

JRI Starts Next-Generation Zero Emission System Trials

In January 2007, The Japan Research Institute, Limited launched operational trials of a radio-frequency identification (RFID) tag-based, next-generation zero emission system that it has been developing jointly with a Japanese housing manufacturer. The trials follow the development project's selection by Japan's Ministry of Land, Infrastructure and Transport as a fiscal 2006 recipient of subsidies under a program designed to facilitate development of leading technologies for the housing and construction industries.

The new zero-emissions system builds on Japan Research Institute's Material Tracing IC System (MATICS) which was built to enable development of Japan's first next-generation waste management system. The new system uses single-chip RFID tags to go beyond merely tracing waste materials, making it possible to actually reduce waste generation and to recycle wastes more effectively. MATICS is already at work as part of a waste management system in the medical field. Japan Research Institute's desire to extend the application of MATICS to new fields coincided with the housing manufacturer's efforts to improve an internal zero-emissions waste-management framework it had developed to minimize building-site waste, and this led to the joint development project.

The jointly developed system allows the housing manufacturer to quantify the volume of by-products being generated at each of its building sites as well as to gain an accurate picture of what is being discarded and how well it is being sorted. The data is then tabulated, analyzed, and reviewed to gain an overall understanding of the situation on the ground and feed it back to the appropriate staff so steps can be taken to reduce waste, advance recycling, and ultimately improve the production and work processes.

Operational offices using the system report that they have been able to reduce the generation of construction by-products by about 2.4% on an inputs-to-waste weight basis, as well as to enhance materials recycling efficiency through better sorting. Some have even reported being able to sell construction by-products for a worthwhile price.



日本総研が「次世代型ゼロエミッションシステム」の試験運用を開始

日本総研が住宅メーカーと共同で進めてきた、ICタグ活用による「次世代型ゼロエミッションシステム」が、国土交通省の2006年度「住宅・建築関連先端技術開発助成事業」に採択され、2007年1月より試験運用を開始した。

日本総研が構築したMATICS (Material Tracing IC System) システムは、ICタグを活用して、廃棄物の追跡だけでなく、廃棄物発生量削減やリサイクル推進までを実現可能とする日本初の次世代型廃棄物マネジメントシステム。同社はこれを活用した廃棄物管理システムをすでに医療分野で稼働させているが、新しい分野での運用拡大を進めていた。今回、自社管理体制によって現場のゼロエミッション化を実現していた住宅メーカーとともに、さらなるシステム改善に取り組むことで両社の目的が一致し、共同開発へと至った。

同システムは、住宅メーカーの施工現場で排出される建設副産物の重量を1棟ごとに実測把握するとともに、分別状態の良否を含む排出の状況を正確に把握することが可能となる。これらのデータを集計・分析・検討することで現場の状況をフィードバックし、廃棄物の削減およびリサイクルの推進を行い、さらには生産・施工工程の改善につなげる。すでに試験運用を行っている支店では、原投入量に対する建設副産物の発生量が重量比で約2.4%削減されたほか、分別精度の向上によりマテリアルリサイクルが可能となり、一部については有価売却が可能になった。