



Project No: BE 7569

## **Protocol and Management Information System for IAQ Assurance in the Refurbishment of Office Buildings**

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### **Project Overview**

Refurbishment activities currently account for more than one-third of the total construction output in the EU and are projected to grow stronger with the ageing of buildings and the positive views on the economic viability and environmental advantages of retaining buildings. There is concurrent concern expressed over the health effects and loss in productivity resulting from the sick building syndrome, indoor air quality (IAQ) being acknowledged as a main cause of this syndrome.

Refurbishment work is uniquely different from new build work. Substantial demolition and removal of existing materials is involved often without the guidance of "as built" information. Buildings are often occupied during construction work; building operatives and occupants are immediately exposed to high episodic doses of pollutants from demolition and from newly installed materials. The extent of refurbishment work and its potential for causing IAQ problems needs to be addressed as the health and productivity of building operatives and occupants can be adversely affected by such work.

Brite Euram project BE 7569 investigated the Refurbishment-IAQ cause and effect relationship to develop a refurbishment protocol to ensure IAQ in refurbishment work. The research results were:

- A data base on emissions from construction process and materials
- A methodology for building diagnostics and IAQ surveys of existing buildings
- Threshold limit values (TLVs) of pollutants from demolition and disposal of existing materials and new materials to be installed
- Specifications of measures to control pollutants through treatment of materials at source, organisation and management procedures for the work and design and operation of HVAC systems
- Specification of a system for monitoring and evaluating IAQ in refurbishment work
- Refurbishment protocol for IAQ assurance and instruction manuals for use of the protocol
- An information system to support implementation of the refurbishment protocol.

### **Research Consortium**

#### **Project Coordinator:**

Real Estate Management & Maintenance Research and Advisory Services: QD International (The Netherlands)  
Project Leader: Dr Quah Lee Kiang

#### **Partners:**

Apogée-Périgée (France):	Building Owners Association
Climaconsult-Halton (Finland):	M&E Consultants
Costain Bldg & CE Engg (UK)	
S.A.E. (France):	Building Contractors
Stichting Bouwresearch (The Netherlands):	Building Research Foundation
TNO-Bouw (The Netherlands)	
VTT Building Laboratory &	
Oulu Regional Institute of Occupational Health (Finland):	National Research Institutes

### **Project Budget**

2,466,746 Euros