Workshop 'Interactions in the renovation process' 23/11/2011
JVR – 12/12/2011

Premise
The goal of the workshop is to identify possible points of attention and interactions when several, different contractors work on the same (very low energy) renovation project, in consecutive steps (a renovation is often very fragmented or phased). In the ideal case, the activities of the different contractors are fit to each other, so they don’t disturb the work performed by others. In first instance, this requires consciousness and awareness from each party of the works already executed, and the works that will be executed later on, or together with the contractor’s own activities. Awareness creates communication and coordination and the use of the appropriate means and solutions (construction details, order of execution, ...). To identify these interactions and points of attention, the BBRI created a specific approach, to map the interactions: a matrix. This approach is being put in practice during the workshop, with people that execute energy renovation tasks daily: contractors, architects, experts, ... In that way, during the workshop already some awareness is created in the participants’ minds. Subsequently, the matrix and identification of attention points is used to discuss possible solutions. These can be organisational (cooperation, clustering), practical (good execution, order of works, ...) or eventually a new, innovative approach or technique.

Introduction
Two BBRI experts presented:

- The One Stop Shop project, the goal of the workshop, the way the ‘matrix’ works
- Some practical examples: what are the points of attention and interaction in a real renovation project?
Part 1 – Point of attention
The participants were split up per ‘profession’ or ‘activity’. Each group was assisted by a moderator from the OneStopShop-research-team. Each ‘profession’ had a table with an adapted, empty ‘matrix’. The empty matrix (displaying on the rows and columns all the renovation activities that could interfere with the activity of the group in question: foundations, insulation of walls, placing of windows, installations, roof insulation, …) was filled in using post-its. Per row and column, the exercise was done to answer the questions:

- Where comes my work after the work of someone else? What are the things to pay attention to in the already existing situation?
- Where comes my work before the work of someone else? What are the things I should foresee so he can do a proper job?

In the workshop, a split-up was made between:

- Coordination: General contractors, architects
- Insulation of the envelope: contractors working on roofs, experts in insulation materials, …
- Openings of the envelope: carpenters, solar protection producers, …
- Air tightness and finishing: finishing contractors, specialists in air tightness, …
- Installations: contractors, advising experts, …

20 minutes was the timeslot foreseen to do this exercise in each group. Eventually, the discussion took over one hour to complete the whole matrix for each group.
This discussion resulted in the following results:
Figure 4 – Completed matrixes: coordination – finishing – insulation – installations – openings
As one can see on the pictures of the matrices, these were filled-in in detail. The most important conclusions were presented by the moderator of each group afterwards:

COORDINATION

- Is mostly conscious on the things coming afterwards: looks ahead – things about placing of window sills, integration of solar screens, foreseeing openings for pipes and ducts through the roof (fire protection!), fixing problems when you can – before they are hidden by finishings, ...
- The link between ‘insulation & air tightness’ and ‘ventilation’ is very difficult to sell to a customer. There is also still a large gap between the people doing the ‘envelope’ and contractors working with ‘installations’.
- Looking back, being aware of what has been done already has a lot to do with a good ‘process’: the workers should have the knowledge, but also the motivation. A third aspect is the ‘persistence’ in the approach: the required level of quality should be the same on all sites. This can lead eventually to ‘type solutions’.

INSULATION OF ENVELOPE

Almost all connections between insulation layers are a challenge: whether you come first or last.

- Important aspects:
  - Quality assurance: how?
  - Giving advice to customer is also important
  - Flow of information needed: Architect-contractor, Architect-Client
INSTALLATIONS

Mainly 'looking back', since installer is usually the last party in the process

- Water and air tightness
- Anchors
- Distances for tubes and pipes (smoke, ...)
- Relation power of heating installation – flux of ventilation & air tightness
- Maintenance – accessibility of componenten
- More consultation needed

FINISHINGS

- Mainly recommendations to other parties in the process:
  o Coordination
  o Order of placement of installations (2 phases might be needed))
  o Windows: foreseeing connections for air tightness, solar protection on the outside, ...
  o Roofs & insulation: allow the possibility to attach finishing to air- or vapour-barrier
  o Allow connection to foundations using external insulation + putty

  ⇒ Clustering is already going one: ‘we always meet the same people on the sites’
The group on WINDOWS & SOLAR SCREENS already made some suggestions for solutions:

- Door: foreseeing a thermal cut for the floor
- Connection windows-external insulation: in facade face or in front of facade
- If roof stays or not: work towards the attic, or work towards the sky
- Place windows in cases: easier for finishings
- Even if windows are placed afterwards, solutions are possible:
  - Connections to insulation
  - Wireless installations (no perforations needed)

Part 2 – Towards solutions

In the second part of the workshop, it was foreseen to ‘mix’ the groups (the colors below represent the different activities as they were grouped in part 1) and to let them discuss a selection of problems to come to solutions:

- What’s the current best technical solution?
  - Choice of products, details, ..
  - Pros & cons
  - Attention points on the site – execution
- Are there innovative ways to tackle the problem?
  - Suggestions were made of innovative products
- Besides technical solutions, can the problem be solved through better organisation?
  - A renovation coordinator – architect
  - A fixed partnership between contractors
  - Integration of different activities in one company – clustering
  - (better) quality control
Due to the lack of time, the discussion was held in 1 large group, focused on ‘solutions’ and ‘ways to improve the current practice’. The most important elements from the discussion were:

- **Need for a new profession ‘coordinator’?**
  - No. What’s the added value? There are already coordinators for other things without ‘proven value’ — only extra cost

- So the contractor has to take the lead: correct planning, correct plan, correct decisions, right partners, ...
  - Each contractor should make the reflexion to ‘look back’ and to ‘look ahead’
  - Companies can gain market: by showing their expertise, the added value (and added cost for the client) can be justified

- **Clustering**
  - The relationship between a ‘head contractor’ and ‘subcontractors’ is not considered as ‘balanced’, so the contractors are a bit reluctant to the idea of ‘cooperation’ or ‘clustering’ or ‘coordination by another contractor’, even if it is the coordinator that creates the extra work & money

- **Quality control**
  - Not easy
  - Labels (e.g. for good workmanship) are no solution
  - It is formation and education that should lead to quality
  - Performance based working: not clear how this should be put in practice: what’s there to guarantee in a (partial) renovation project?
  - A checklist for internal use can be interesting: ‘have I thought about all things’.

There is a certain intention to continue the work done in the workshop in a next meeting. This will be confirmed later on.