Healthy timber construction using minimalistic CLT framing

Situated among highlands with expansive satoyama landscapes, Takenaka’s training center “Takumi” is used for live-in training of its employees. A new dormitory wing, incorporating 30 bedrooms, was added to the center in response to increased usage arising out of the establishment of a variety of educational courses. Planting of forests, which support the formation of various ecosystems, is being advanced within the site. Accordingly, a cross-laminated timber (CLT) construction method using domestic cedar has been adopted in the expansion plan as an approach that accords with the forest resources utilization cycle. Optimal techniques for placing CLT panels were devised to create eaves with the aim of mitigating ultraviolet radiation and protect the timber sidings; the eaves protrude in two directions at each corner, creating a facade with rich contrasts of light and shade. Hanging and spandrel walls, which are normally required in standard CLT construction, were eliminated, thereby ensuring a large aperture in the external wall of each room to provide maximum exposure of the forest greenery. In addition, CLT boundary walls were made double framed, and a double floor was installed on the CLT slab in order to ensure sound insulation between rooms and floors as well as to conceal air-conditioning piping and metal CLT panel joints.