Technical procurement of heat recycling systems in existing apartment blocks-

- documents for an invitation to tender

2010-03-26

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1 Background

The installation of heat recycling systems for the ventilation air is a very important energy measure in existing apartment blocks, so as to achieve national goals and halve the consumption of energy by 2050. Today many apartment blocks built between 1940 and 1970 are facing extensive renovations/ rebuilding. As the installation of heat recycling systems is relatively expensive, it is important to carry out these measures at the same time as the rebuilding.

In a pilot study it has been established that heat recycling systems are seldom installed in existing apartment blocks. Components and systems exist but require development and adaptation for rebuilding. In addition, rational methods need to be developed cover ordering, projecting, rebuilding and administration.

Technical procurement is used as the method for development and introduction of new energy-efficient products and systems on the market.

The purpose of technical procurement of heat recycling systems in existing apartment blocks is to initiate the development of energy-efficient system solutions offered on the market in the run-up to the extensive rebuilding of apartment blocks which will come about over the next few years.

2 Objective

The main purpose is to maximise the efficiency of the energy used in our existing apartment blocks by developing complete systems for the heat-recycling of ventilation air. Recycled heat can be used for heating rooms and/or for domestic hot water.

The systems should be designed so that requirements as to air quality and thermal comfort are fulfilled together with good energy performance. The installation of units and ducting should be possible with minimum disturbance to the occupants. The siting and design of components should be aesthetically acceptable and should not restrict the use of various areas other than marginally.

3 Conditions

Technical procurement covers the systems needed for recycling heat including all components and measures for ventilation air in an existing apartment block. This will include the rebuilding of existing ventilation systems (natural, exhaust or exhaust/intake ventilation) for heat recycling.

Technical procurement covers a complete system for heat recycling including installation and other measures necessary during the procedure (e.g. sealing of climate screens, construction of fan rooms, preliminary adjustment.)

In addition to the requirements for technical procurement it is necessary that a complete bid should also include an otherwise complete and well-functioning heating and ventilation system which

complies with legal requirements when modifying buildings, e.g. duty of care, accessibility, fire regulations, etc, i.e. laws and ordinances in force shall apply.

4 Requirements

Bids will be assessed on the basis of how the bid will fulfil a number of requirements established by the customer group according to Appendix B. The requirements and wishes proposed here are expressed in the form of "must" and "want" features. "Must" requirements are basic requirements which must always apply. "Want" requirements need not be fulfilled but will be included during assessment. Requirements that are fulfilled better than the "want" requirements will be more highly considered.

One condition for a bid to be accepted is that the tenderer is qualified to fulfil all three stages of the technical procurement process. I.e. in addition to a written bid, he should also have the capacity to carry out installation of heat recycling systems in the demonstration block(s) referred to in the tender and also be able to supply and install heat recycling systems on a wide scale in buildings where similar conditions pertain.

5 Customer group

Behind the requirements posed are SABO and several apartment block companies who each will be installing the best bids in one of their blocks in order to demonstrate installation and gain operational experience. The customer group will, in addition to taking part in compiling the technical specifications, assessment of bids and demonstration in their apartment blocks, also act to bring about a frame agreement or local procurement with contracts in the run-up to continued rebuilding.

Representatives of the customer group are:

- Familjebostäder, Helena Ulfsparre
- Helsingborgshem, John Nielsen
- Huge Fastigheter, Lars Heinonen
- Hyresbostäder i Växjö, Mattias Strömberg
- Stockholmshem, Peter Axelsson
- Örebro Bostäder, Jonas Tannerstad

The requirements posed were prepared by the customer group together with:

- SABO, Ulrika Jardfelt
- BeBo, Hans Isaksson
- Arne Elmroth
- CIT Energy Management, Åsa Wahlström
- Riksbyggen, Kjell Berndtsson

6 Tendering

The tenderers must produce and present a complete heat recycling system which fulfils the requirements set out in the technical specifications. Bids should be submitted in written form with the aid of diagrams and calculations.

Proposed bids must follow the technical specifications point by point. Premises and conditions should be clearly shown in the tender documentation.

Proposed bids can be submitted for a chosen demonstration block or blocks or for all demonstration blocks.

7. Execution

Technical procurement will take place in three stages.

In stage 1, written bids will be evaluated by a panel and a winning bid will be assigned each of the demonstration blocks. Procurement will take place as a total controlled contract with functional responsibility.

In stage 2 the winning proposals will be tested and evaluated in the demonstration blocks. A panel will choose one or more winning proposals. The result will be published for nation-wide dissemination. The technical specifications will be improved so as to form the basis for stage 3.

In stage 3 the customer group will describe what types of systems will be procured for other buildings in the customer's stock. This will be carried out by public procurement through either:

a) A frame agreement negotiated via HBV

b) Local procurement with contractors by describing the system to be procured and chosen after installation on the best conditions.

8. Why participate in procurement?

No fee will be payable for participating in the technical invitation. Participation will however bring other advantages such as:

- Winning bids in stage 1 will be allowed to install the heat recycling system in one or more demonstration blocks.
- Winning bids in stage 2 will be able to sign a frame agreement or local contract agreements for on-going procurement of systems.
- Around 70% of all building proprietors can be reached through the customer group. They will disseminate information within their organisations and make sure that solutions are utilised practically.

- A new directive to be issued shortly will be posing requirements to the effect that promotion of energy efficiency must be carried out in connection with renovation of ventilation systems amongst other things.
- The Swedish Energy Agency collaborates with IEA, the International Energy Agency, within the area of technical procurement. The result of the invitation to tender will thus be presented for several countries, which will also allow other markets to be reached.

9. Evaluation of bids

Evaluation of bids at stage 1 will be based on the "Must" criteria under Point 4, the evaluation method for each point in the technical specification (Appendix B), profitability and cost assessment (Appendix D) and the check list for statements of bids (Appendix E).

Evaluation of complete system solutions at stage 2 will be carried out on the basis of measurements during a period of around one year according to the measurement programme in Appendix F.

Evaluation will be based on the allocation of points according to the table below for bids where all "must" requirements are fulfilled.

Evaluation criterion	**Max number of points**
Energy efficiency	25
Cost	25
Indoor climate parameters and monitoring of temperature and energy consumption	20
Design, function and system flexibility	10
Installation, robustness, operation and maintenance	20
Total number of points	**100**

Evaluation in stages 1 and 2 will be carried out by a panel made up as follows:

- SABO
- The customer group
- The Swedish Energy Agency

Evaluation documents will be prepared by CIT Energy Management and an expert group.
The panel themselves reserve the right to appoint winners. There is no appeal.

10. Submission of bids

Bids should be sent in a plain, sealed envelope to

Juryn för teknikupphandling av värmeåtervinningssystem i befintliga flerbostadshus
C/o Åsa Wahlström
CIT Energy Management
412 96 Göteborg

Bids must arrive by 2010-08-04. Bids must be binding for six months.

11. Information

Information about technical procurement will be available on BeBo's website (www. Bebostad.se)

Until 2010-06-15 it will be possible to send questions to asa.wahlstrom@cit.chalmers.se with a copy to ulrika.jardfelt@sabo.se . These will be collected together and continually answered on BeBo's website.

Information about the results of measurements carried out during the spring on demonstration projects will be available on BeBo's website.

An information seminar will be held on the 20th of April at 13.10 -16.00 p.m. in Stockholm. Make registration to Åsa Wahlström, asa.wahlstrom@cit.chalmers.se or +46 -31 -7724903 before the 14th of April.