

周辺環境が文化財に及ぼす影響評価とその対策に関する研究

Study on the assessment of the effects of surrounding environment on cultural properties and countermeasures

屋外にある木造建造物や石造文化財の劣化は、周辺環境の影響を強く受けます。私たちは、温湿度や気流などの微気象観測による屋外文化財の劣化要因の解明や、劣化を防ぐ手法の開発を行っています。また、屋外にある文化財の修復材料について、実験室での試験や現地曝露試験により評価を行っています。

Micro-climate conditions affect the deterioration of outdoor wooden buildings and stone heritage. The Institute conducts studies on the causes of deterioration of outdoor heritage based on measurements of micro-climate (i.e. temperature, humidity and air current) and develops methods for preventing deterioration. It also evaluates restoration materials for outdoor heritage by conducting exposure tests in the laboratory and outdoors.

北陸地方における神社覆屋の環境調査
Environmental measurement for the shelter of a shrine in Hokuriku region



ブータン王国における伝統的建造物の保存

Preservation of traditional buildings in the Kingdom of Bhutan

ブータンでは、型枠内で土を突き固めて壁体を造る版築技術が民家や寺院の建築に広く用いられてきましたが、近年頻発する地震に対してその安全性が懸念されています。文化庁から委託された拠点交流事業として同国内務文化省文化局と行っている共同研究では、伝統建築の耐震性能を力学的に評価するとともに、古くから用いられてきた補強工法等を再発見することで、伝統的な技術や景観の維持と安全性の向上の両立を実現し、持続可能な文化遺産の保存につなげていくことを目指しています。あわせて、実験や調査の手法について、現地スタッフへの技術移転も行っています。

伝統的な版築工法による民家の新築工事
Construction work on a rural house using traditional earth ramming techniques



In Bhutan, the traditional technique of ramming earth within a formwork has widely been used for construction of rural houses and temples. However, concern over the safety of such a construction method is caused by frequent earthquakes in recent years. As the project of the Networking Core Centers for International Cooperation on Conservation of Cultural Heritage entrusted by the Agency for Cultural Affairs of the Government of Japan, the Institute is carrying out a joint research with the Department of Culture, Ministry of Home and Cultural Affairs of the Kingdom of Bhutan. The project aims for sustainable preservation of cultural heritage in which consistency of improved safety and maintenance of traditional techniques as well as landscape are realized. For this purpose, anti-seismic performance of traditional buildings are dynamically evaluated and reinforcing methods used from ancient times are rediscovered. In the process, technical transfer to the local staff is also fostered on methodologies of experiments and surveys.

材料強度試験方法の検討
Discussion on appropriate methods for material strength test