

## 5. Development of Estimation System on Durability of Concrete Structure

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Authors developed examination and estimation system of concrete structure to obtain long life durability and optimum maintenance planning. This system has following functions, grading of deteriorations by external observation, estimation of chloride intrusion and neutralization, progression of deteriorations on repaired concrete part, optimum maintenance and repair plan to considering life cycle cost of structure. This system is applied to renewal works and usefulness of the system was recognized.

**Key words** : concrete, durability, grading, chloride intrusion, neutralization, life cycle cost