

# 木質複合建築構造技術の開発

## Development of Technology for Hybrid Timber Building Structures

木材は伝統的な建築材料であり、わが国固有の建築技術・文化が形成されているが、これまでの建築基準法のもとでは、さまざまな仕様規定により建築物の規模等が限定されてきた。しかし、平成10年6月の建築基準法の改正に伴い、同法は性能規定化され、大型の木造建築物を建設できる道が開かれた。

これを受けて、本研究では、新たに開発されたエンジニアリングウッド（集成材に代表される工業化木質構造用材料）などの要素技術を用い、木材と他材料を複合化した木質複合部材、木材と他材料を接合する高性能接合部、鉄筋コンクリート造や鉄骨造等の他構造と木造を組み合わせた木質複合構造、を開発する。

本研究の成果によって、地場産材を活用した、地域の風土に根ざした街並みが

形成され、地域のアイデンティティの向上等、地域の活性化に貢献するとともに、製造時における二酸化炭素の排出が微量であり、生育時に大気中の二酸化炭素を固定保存するため、地球温暖化の防止に資することができる。

Timber is a traditional construction material that has relationship to our country's unique construction techniques and culture, but under the previous Building Standard Law, various specification codes have limited the scale of structures. However, a revision of the Building Standard Law in June 1998 with its prescriptions on performance codes can accept large-scale timber buildings.

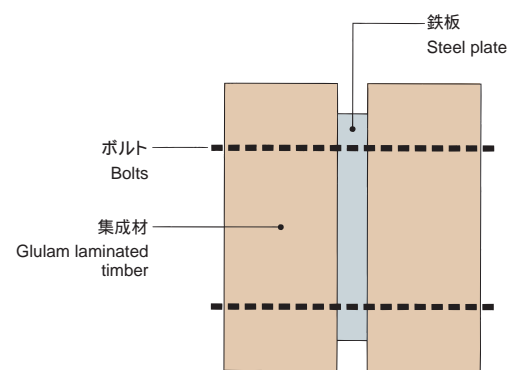
This research project develops following items by utilizing element of technologies including newly-devel-

oped engineered wood (industrialized timber structure materials such as glulam laminated timber) etc, 1) hybrid timber members consisting of timber and other materials, 2) high-performance joints to connect timber and other materials, 3) hybrid timber structures combining timber with other types of structures, such as reinforced concrete or steel frame.

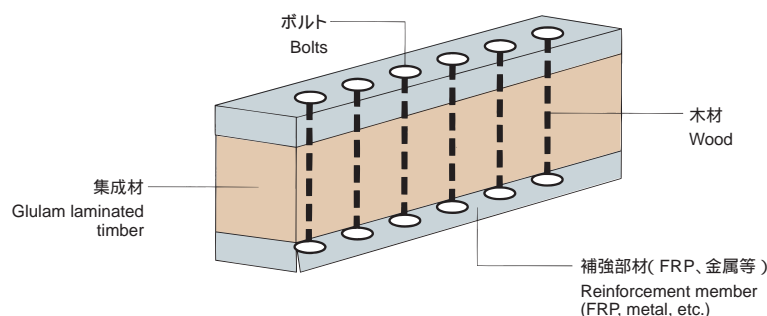
The results of this research will help promote building of houses with locally produced timber suited to the local climate, thus contributing to an improvement in regional identity and revitalization of the region. The results of this research will also help stem global warming, because the production minimizes emission of carbon dioxide and growing trees fix the amount of carbon dioxide in the atmosphere.

### 木質ハイブリッド部材の開発

Development of hybrid timber members which consist of timbers and other materials



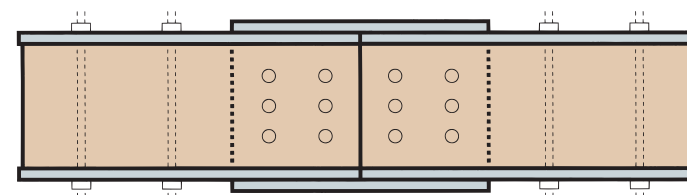
内装補強型木質複合部材  
Internal reinforced hybrid timber member



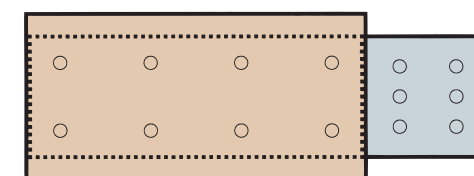
外装補強型木質複合部材  
External reinforced hybrid timber member

### 木材と他材料間の高性能接合部の開発

Development of joints connecting timbers and other materials



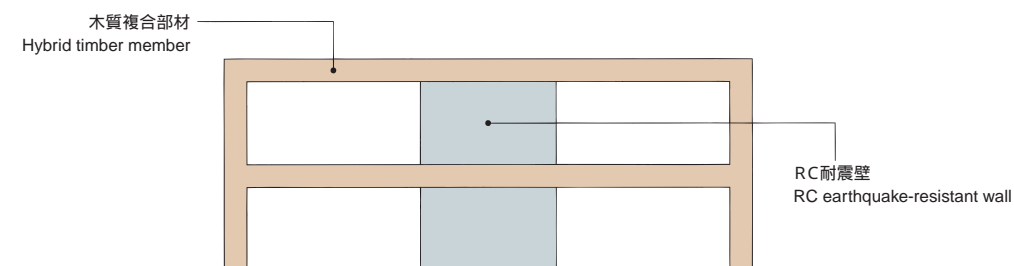
外装補強型複合部材の接合部  
A joint connecting external reinforced hybrid timber members



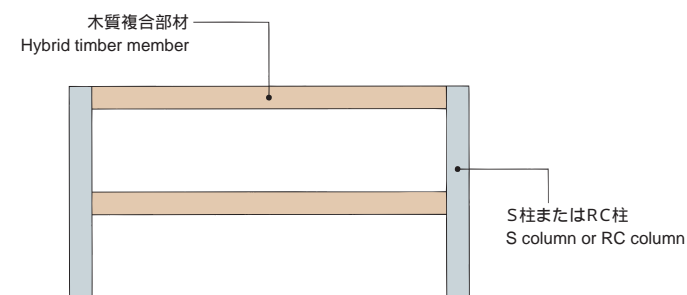
内装補強型複合部材の接合部  
A joint connecting internal reinforced hybrid timber members

### 木質複合構造の例

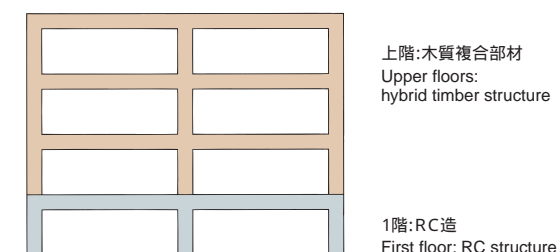
Examples of hybrid timber structures



水平抵抗力を他種の壁に負担させる複合構造  
Hybrid structure applies horizontal pressure to other types of walls



異種の柱・梁による複合構造  
Hybrid structure with columns and beams of different materials



上下の階の構造材料が異なる複合構造  
Hybrid structure which upper and lower floors utilize different building structures