garden"**

- (1) Four seasons in view: The garden is easily seen from inside the facility and naturally positioned within eyesight to encourage residents to venture outdoors.
- (2) Intimate garden size: The garden is small enough for residents to grasp and enjoy at leisure
- (3) Budding flower beds: The height of the flower beds is designed so that even residents in wheelchairs can enjoy the flowers, while the close proximity of the plants makes the garden enjoyable for residents with poor eyesight.
- (4) Familiar plants: The garden includes many plants and flowers familiar to residents which have been commonly used in Japanese gardens over the years and for tea ceremony. This helps residents recall past events and encourages communication among residents to help them build closer relations.
- (5) Plant labels: The nameplates help residents become familiar with the plants, facilitating attachment and communication.
- (6) Easy access: Residents can safely access outdoor areas, encouraging their interest in the garden.
- (7) Convenient watering: Watering equipment is conveniently positioned to care for plants and wash hands after gardening work.

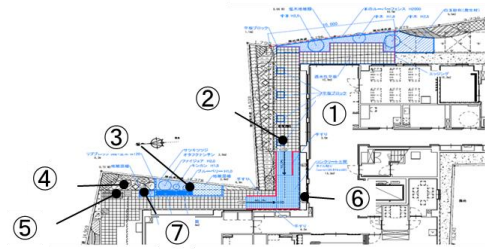
~In touch with nature for active daily lives ~ “Hanaemi Garden”



(1) Four seasons in view (encouraging outdoor activity)



(2) Intimate garden size (relaxing activities)



(3) Budding flower beds (convenient use)



(4) Familiar plants (recalling fond memories)



(5) Plant labels (encouraging familiarity)



(6) Easy access (encouraging outdoor activity)



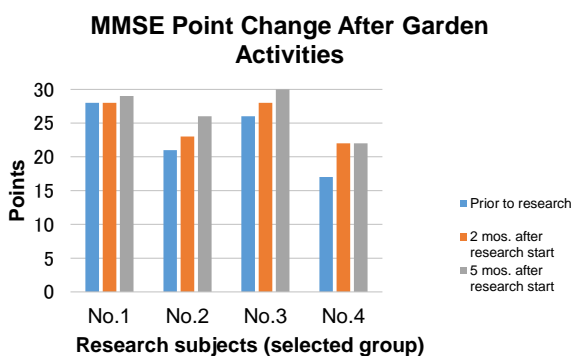
(7) Convenient watering (easy to use)

ii. Improving cognitive function through combined use of “Hanaemi Garden” and plant and flower recreation

The Tsukuba Research Institute conducted a five-month experiment using plants and flowers from the facility garden once a month for recreational activities and found that this activity led to improvements in cognitive function, such as residents’ basic orientation. The institute will use “Hanaemi Garden” for these activities and continue experiments to verify its findings.

Plant and flower recreation involves using the garden’s greenery for flower arrangement and enjoying the garden’s herbs and vegetables for various activities. By using garden plants and flowers enjoyed daily by the residents, residents can experience the change of seasons and improve their daily lifestyle rhythms. The facility plans to develop various programs aimed at alleviating dementia and ADL.

◆ MMSE Point Change After Using “Hanaemi Garden”



*MMSE was used for research.
 Mini-Mental State Examination (MMSE): Cognition screening test MMSE
 27~30 pts: Normal
 22~26 pts: Possibility of mild dementia
 21 pts or less: Possibility of severe dementia

◆ Plant and flower recreational activities

