Read more in

- Description of the Quality Assurance system
- Guide to the Quality Assurance system

Can be found on www.iee-square.eu

A Quality Assurance System for Improvement of Indoor Environment and Energy Performance when Retrofitting Multifamily Houses

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- SP Technical Research Institute of Sweden, Sweden
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- AEE Institute for Sustainable Technologies, Austria
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- EAP Energy Agency of Plovdiv, Bulgaria
- AB Alingsåshem, Sweden
- Poma Arquitectura S.L., Spain

SQUARE

Intelligent Energy Europe

Contact Kristina Mjörnell

SP Technical Research Institue of Sweden • Box 857, SE-501 15 BORÅS, Sweden
Phone +46 10 516 5745 • E-mail kristina.mjornell@sp.se • www.iee-square.eu

A Quality Assurance System

for Improvement of Indoor Environment and Energy Performance when Retrofitting Multifamily Houses

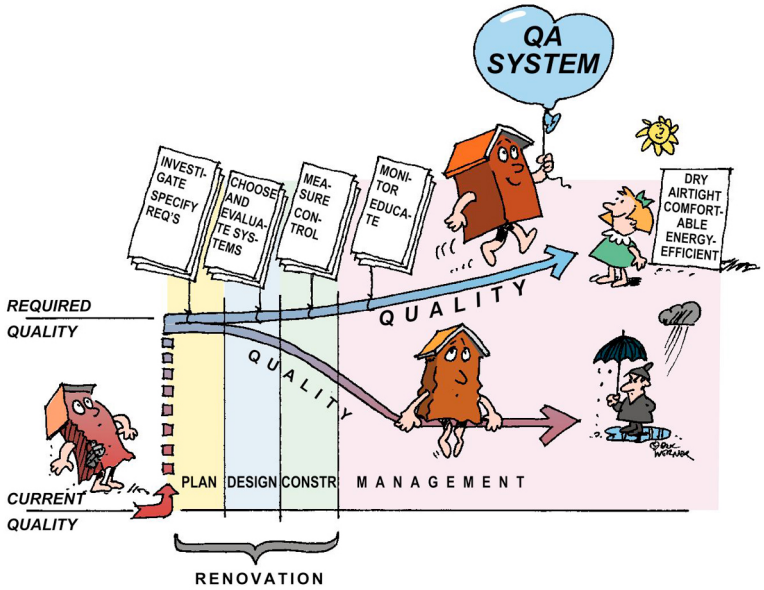
A large part of the social and multifamily housing stock in Europe is in substantial need of major renovations. This provides the owners with an opportunity and challenge to invest in cost-effective energy-saving measures that also ensure a good indoor environment. A Quality Assurance (QA) system is a very useful tool to enable your organisation to retrofit and manage a large number of dwellings in a systematic and controlled way, thus harvesting the great potential for improvements.

Building QA on an Energy and Indoor Management Policy

The quality assurance system must build upon and reflect a management policy for retrofit work, highlighting the improved indoor environment and reduced energy use. A key to successful implementation of the QA system is that the organisation can establish, implement and maintain such a policy efficiently. Key elements of the policy are, for example, commitments regarding energy targets and resources needed to carry out the activities.

Establish the Quality Assurance System

Organisations already operating an ISO 9001 system or similar quality management system will find it easy to integrate the requirements stated in the QA system for indoor environment and energy use as a sub-part of the system. If no system exists, the SQUARE QA system has all the basic elements of a quality management system and can be implemented as a stand-alone system. In either case, the new parts must be customised to suit the organisations' activities and routines if they are to operate properly.



Five Good Reasons…

…to use a Quality Assurance system for improvement of indoor environment and energy performance in renovation projects are:

1. Economic and environmental savings
2. Avoidance of sub-optimisations
3. Improved communication within the project
4. Improved feedback within the organisation
5. More satisfied customers/tenants

The Implementation of a Quality Assurance System for Renovation Projects

Ahead of retrofit

Questionnaires to tenants together with inspection and analysis of current building status and energy performance are carried out according to predefined procedures. This forms the basis for retrofit planning.

Requirements

The QA system assists the organisation in defining requirements and targets and comparing them to the results of the initial survey. Based on this, measures to be taken are suggested.

Design

Building structures and building services systems are designed to meet requirements with respect to energy use and indoor environment. Necessary quality controls to be employed in the construction stage are planned.

Construction

Specified requirements are verified by inspections and measurements during the construction stage and in connection with handing over of the building. The next step is commissioning, with the necessary adjustments of the systems expected to take at least a year of the management stage.

Management

The QA system aims to bridge the gap between the renovation and management stages in order to make the achievements sustainable. It therefore also highlights some critical activities in the management stage such as e.g.

- Training of operators and cleaners
- Operation and maintenance routines and activities
- Follow-up of energy use
- Questionnaires to tenants
- Management review and handling of non-compliances