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## Certification of flats and blocks of flats

*Report from EPBD Concerted Action II plenary meeting in Prague, 1-2 December 2008*

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# Summary report on certification of flats and blocks of flats

<b>Meeting</b>	<b>Summary from Warsaw, Lyon, and Prague</b>
<b>Session</b>	-
<b>Chair</b>	-
<b>Rapporteur</b>	<b>Kim B. Wittchen &amp; Kirsten Engelund Thomsen, SBI</b>
<b>Reviewer</b>	-
<b>Date</b>	<b>May 2009</b>
<b>Files in PC</b>	-

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## **1. Executive SUMMARY**

This report summarises the findings of three sessions dealing with the same topic: Certification of flats and blocks of flats. The sessions were held in Warsaw, Lyon, and Prague with oral presentations by:

- Warsaw, December 2007: Norway, The Netherlands, France,
- Lyon, May 2008: Germany, UK (England & Wales), the Czech Republic,
- Prague, December 2008: Portugal, Austria, Belgium, the Walloon Region.

Furthermore written inputs to the topic were received from Finland and Spain. Reports from all three sessions are already at the project centre under Core Theme 1 and each of the three meetings. This report is primarily intended as an executive summary with general conclusions and recommendations. Information from the presentations given at the three meetings is presented in the reports of these meetings.

Many different approaches have been implemented for energy performance certification of flats and blocks of flats in the Member States (MS). In terms of complexity and level of detail, certification of flats and blocks of flats varies significantly. The Norwegian self-assessment method giving standardised recommendations based on the building age is at one end of the scale. At the other end of the scale, the most elaborate and detailed methods are found that are used in some MS where inspection of a representative number of flats and the building in general is necessary. Moreover detailed calculation of the building energy performance is undertaken resulting in certificates for the whole building and for the individual flats. Naturally there are advantages and disadvantages related to these approaches. Thus proposing recommendations and drawing conclusions are not a straightforward matter and therefore the pros and cons are listed in relation to each of the described methods in the national presentations.

### *Implementation of certification of flats and blocks of flats in MS*

To summarise the actual status regarding certification of flats and blocks of flats, a short questionnaire (Annex 1) was distributed at the first session in Warsaw. Answers were returned from 24 MS. All the answers from the individual MS are shown in Annex 2. Not all of the 24 MS who answered the questionnaire have answered all questions, and the results do thus not add up to 24 for all questions.

One of the results of this questionnaire was an overview of when certification of flats was introduced in the MS present at the first CA2 session in Warsaw (see figures below).

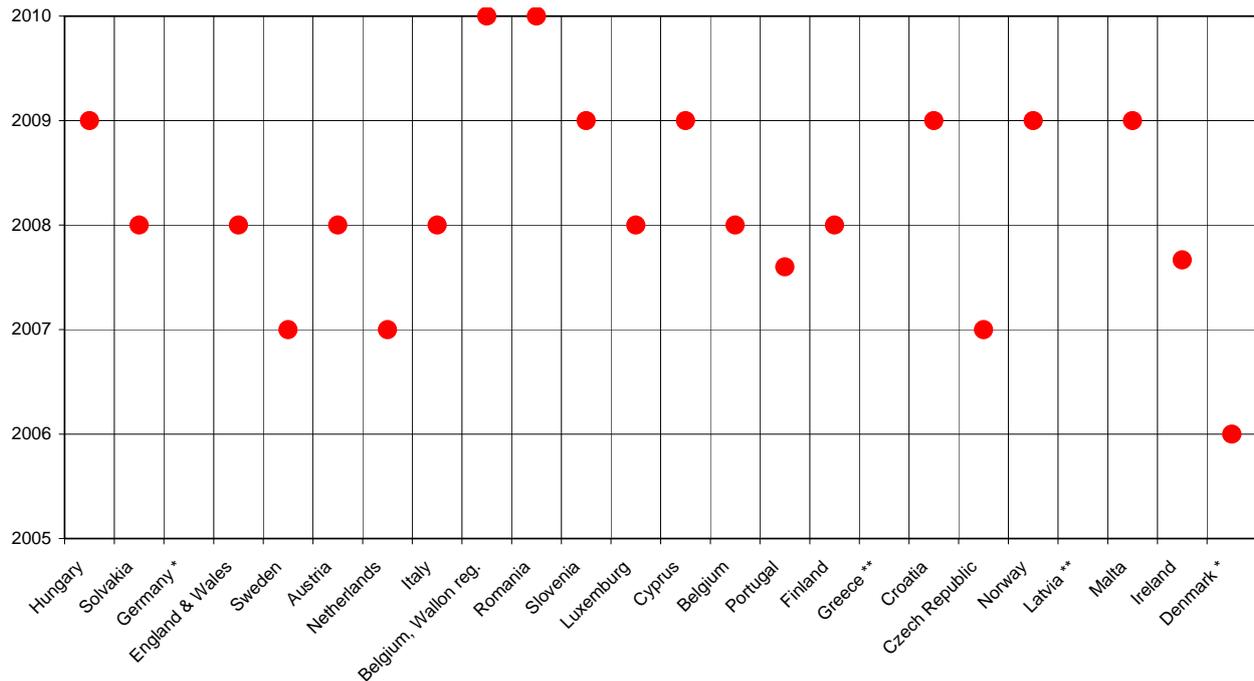


Figure 1. Year when a certification scheme for flats or blocks of flats was/is planned to be introduced in the MS that were present at the Technical session on Certification of flats at the CA II meeting in Warsaw, 10-11 December 2007.

\* Denmark has had a certification scheme for owner-occupied flats since 1997; in 2006 a certification scheme was introduced for rented flats as well. Germany has had a certification scheme since 2002.

\*\* No certification scheme in force yet.

The answers also revealed that 60 % of MS at the session had a certification scheme for flats and in 39 % of these cases the scheme was already running and planned. In most MS (87 %) the scheme cover both new and existing buildings.

### *Measured or calculated energy performance rating*

Most MS use calculated (asset) rating for flats, but in some countries both calculated and measured (operational) ratings are used, depending on building typology and age:

- Calculated: at, be(f), be(w), cz, dk, hu, ie, it, nl, no, pt, ro, sl, sk, uk
- Measured: se
- Combination: fi, ge, lu
- No information: cy, gr, hr, lv, ma

### *Level of certificates*

Issuing the certificate either for each flat or for the whole block of flats is another important subject. In 9 of the MS, the certificate is being issued for the whole block of flats, while 8 of the MS make certificates for the individual flats (see Figure 3). The remaining 2 MS make a certificate for both the individual flat and the whole block of flats. In some MS the label of the certificates can vary from flat to flat while in other MS the same label that has been given to the whole block of flats is given to each flat. The reason for this approach is that

many of the recommended energy saving measures are only applicable in the context of improving the whole block of flats, e.g. adding insulation to the roof, and especially when the block of flats has a common heating system that serves all flats.

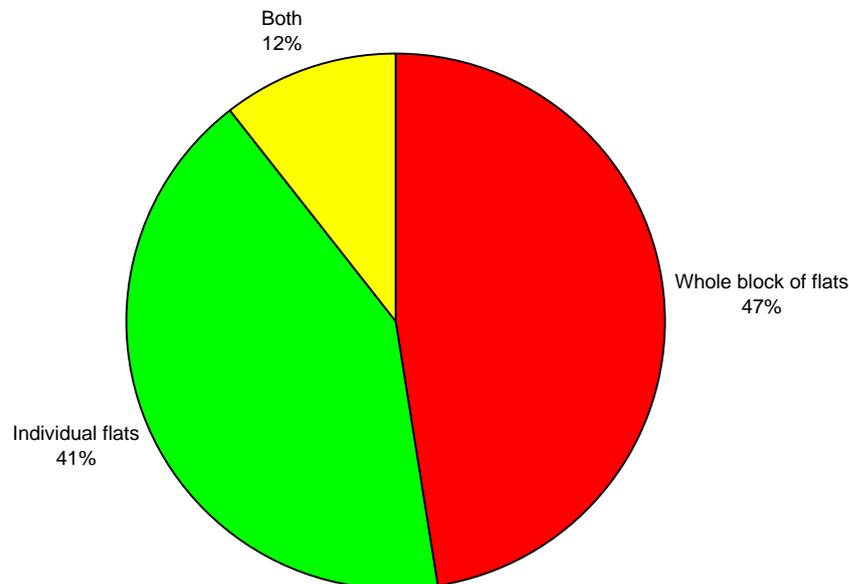


Figure 2. Certificates are issued for either the individual flat or for the entire block of flats. Whole block of flats: cz, dk, fi, de, lu, ro, se, sl, sk. Individual flats: be(f), be(w), ie, it, nl, no, pt, uk. Both: at, hu.

### *Building inspection*

Building inspection is dealt with in different ways in the MS. In 10 MS, building inspection is mandatory when certifying a flat or a block of flats, while 7 MS do not require inspection. In the remaining 2 MS, requirement for inspection depends on the actual situation and can be both inspection or not.

### *Individual heating systems*

Existence of individual and even different heating systems in the individual flats is one factor that makes certification of flats in a block of flats a special issue that is not straightforward to deal with. In 11 MS individual heating systems exist on a regularly basis in blocks of flats, while they are very rare in 7 MS.

### *Recommendations*

Recommendations for energy saving measures in a block of flats cover two levels of recommendations, namely recommendations that can be implemented by the occupant of the individual flat and recommendations that require a common decision to be able to be implemented in the whole block of flats.

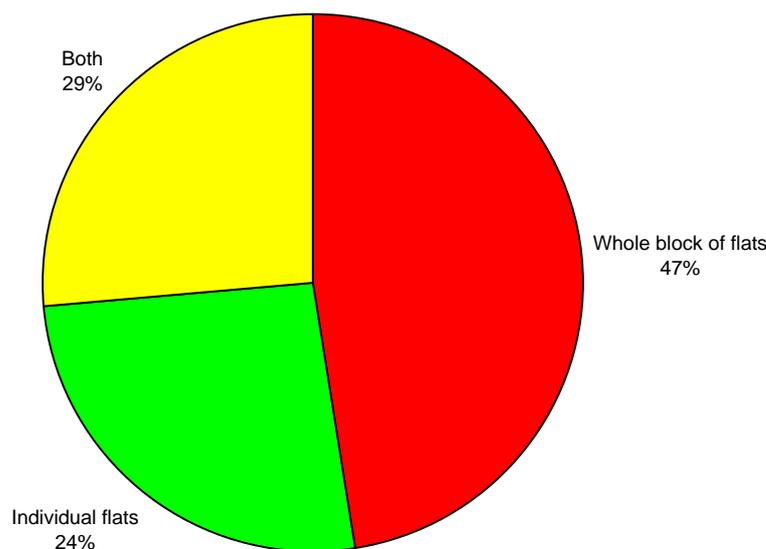


Figure 3. In about 50 % of the MS, recommendations are made for the whole block of flats, while 24 % make the recommendations for the individual flat. The remaining MS make recommendations as a combination of recommendations for the individual flat and for the whole building. Whole block: cz, dk, fi, de, lu, ro, se, sl, sk. Individual flats: be(f), ie, it, no, pt. Both: at, be(w), hu, nl, uk.

### *Owner vs. renter - conflict of interests*

Owners of a block of flats generally have different interests than the renters of the individual flats in terms of investments and energy bills. Often the owner has to deal with the costs for investing in energy saving measures while the renter gets a lower energy bill.

Most of the MS (15) who answered the questionnaire claim that the potential renter / owner conflict have no influence on the certificate, while 3 MS say that the conflict may influence the certificates.

### *Payment for the certificate*

The payment of the certificate is shared almost equally among the whole block of flats (owner or owner association) and the individual flats. In 8 MS the cost is shared by the whole block of flats, while in 7 MS it is given directly to the individual flat user/owner. In 3 MS the cost can be paid either by the occupant of the individual flat or shared by the whole block of flats.

### *Training of consultants*

In most MS there is no special training programme for consultants who are going to inspect blocks of flats. In 70 % (13) of the MS the same training programme is used as for the other certification schemes. Only 3 MS have a special training programme for consultants issuing certificates for flats and blocks of flats. The remaining MS have not answered the questionnaire.

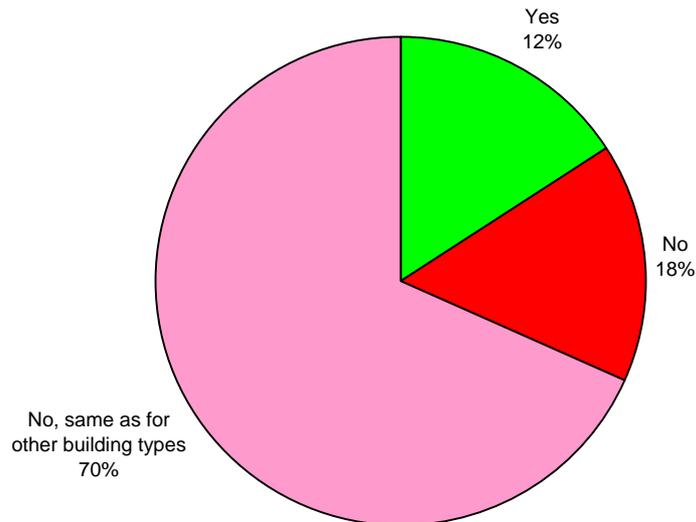


Figure 4. Special training programme for consultants who certify blocks of flats. Yes: at, dk, ro. No: cz, nl, no. Same as other buildings types: be(f), fi, de, gr, hu, ie, it, lu, pt, se, sl, sk, uk.

## 2. Country presentations

This report summarises the findings from three sessions dealing with the same topic: Certification of flats and blocks of flats. At the three technical sessions there were oral presentations from:

- Warsaw - December 2007: Norway, The Netherlands, France,
- Lyon – May 2008: Germany, UK (England & Wales), the Czech Republic,
- Prague – December 2008: Portugal, Austria, Belgium, the Walloon Region.

Flats need to have a certificate when the flat is rented out or sold. It can be issued for an individual flat, it can be issued for a whole building or it can be issued for a typical flat or units in the building. There are different approaches in different MS just as the conditions in multifamily houses differ from country to country. Therefore a range of different solutions exists.

In most cases energy consumption in the flat depends on the energy consumption of the whole building. Large blocks of flats are not much influenced by the occupant's behaviour in the individual flat. However, in small blocks of flats with a small number of flats, the energy consumption can be influenced by the individual occupant's behaviour. In general, units in the upper corners or other exposed locations of the building will use more energy than those situated in the middle of the building.

Measured rating might be a possibility in large residential blocks, while calculated rating might be the best solution in small buildings with flats.

When dealing with flats one should be aware of the many actors involved: owner, tenant, property manager, association of tenants etc. There can be conflicting interests when owners have to pay for improvements, while tenants or occupiers gain by the improved energy efficiency.

Regarding the energy advice, it is typically very limited what the individual owner or renter can do to the flat to improve the energy efficiency. Most improvements have to be agreed on and implemented for the whole building.

Different users and ownerships also influence the price of the certificate, the recommendations, the investments etc. Two owners in the same building might get very different benefits from their investments in improved efficiency, but often savings are only obtainable in a common project for the whole building. Technically easier to carry through and cheaper when made in common. This leads to a need to address both the individual occupants and the entire group of owners/occupants when making the certificate and the energy advice.

In terms of inspection, it proved to be impossible to visit all flats in a large block of flats, and it is often not necessary as many flats in the same block of flats are much alike. Some countries though have flats with individual heating and cooling systems and these flats have to be considered as single-family houses and must thus all be visited. The energy consumption and the energy savings will depend on how the metering and the payment systems for heating and cooling are set up. If common metering systems exist, the savings will also need to be shared.

## *Norway*

*William Rode, Norwegian Water Resources and Energy Directorate*

The Government has proposed to base the certification on data from the owner (self-assessment). This is done to stimulate the owners' (in particular residents') interest and responsibility in energy matters and with a wish to keep the energy certificate at a low cost. The label per se will thus be an indication rather than a precise assessment.

Independent experts may still have a role to play, but only when requested by the owner to carry out a more detailed certificate.

It is officially wished to make certification of individual flats rather than for whole buildings, but there might be a possibility also for certification of whole residential buildings. New buildings (including flats) often have energy certificates based on detailed design data given by the developer.

## **Pros**

- The method is cheap in terms of:
  - low (no) cost for the owner of the flat or block of flats,
  - minimised need for trained consultants,
  - reduced cost for administration of the scheme.
- It is easy to accomplish a good marked penetration and ensure quick certification of the majority of buildings.

## **Contras**

- A simplified method gives conservative estimates for the energy performance.

- To obtain a more realistic energy label, a more advanced method is required including inspection, EP calculation and recommendations by an expert.
- The scheme gives little incentive to carry out energy saving measures.

### *The Netherlands*

*Hans van Eck, SenterNovem*

The Netherlands have had a voluntary certification scheme since 1995 and makes the rating on an EPC (Energy Performance Coefficient) scale, which distinguishes between residential and non residential buildings. The scale has gradually been tightened over time.

New buildings do not need to have an energy certificate before they are 10 years old, and then they are considered to be 'existing buildings' and rated accordingly. The layout of the certificate is rather simple and in average existing buildings is labelled D.

Certification of flats in the Netherlands is done by certification of typical flats depending on their location in the block of flats. Flats, which are not inspected, are certified by "copy and paste" from a "similar" typical flat unless an acknowledged discrepancy between the typical flat and the actual flat is present. If a certificate is created by copy and paste, it is mentioned in the certificate.

Certification of flats and blocks of flats in the Netherlands is based on a standardised calculation of the energy performance.

#### **Pros**

- Copying information from one flat to another with the same characteristics saves time and thus cost.
- Most blocks of flats in the Netherlands have common heating systems, which makes the chosen method applicable.
- Gives a good estimate of the energy performance for the whole block of flats and facilitates identification of common energy saving measures.

#### **Contras**

- Rather time consuming to carry out calculations.
- The copy-and-paste method may lead to inaccuracies in certificates for individual flats.
- Requires many experts to carry out the inspection and calculations.

### *France*

*Marie-Christine Roger, Ministry for Ecology, Sustainable development and Spatial planning*

There are different schemes for blocks of flats. Which one to use depends on the type of heating system, which can common or individual. The same goes for systems for hot water production. Certification is made for the whole building or for the individual flat and the cer-

tificate is issued based on metered or calculated energy consumption. Which method to use depends on the building typology and the age of the building.

Certificates for individual flats are issued in a manner similar to that of the Netherlands, depending on the location in the block of flats, but inspection of selected flats are necessary. The same label is issued for all flats in the same block of flats. The certificate is paid by the owner of the flat.

Use of different rating methods depends on the age of the building and is considered as an acceptable simplification of the scheme.

### Pros

- The certification method used is tailored for the optimum solution under the given conditions, which should give the best possible certification at the lowest cost.

### Contras

- Maintaining different certification methods in the same scheme complicates matters for the public, the experts, and the authority managing the scheme.

## Germany

*Thomas Kwapich, dena*

The current status of the EPBD implementation in Germany is that EPBD has been implemented with the Energy Savings Ordinance (EnEV) and Energy Savings Ordinance came into force on 1 October 2007. Energy certification of buildings will be introduced stepwise:

- New buildings certification have been mandatory since 2002,
- Residential buildings constructed before 1965 are introduced by 1 July 2008,
- Residential buildings constructed after 1965 are introduced by 1 January 2009,
- Non-residential buildings will have to be certified by 1 July 2009.

For existing residential buildings there is a differentiated approach depending on the size of the building. From 1 October 2007 to 1 October 2008, all energy certificates for existing residential buildings can either be issued based on metered or calculated values. After 1 October 2008, existing residential buildings with less than 5 flats generally need certificates based on calculated performance rating. All other buildings have the right to choose between energy certification based on calculated or measured ratings.

The certification process itself will be introduced at different levels of detail in order to initiate competition. The Energy Savings Act allows a wide spectrum of quality standards for energy certificates which are:

- Both calculation-based and consumption-based energy certificates are permitted for most building types,
- Owners and issuers are allowed to collect the required data,
- Numerous simplifications for data acquisition are applicable,

- The qualification of the issuer (assessor) can vary (architects, engineers, craftsmen with different qualification levels are all permitted).

The recommendations form a separate part of the energy certificate and holds information about recommended energy saving measures. The form outlines cost-efficient recommendations to improve the efficiency of the whole building. If no recommendations are reasonable, the issuer needs to record this accordingly e.g. in case of a newly refurbished building or a new building. The issuer may make a comparison of different packages of energy saving measures, but this is optional. In case of comparing different packages of measures, primary and net energy consumption as well as CO<sub>2</sub> emissions are compared.

Energy certification of flats in Germany is made for the whole block of flats. There is no option for certification of the individual flats.

### Pros

- The calculated certification method is only used in small buildings where data can be collected and thus calculations easily performed.
- The measured rating system is quick and can be performed at low cost.

### Contras

- Different certification methods require different data collection mechanisms and energy performance of the two approaches are not directly possible.
- Data quality is uncertain due to differences in skills for the data collectors.

## *United Kingdom (England & Wales)*

*Paul Woods, Faber Maunsell*

Requirements for Energy Performance Certification (EPC) of flats and blocks of flats came into force in 2007 and covers flats and houses. The certification scheme is based on calculated rating, carried out by an accredited assessor. The certificates show two labels, one for primary energy consumption and one for carbon dioxide emission. The assessor must visit the property, but not necessarily all flats in the building.

Certificates are generated using the RDSAP software, which is a simpler version of the SAP software and generates labels on a scale from A to G. Recommendations are generated automatically (see M2 Lyon report from joint Core Theme 1 and 4 session *Recommendations for a detailed description of the method* at the Mayetic project centre). A certificate is valid for 10 years in the rented housing sector, while a new certificate needs to be issued every time a private property is sold.

The sampling and cloning process for production of EPCs is given in the following steps:

1. Identify groups of dwellings with similarities – owner's responsibility – probably from data records and based on RDSAP inputs e.g. one-bedroom mid-floor flats built in 1960 with gas boilers installed in 1980 and double glazing installed in 1990.

2. Identify a sample of flats within each group for modelling – and to be excluded from the group (responsibility of the Domestic Energy Assessor). This requires an external visual inspection. The suggested sample size is 50 % for a group of 10 flats and 20 % for a group of 100 flats,
3. Modelling of the sample flats and assessment of results to see if there are acceptable variations between sample dwellings,
4. Cloning of the sample flats to produce the other EPCs.

Using this procedure saves time, cost, and energy for all involved parties in the process of issuing and obtaining an EPC. Special training is required for assessor to understand and evaluate potential risks of the recommendations.

### Pros

- Calculated certification in a standardised tool.
- Simplifications and assumptions about small differences between individual flats and blocks of flats (cloning) keep the time consumption and costs low.

### Contras

- Energy performance differences between flats and blocks of flats will only be recognised with difficulty.

## *The Czech Republic*

*Jana Piecha, Ministry of Industry and Trade, Czech Republic*

Certification of a single flat is allowed, but all flats in the same building will generally have the same label. Inspection of the building is not mandatory for issuing a certificate. Energy consumption for the whole building is calculated and distribution of the heat within the building is handled via distribution of cost among individual flats as:

- A fixed share (40–50 %) of the total heating consumption distributed according to share of the total floor area (area is corrected for the clear height, possible inclination of floor structure, type of room).
- The remaining share of the heating consumption (60-50 %) distributed according to measurements in the individual flats and correction factors for location of the flat within the building.

Energy audits with assessment of the current state (environment, energy) of the thermal envelope and the technical installations have been voluntary since 1996 with a corps of authorised auditors and included recommendations on energy saving measures. The energy audit scheme was made obligatory in 2000.

Subsidy has been given to the Czech Republic technical school to develop a standardised software tool to facilitate energy certification. However the market is free and a similar tool has been made by a private company.

## Pros

- Simplifications and assumptions facilitate quick certification and at a low cost.
- More than 10 years of experience with the certification method.

## Contras

- It is difficult to ensure that two (or more) competing tools give the same results under all circumstances.
- Energy performance differences between flats and blocks of flats will only be discovered with difficulty if inspection is optional.

## *Portugal*

*Paulo Santos, ADENE*

The implementation process of building energy performance certification in Portugal was made step-wise:

- 3 July 2006: Revised technical regulations in force for new residential and non-residential buildings,
- 1 July 2007: Certification of new large (> 1000 m<sup>2</sup>) residential and non-residential buildings for which construction permit is requested,
- 1 July 2008: Certification of all new residential and non-residential buildings (independently of size) for which construction permit is requested,
- 1 January 2009: Certification of all buildings, new and existing, residential and non-residential.

Certification of multifamily buildings is done by the individual flat and it is done by calculated rating only. This may lead to different EP labels for each flat. Compared with certification of new buildings, many simplifications have been introduced for existing buildings, and it is possible to issue a certificate for an existing building in one day, which includes a mandatory inspection.

In general the recommendations of the certificate cover the individual flat, although recommendations for the whole block of flats may occur. To implement recommendations for the whole block will require an agreement among all owners in the building, which is not easy.

Until November 2008, no difficulties in the single flat certification approach have been identified. The calculation procedures for each flat in a new building can be performed more or less independently of the common structures and systems in a multifamily building.

## Pros

- Certification of the individual flat will give high acceptability if carried out with care.
- Some of the energy saving measures is directly targeted at the individual flat.

## Contras

- Some energy saving measures requires a joint decision in the whole block of flats in order to be carried out.
- Certificates issued by different experts for different flats in the same block may give differing recommendations for the whole block.
- Normally the assessor will be reluctant to suggest recommendations for the whole building as these can only be implemented if accepted from all the residents.

## *Austria*

*Christina Spitzbart, Austrian Energy Agency*

Austrian energy performance certificates always indicate the calculated energy demand of the building. The certificate can be made for the individual flat or the whole block of flats. The layout of the certificate is the same for the whole building and for the individual flat.

The label for the whole building and for the individual flat does not necessarily have to be the same. The label for the flats depends on the flat's location within the building, possible individual replacement of windows and other improvements. Furthermore individual ventilation rates of living spaces influence the value of the label.

The recommendations given in the certificate apply either to the whole building or the individual flat, depending on the unit that the certificate has been issued for.

Housing companies are likely to prefer certificates issued for the whole building, because they are used to this kind of certificates when applying for building permits or subsidies and it is a mandatory routine when selling or renting out a flat. Private owners of an individual flat on the other hand may prefer the individual certificate when selling or renting a flat, especially if they expect a better label for their flat than for the rest of the building.

## Pros

- Flexibility of choice as both flat and block of flats certification is available.
- Possible to choose the most cost-efficient type of certification, depending on ownership.

## Contras

- Certification of individual flats will only give recommendations for the certified unit, and thus no recommendations for the entire building.

## *Belgium, the Walloon Region.*

*Benoit Fourez, DGO4 - Department of Energy and sustainable Building*

A calculation method for energy performance and certification of existing residential buildings is finalised. Execution orders for certification are in preparation, including development of tools and training of experts.

Since 2004 there has been a voluntary action for new residential houses: "Build with energy". Furthermore the action aims to prepare the building sector with future statutory re-

quirements. A result of this action is that the owner is provided with a certificate, which is the first step towards certification of dwellings.

For the time being (December 2008), the Energy Advice Procedure (EAP) is only possible for existing single family houses. Audits are made by accredited experts with a degree in architecture or engineering including an additional 5 days training and a final exam. The EAP calculations are performed using standard software.

The thermal properties of every part of the building envelope are being classified on a ranking scale and have their own label. The recommendations are based on this classification. For each recommended improvement, the following information is given: energy savings, savings in terms of money, and payback time.

Certification of existing flats and blocks of flats will start in January 2010. Data from the certificates will be collected in a central database. Execution order is still under redaction and will probably enter into force in two steps:

1. selling
  - a. single family houses
  - b. multifamily houses
2. renting
  - a. single family houses
  - b. multifamily houses

The procedure for certification of flats and blocks of flats are still under discussion, but the proposal is as follows. Buildings with an individual heating system will be certified in the same way as single family houses. In buildings with a collective heating system, the audit of collective heating systems is made when certification of the first flat is requested. There will probably be two databases, one for the certificates and one for the results of audits of collective heating systems.

It is the intention to have 3 types of accredited experts:

- accredited experts for certification of single family houses and multifamily houses without collective heating system,
- accredited experts for certification of single family houses and multifamily houses without collective heating system and for Energy Advice Procedure,
- “elite” accredited experts for certification of multifamily houses with collective heating system.

### Pros

- Certification will be based on a voluntary scheme and experiences from this will be implemented in the mandatory scheme.

### Contras

- Different levels of experts complicate the administration of the scheme and the practical performance of the certification in the actual case.

## **5. Conclusion of topic**

The three sessions on Certification of flats and blocks of flats showed different ways of certifying flats and blocks of flats in the MS. The approaches and progress of the certifications process vary significantly.

It is difficult to have a simple certification method and at the same time provide individual certificates for each flat in a block of flats. There are both advantages and disadvantages of certifying each flat individually or certifying the entire block of flats as a whole.

It has been valuable and inspiring for the MS to learn about the different approaches for certification of flats and blocks of flats. Many different approaches are shown in presentations, depending on the certification methods used in the MS (calculated or measured values), age of the building, the ownership, and the type of the heating systems.

## **6. Future directions**

It is recommended to keep focus on this topic and if possible collect information about lessons learned when the certification schemes have been running for 5-10 years, and have been subject to potential revisions in the different MS.

## 7. Annex 1 – Warsaw meeting questionnaire

The questionnaire shown below was handed out and collected during the first session on the topic in Warsaw in December 2007.

		
<small>Danish Building Research Institute AALBORG UNIVERSITY</small>		
<b>Concerted Action II</b> <b>Questionnaire on Certification of Multi-family buildings and flats</b>		
Filled in questionnaire to: Kirsten Engelund Thomsen, Denmark		
<hr/>		
<b>General information</b>		
Filled in by:		
• Name: _____, Organisation: _____ Country: _____		
<b>1.1 Does your country have a certificate for blocks of flats and flats?</b>		
Yes: <input type="checkbox"/> No: <input type="checkbox"/>		
Status of the certification:		
Existing: <input type="checkbox"/> Planned: <input type="checkbox"/>		
<b>1.2 Year when a certification scheme for blocks of flats was/is expected to be introduced?</b>		
_____		
If "Yes" or "No, but Planned", in question 1.1, please continue with question 2.1.		
<b>2.1 Does your certification scheme for blocks of flats cover both new and existing buildings?</b>		
Yes: <input type="checkbox"/> No: <input type="checkbox"/>		
<b>2.2 Do your country use metered or calculated energy consumption for the certification of flats?</b>		
Metered (operational rating): <input type="checkbox"/> Calculated (asset rating): <input type="checkbox"/>		
<b>2.3 Is the certificate issued for the whole block of flats or for the individual flats?</b>		
Whole block of flats: <input type="checkbox"/> Individual flats: <input type="checkbox"/>		
<b>2.4 Is an inspection of the flat necessary?</b>		
Yes: <input type="checkbox"/> No: <input type="checkbox"/>		
<b>2.5 How is the payment done for the certificate?</b>		
For the whole building <input type="checkbox"/> and/or for each flat <input type="checkbox"/>		
<b>2.6 Do you have individual heating sources in different flats of the same block?</b>		
Yes: <input type="checkbox"/> No: <input type="checkbox"/>		
<b>2.7 Does your certificate give recommendations for the whole building or the individual flats?</b>		
Whole building: <input type="checkbox"/> Individual flats: <input type="checkbox"/>		
<b>2.8 Has the owner/renter conflict of interests any influence on the recommendations?</b>		
Yes: <input type="checkbox"/> No: <input type="checkbox"/>		
<b>2.9 Does your country have a special training programme for consultants who certify blocks of flats?</b>		
Yes: <input type="checkbox"/> No: <input type="checkbox"/> No, same as for other building types: <input type="checkbox"/>		
<b>2.10 Can you provide an electronic copy of a certificate for a block of flats and/or a flat?</b>		
Yes: <input type="checkbox"/> No: <input type="checkbox"/>		
<b>2.11 Can your country provide any "Lessons learned" concerning multifamily buildings and flats?</b>		
Yes: <input type="checkbox"/> No: <input type="checkbox"/>		

## Annex 2 – Answers to Warsaw meeting questionnaire

Answers to the questionnaire (See Annex 1) handed out at the first session dealing with the topic in Warsaw, December 2007.

Numbers refer to the numbers in the questionnaire shown in Annex 1.

Two answers are given from Belgium, and they represent the situation in the Flemish (F) and the Walloon (W) region of Belgium.

Table 1. Answers given during the first session (Warsaw meeting, December 2007) dealing with certification of flats and blocks of flats. In the cases where the answers in the table do not match the two possible answers in the questionnaire a marker have been placed for both answers.

Country	AT	BE(F)	BE(W)	CY	CZ	DE	DK	FI	GR	HR	HU	IE	IT	LV	LU	MA	NL	NO	PT	RO	SE	SL	SK	UK
1.1 <sup>1)</sup>	N	Y	N	N	Y	N	Y	Y	N	N	Y	Y	N	N	Y	N	Y	N	Y	Y	Y	Y	Y	Y
1.1 b <sup>2)</sup>	P	P	P	P	E	E	E	P			P	P	P		E	P	E	P	E	E	E	P	P	P
1.2 <sup>3)</sup>	2008 <sup>8)</sup>	2008	2010	2009	2007	2002	2006	2008		2009	2009	2007,8	2008		2008	2009	2007	2009	2007,6	2010	2007	2009	2008	2008
2.1 <sup>4)</sup>	No	N&E	No		N&E	No	N&E	N&E			N&E	N&E	No		No	N&E	No	N&E	N&E	N&E	N&E	N&E	N&E	N&E
2.2 <sup>5)</sup>	C	C	C		C	B	C	B			C	C	C		B		C	C	C	C	M	C	C	C
2.3 <sup>6)</sup>	B	F	F		W	W	W	W			B	F	F		W		F	F	F	W	W	W	W	F
2.4 <sup>1)</sup>	N	Y	Y		Y	N	Y	N			Y	?	?		N		Y	N	Y	Y	N	N	Y	Y
2.5 <sup>6)</sup>	B	W/F	W/F		W	W	W	W			B	W/F	W/F		W		W/F		W/F	W	W	B	W	W/F
2.6 <sup>1)</sup>	Y	N	N		N	Y	N	N	N		B	Y	Y		Y		Y	Y	Y	Y	B	Y	N	Y
2.7 <sup>6)</sup>	B	F	B		W	W	W	W			B	F	F		W		B	F	F	W	W	W	W	B
2.8 <sup>3)</sup>	N	N	N		N	N	Y	N			N	Y			N		N	N	N	N	Y	N	N	N
2.9 <sup>7)</sup>	Y	S			N	S	Y	S	S		S	S	S		S		N	N	S	Y	S	S	S	S
2.10 <sup>1)</sup>	Y	Y	N		Y	Y	Y	Y	N		Y	Y	N		Y		Y	N	Y	Y	Y	Y	N	Y
2.11 <sup>1)</sup>	N	N	N		Y	Y	Y	N	N		N	N	N		N		Y	N	N	Y	N	Y	Y	Y

1) Y = Yes; N = No; B = Both

2) E = Existing; P = Planned

3) Decimal numbers in the year indicates the month for introduction of a certification scheme for flats and blocks of flats.

4) N = New; E = Existing

5) C = Calculated; M = Measured; B = Both

6) F = Individual flat; W= Whole building; B = Both

7) Y = Yes; N = No; S = Same as for other building types

8) Certification for existing buildings will be introduced in 2009.