

**INCREASING THE KNOWLEDGE
ON ENERGY EFFICIENCY ISSUES
OF CONSTRUCTION PROFESSIONALS
IN CENTRAL AND EASTERN EUROPE:
A TRAINING NEEDS ASSESSMENT REPORT**

PART I: METHODOLOGY



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Note from the author

This document describes the methodology and the process of the training needs assessment within the frame of INTENSE. The analysis, results and conclusions will be added to this paper as part II at a later point.

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1. Introduction

This document is the first part of a target group assessment among different professionals from the construction sector in Central and Eastern European countries about their knowledge and needs for further qualification on issues of energy efficiency of new buildings. It is part of the project INTENSE – From Estonia till Croatia: Intelligent Energy Saving Measures for Municipal housing in Central and Eastern European Countries, which contributes to an improvement of energy efficiency in municipal housing in eleven countries: Estonia, Latvia, Lithuania, Poland, Czech Republic, Slovakia, Hungary, Slovenia, Romania, Bulgaria and Croatia.

The target group assessment, addressing architects, engineers, and construction workers, shall reveal information about the needs for further training and qualification to ensure, that building according to energy standards is implemented with a sufficient care and quality. This assessment is carried out within the activities of the WP5: Stakeholders Training Program, as a part of the overall project INTENSE.

The background Paper on implementation of the target group assessment is presented in two parts: addressing the prerequisites for this assessment and presenting summary of the results and conclusions on the training needs assessment of the target group.

Part I of the assessment describes the reasoning behind the target group assessment and the methodology used to gather suitable information that will allow the project team in charge of the training programme to design a curriculum that fits to the needs of the countries and which has a chance to become part of training and education programmes throughout the region also after the INTENSE has ended.

The subsequent chapter describes the procedures taken and the questionnaire which has been submitted to relevant stakeholders and explains, why it was constructed in the way as it can be found for reference in the annex.

2. Frame and scope of the assessment

2.1 Why a training programme for construction professionals?

The assessment is carried in the frame of a large-scale project to promote a holistic approach to energy efficient construction of new buildings all over Eastern Europe.¹ The development of the project has its origins the time of over-heated economies in Central and Eastern Europe with enormous activities in the building and construction sector. However, the quality of implementation showed that questions of energy efficiency were notoriously neglected and ignored.

One of the crucial factors explaining this phenomenon turned out to be a lack of knowledge and awareness among practically all important stakeholders from the construction sector. Customers were asking for cheap and fast solutions, investors were primarily interested in quick revenues, and both did not consider the long-term saving effects, although the initial investment might have been higher if energy efficiency measures were considered and included from the beginning. Yet, architects and engineers would have not been able to consult their customers on these benefits, as they themselves proved to lack competences and awareness of the topic. And finally, construction workers were largely not qualified and skilled enough in order to implement energy efficiency measures properly. Therefore, a training programme for construction professionals in Central and Eastern Europe should be developed that delivers to them information about the most crucial points of the whole construction process from the perspective of energy efficiency.

Many training programmes dealing with energy efficiency have been carried out in recent years, the project database of the Intelligent Energy Europe funding instrument gives an impressive insight (e.g. Training programme for local energy agencies and actors in transport and sustainable energy actions (TREATISE) – specific target group, Energy and Urban Planning In Restructuring Areas (ENPIRE) – addressing first of all Western Europe, Implementing EU Appliance Policy in Central and Eastern Europe (CEECAP), addressing Eastern Europe with a specific topic, just to mention a few examples) Most of these programmes focus on a very specific topic, target group, or fuel source. In INTENSE we look at the larger picture bringing together the different aspects of energy efficient urban planning down to details for construction and how to make energy efficient houses more attractive and desirable for citizens. Moreover, the peculiarity of the training programme in INTENSE is its specific geographic scope.

The training programme in INTENSE will be designed relying on experience from Western European countries, however, targeted to meet the conditions and needs especially in Central and Eastern Europe with a much shorter history of thinking about environmental protection in the way it is done in the old EU, and with a special heritage from Socialist times with regard to the building stock and less focus on long-term investments.

2.2 Getting to know the needs to tailor the training programme

Indications from the INTENSE preparation phase suggest, that the level of knowledge and need for more training on certain topics may vary from country to country. But in order to focus on the right topics in a long-term perspective this target group assessment is carried out prior to finally determining the actual

¹ The survey was carried out as part of the project From Estonia till Croatia: Intelligent Energy Saving Measures for Municipal housing in Central and Eastern European Countries (INTENSE), funded by the EU Commission's Intelligent Energy funding instrument, with reference no. IEE/07/832/SI.500392.

training sessions, which will be carried out within the frame of the project and afterwards.

The decisive question that needed to be answered was which method would allow the project team to gather sufficient information in a feasible and affordable way and the decision was taken to perform a Delphi assessment with professional experts that can be assumed to have an overview of the conditions of the construction sector in their country. With the Delphi-method, a form of surveying smaller groups in social science research, opinions on future trends and needs can be systematically gathered from experts. Earlier experiences showed that checking curricula of educational institutions, e.g. technical universities or professional qualification programmes is not advisable, as the level of information that may be obtained is too general.²

The assessment is carried out simultaneously in the following countries: Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romanian, Slovakia, and Slovenia.

It is important to point out here, that this assessment does not strive to be a fully representative and is not meant for research purposes. However, efforts for a systematic and methodologically guided investigation are needed to avoid as much as possible arbitrary and random results. The results should be indicative and should be guidance for the development of the programme.

As the financial and economic crisis has hit particularly the construction sector in the new Eastern European member states of the European Union, the assessment also will address this change of circumstances. Construction has come to a halt and this interruption offers a chance to evaluate what was done in the years earlier and to improve the quality and sustainability of buildings. Already now, the undesired results of fast and low-cost building becomes evident in many houses that have been built between Estonia and Bulgaria in the recent years and require repair works at high costs for the owners. It can be expected that in the future customers will demand for better quality and this demand can be met swiftly, if providers, i.e. particularly architects, engineers, and craftsmen are prepared for the new situation.

The following chapters will explain the methodology and the actual procedure within the project in greater detail.

3. Methodology

The assessment is carried out according to the so-called "Delphi-method", which has been described initially by Dalkey (1967). A first extensive compilation of variations of the Delphi-method was prepared by Linstone and Turoff (1975) and most recent developments and enhancements of Delphi are explained e.g. by Händer (2002) whose work has been also to some extent the guiding instrument for the activities here.

The Delphi method is used to systematically predict developments in the future, to collect opinions, or to find a consensus among these opinions, this also explains its designation "Delphi" in reference to the famous oracle in Ancient Greece (Händer, 2002). In modern times the Delphi method is often used in early steps of product research, e.g. to determine whether a certain technology will have a chance to prevail over others in the future. Alternatively, Delphi can be

² We refer here to the results of the project "Developing concepts for innovative and energy efficient construction of new buildings (2007-2009)" funded by the German Federal Environment Foundation, where exactly this has been tried out, although for slightly different purposes, and has had an impact on going a different way here.

used to collect ideas and systematically sort them, or just to identify major trends among widely varying opinions on a given problem.

No matter, which form of Delphi-assessment is chosen, the procedures do not vary very much from each other. Rather, the topic and way how questions are formulated make the difference.

Mainly, Delphi is used for smaller groups of respondents. Usually we speak about experts in a specific field. The charm of the method is in fact, that it helps to avoid several traps which are frequently causing biased results with other methods, like interviews, brainstorming, or other forms of discussions in meetings.

One important aspect is that the Delphi assessments are carried out in written form, where a questionnaire is prepared (open and closed question can be used alike) and which each respondent is answering independently from the others.

In this way, interviewer effects can be avoided, as well as it may be difficult to find a meeting with many important experts in one field. Delphi also helps to prevent psychological traps that may occur in meetings. In face-to-face situations there is a tendency that the most dominant participant may assert himself, while this may not necessarily be the most dominant opinion among other participants of that meeting (Häder, 2002).

Another feature of Delphi is its stepwise involvement of the respondents. In comparison to an ordinary expert survey, which is usually a one-off action, there are several steps in Delphi assessments. There are usually two to a theoretically endless amount of rounds of questioning of the same group of respondents. While from the second round onwards, the questionnaire is only minimally modified and the participants see for each question the mean value of the past rounds. If one respondent's opinion varies from the average of all respondents, this person is forced to reflect about his or her own position and either agrees with the average or stays with the opinion, but is then asked to explain further why his or her opinion is different. Eventually, a near consensus can be reached among the opinions. This partly, what will be applied within the INTENSE training needs assessment – there are however, other variants and purposes of Delphi, which will not be referred to in this paper in greater detail. A research on Delphi assessments have revealed however, that in practice acknowledge experts tend to stick to their opinion and that already a third round of questioning tends to bring only minor changes to the results (Häder, 2002).

Questioning in several rounds requires intermediate assessments of the results. With the help of online-questionnaires and a suitable survey environment where the data are collected the time needed to prepare the subsequent round can be minimized substantially. Looking at the large geographic scope INTENSE across 11 countries, this method overall appears as the most applicable for the needs in the project.

4. Procedure

4.1 Mode and monitoring team

The challenge within the INTENSE project is the large amount of countries and the question of to effectively manage the given resources. Therefore achieving near consensus among the across the countries is desirable.

This mode usually requires setting up a monitoring team which is in charge of the development, supervision, and analysis of the survey. The monitoring team also formulates the conclusions for the further development of the training programme.

In our case the monitoring team consisted of the core team for the training action, i.e. of senior experts from the project partner Energie + Umweltzentrum am Deister e. V., an institution with many years of experience in training of construction professionals related to energy efficiency and chiefly responsible for the later shape of the training programme activities, the action manager, coordinating the subaction of the training work package in INTENSE from the Baltic Environmental Forum Estonia, and one additional expert on empirical methods of social science research, from the Baltic Environmental Forum Germany.

By default, the whole project is designed in that way, that in each participating country there is a local coordinating partner team which is supporting the action lead and which is responsible for implementation locally. These eleven coordinating partners are not part of the monitoring team, with the exception of Estonia, where the partner is action lead and country coordinator in one.

4.2 Definition of the target group and selection of experts

The list of potential training modules (cf. Table 1) is very comprehensive, however its core parts are addressing architects, engineers, and craftsmen. In order not get a too diverse target audience for the survey, only these three groups were selected as the target group and no other ones included into the design.

During last two years a project³ about energy efficiency in construction was carried out in selected Eastern European countries (Estonia, Latvia, Lithuania) where professional associations of above mentioned target groups were also approached to get an overview of related knowledge gaps. The results showed that in general the knowledge of the members of the associations were rated to be around 6-7 on the scale of 10 where 1 represented poor knowledge and 10 excellent knowledge. But it was pointed out that this doesn't mean that there is no need for awareness raising. Additionally construction related curricula were assessed taking into account energy efficiency criteria and it was shown that energy efficiency is not very deeply integrated to the current study programmes based on which the target group is taught.

To get a comprehensive overview of the training needs in the target countries on the one hand, but to keep the amount of questioned experts limited, it appeared justified to address the national divisions of unions and associations of these professional groups. These were identified for each country usually representing the following higher levels in the organisation.

The experts were contacted by the eleven coordinating partners beforehand to ensure their principle willingness to participate in the Delphi rounds.

4.3 Development stages of the questionnaire

The design of the questionnaire is seen as a vital part of the implementation of the assessment. Therefore, major efforts were allocated to optimize the questionnaire – both, in terms of its length (number of questions included) and degree of knowledge, as well as the choice of the most suitable language for implementation of the assessment in multi-lingual settings, consequently several attempts were needed.

Initially, a first set of relevant questions was developed which resembled the list of potential training modules (cf. Table 1) and which would lead to results that would allow making decision for which level to prepare the training units.

³ We refer here to the project “Developing concepts for innovative and energy efficient construction of new buildings” (10/2007-03/2009). The project was funded by the German Federal Foundation for the Environment, with the main beneficiary being the Baltic Environmental Forum Deutschland e. V. The final project report with details on this small assessment in Estonia, Latvia, and Lithuania can be obtained from the author.

The initial list proved to be too long and therefore required several steps of down-sizing, while ensuring that all aspects remain covered eventually, leading to a testable questionnaire. This questionnaire was provided to all participating countries where it was translated into national languages and a bilingual version was provided to experts from the partner municipalities which tested and commented the questions. Originally, the team was confident that more of the selected experts would be able to answer the survey in English; however, a thorough checking required to revise and to translate the questionnaires. Consequently this required also to pre-test all translated versions.

Given, that the topic is rather specific and one of the major challenges is to ensure that it is identical in all relevant languages of the project team, this procedure turned out to be very time consuming and required additional efforts between the development team of the project and the translators among the partners in the countries.

The pre-testing revealed that the questionnaire still was perceived as too long and that some questions cause misunderstandings or misinterpretations in several languages. Therefore the questionnaire was once more shortened and the findings from the pre-testing included and given again for translation. Taking the feedback from the testing into consideration is generally an important part of development of a questionnaire, but has a particular importance, when dealing with many countries and languages.

4.4 Mode of questioning

Taking into consideration the advantages of online survey (as briefly addressed in Chapter 3) this mode of questioning was selected. Respondents were given the option to switch to the source language either in national language or using "English" at any time during the survey, which might be helpful in some cases to avoid any remaining misunderstandings.

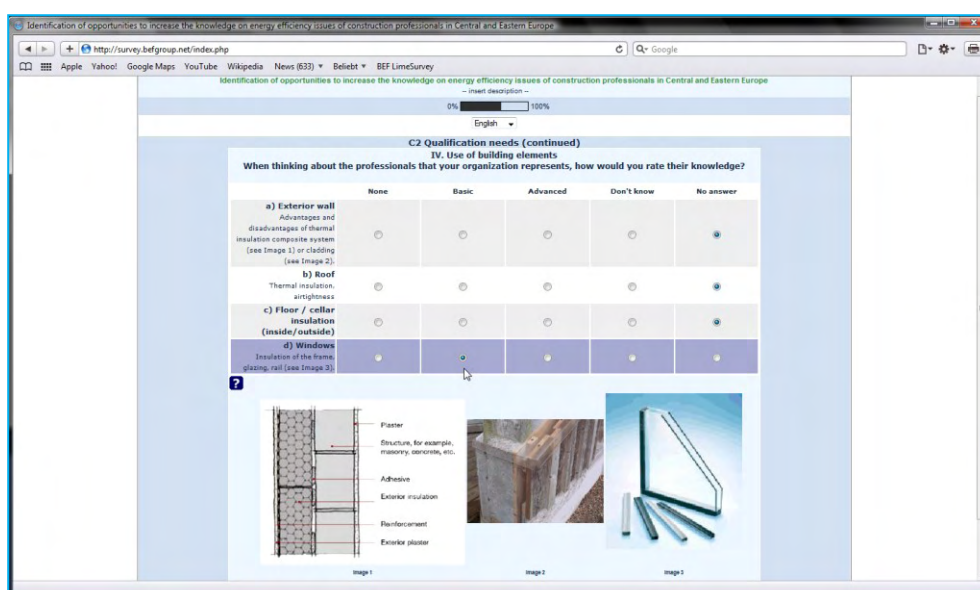


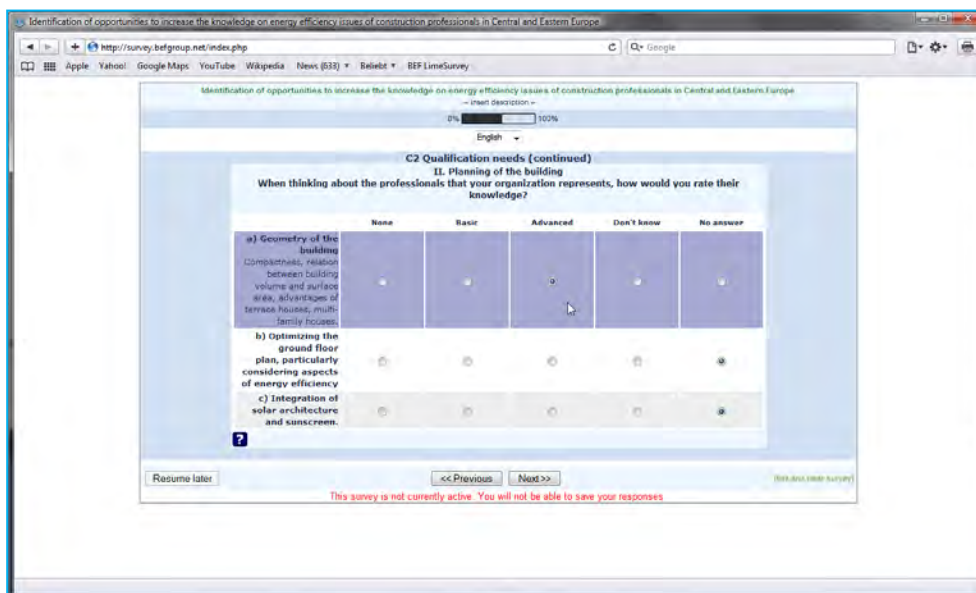
Table 1: Potential training modules

TOPIC / MODULE	1	2	3	4	5	6	7	8	9	10	11
STAKE-HOLDER GROUPS	Legislation	Settlement planning	Regional conditions; Adapting to Climate Change.	Energy carriers; RES	Building physics	Construction elements; solutions (windows, walls, doors)	Systems engineering (heating & cooling)	Retro-fitting	Best practice	Cost-benefit assessment	Methods of awareness raising; households
GROUP 1: Already high qualification: Architects, Engineers, University lecturers											
GROUP 2: Practical orientation: Vocational school teachers, craftsmen											

No shade - we assume that this particular group does not need this specific module;
 Light gray- we assume that the training module is needed;
 Dark gray – we assume that more than basic knowledge should be transferred.

5. The questionnaire

In the following section we explain the structure of the final questionnaire and the reasoning behind the selection of the questions. The questionnaire is built-up in three sections: A. Personal information, B. Expectations towards the development of the housing market in the respondents country, and C. Gathers information about qualification needs.



In total 37 questions are included. These are almost exclusively closed questions, in sections B and C, and some open questions in the first section on very individual information about each respondent.

For illustration, in the annex to this document, we provide an example of a full questionnaire in English and in one of the national languages (Czech version), providing also an information about how it is presented to the respondents online.

5.1 Section A: Personal information

Since the level of experience is crucial to evaluate the answers of a respondent, this section was positioned at the beginning of the questionnaire. However it does not contain any point of exclusion, which would stop the questionnaire in case a respondent does not have a sufficient level of experience that it would allow him or her to make statements about the whole professional group which he or she represents. This was tried to ensure already during the selection process.

The questions in this section gather information about the qualification of the respondent (professional and other qualification not related to construction businesses, work experience, etc.).

5.2 Section B: Expectations towards the development of the housing market in your country

Section B addresses issues related to the future development of the housing market and the demand for energy or passive houses in the target countries. These questions shall give an indication to what extent the topic of energy efficiency has reached the target groups, but also shall give an idea, whether the

respondents believe that the economic crisis has stalled activities in the construction sector completely in the mid or even long-term.

Moreover, we try to understand whether there are generally prevailing obstacles that hinder reaching a low-energy standard of approximately 30-60 KWh/m² × year of heating demand. We have explicitly excluded here the issue of financial resources, as this issue will be addressed in other actions of the INTENSE project. Here, we ask for the availability of qualified professionals, the existence and enforcement of quality control procedures that ensure a proper execution, and we ask for any legal or administrative barriers that exist on any administrative level in the country, which could prevent the promotion of more energy efficient ways to build a new house.

5.3 Section C: Qualification needs.

The third section in this questionnaire shall directly answer to the specific qualification needs. As mentioned earlier, it covers the whole range of topics of potential training modules that can be developed by the project team (cf. Table 1: Potential training modules Table 1 and list below). The topics are listed and at first we ask about the level of attention these topics should receive, when carrying out a qualification programme that aims to increase the capacity of professionals in the field of energy efficiency. These answers can be ranked by country and compared to establish groups of countries with similar profiles for the training of trainers programme which will be carried out in the frame of the project.

The subsequent questions check subtopics of each potential module further, and ask for the level of knowledge the respondent would attribute to the professional group, which he or she represents.

Table 2: Topics addressed in Section C of the questionnaire

Topic Rated according to level of attention needed in the country in a specially designed capacity building programme (No attention to very high attention)	Specifications Rated according to level of knowledge among the professionals which the respondent represents (Basic, Average, Advanced)
I. Best practice Providing knowledge and information about objects already implemented (in your and/or other countries) in a short profile.	<i>No specification questions or checked in other subsections</i>
II. Settlement planning Information about holistic and sustainable planning	a) Planning principles for energy efficient settlement planning b) Urban sprawl and density of buildings
III. Regional climatic conditions	<i>No specification questions or checked in other subsections</i>
IV. Legislation	a.) Knowledge of national and EU legislation
V. Building concept and planning of the building Knowledge about the development of a building concept with regional, national, or European future (trend-setting) standards observing requirements of regional, national, technical, and historical (traditional) dimension. Optimize the first sketch of the building according to compactness and heating/cooling components of the building.	a) Consumption of energy Knowledge about standards of energy consumption according to legislation and future standards considering ecological and economic aspects. b) Systems engineering (heating, solar energy, air ventilation, heat recovery) Knowledge about systems engineering according to energy standards of the buildings, integration of solar-thermal systems, solar cooling systems

Topic Rated according to level of attention needed in the country in a specially designed capacity building programme (No attention to very high attention)	Specifications Rated according to level of knowledge among the professionals which the respondent represents (Basic, Average, Advanced)
	c) Type of energy Knowledge about exploitation of energy sources available in the building area, pay special attention to low consumption of primary energy
VI. Planning of building elements Using best practice of constructions concerning energy efficiency and humidity-balance to avoid structural damage (caused by the humidity)	a) Geometry of the building Knowledge about compactness, the relation the between building volume and surface area, advantages of terrace houses, multi-family houses b) Optimizing the ground floor plan, particularly considering aspects of energy efficiency c) Integration of solar architecture and sunscreen
VII. Planning a construction in detail Referring to V. And VI. Further optimize the construction, taking into consideration all building elements	a) U-value Heat conductivity, calculation according to EN 6946 b) Humidity Sources of vaporization, rate of saturation of condensation, rate of air change per hour c) Heat accumulator Influence of materials related to inside temperature of the building d) Thermal bridge Knowledge about important thermal bridges and how to avoid them e) Air tightness Avoidance of unnecessary jointing and leakages, avoidance of draught inside the building, carrying out a Blower-door-test (according to EN 13829) f) Insulation materials Properties, scope of correct application, eco-balance, lifecycle of materials (production, processing, application, and disposal)
Use of building elements (topic in the section on specific knowledge only)	a) Exterior wall Advantages and disadvantages of thermal insulation composite systems or cladding b) Roof Thermal insulation, air tightness c) Floor / cellar insulation (inside or outside) d) Windows Insulation of the frame, glazing, rail
VIII. Heating system Knowledge about heat production in different heating systems, looking at CO ₂ emissions and efficiency level according to prEN 13790:2004	a) Primary energy Pollution, differences, oil, gas, biomass, NOT district heating b) Heating generators Differences of efficiency levels, emission temperature, electric power consumption, energy losses in heat distribution c) Differences between central heating and decentralized solutions

Topic Rated according to level of attention needed in the country in a specially designed capacity building programme (No attention to very high attention)	Specifications Rated according to level of knowledge among the professionals which the respondent represents (Basic, Average, Advanced)
	d) Control systems Regulation of room temperature, adaptation to heating generator, automatic regulation, time needed of a preset system to reach desired temperature
IX. Ventilation Knowledge about the importance of ventilation systems, advantages and disadvantages related to energy efficiency	a) Air exchange Rate and right behaviour to air rooms, indoor humidity, and comfort b) Ventilation Mechanical systems (with or without heat recovery) c) Ventilation with cooling Heat pump with cooling function d) Calculation and dimension of ventilation system
X. Combined heat and power, district heating Opportunities and limitations for these installations in different local conditions	<i>No specification questions or checked in other subsections</i>
XI. Energy calculation and energy balancing Knowledge about the calculation of energy use for space heating according to EN ISO 13790	a) Heating degree days (in Kelvin-days / Kd) Looking at climatic conditions in future perspective b) Heat generation and transmission c) Solar benefit d) Interior sources Lost heat from persons, electric appliances, lighting, etc. e) Energy exchange caused by ventilation f) Overall degree of energy loss g) Using application software
XII. Quality control Increasing the quality of the building already by checking, if the actual implementation is in accordance with national standards (compliant with EU directives)	a) Quality control of the planning b) Quality control of the execution
XIII. Properly informing inhabitants How to provide information to the inhabitants of a building about "how to live in a low-energy house"	<i>No specification questions or checked in other subsections</i>
XIV. Costs, profitability (repayment), and other benefits	a) Alternative options for construction and their specific effectiveness b) Calculation software to determine the cost-effectiveness of a low-energy building
XV. Awareness raising Informing comprehensively and to promote low-energy houses and better quality (long-lasting, but maybe more expensive initially, no cheap solutions)	<i>No specification questions or checked in other subsections</i>

The two question groups related to the modules also provide an opportunity to request for more information in case of inconsistencies or contradictions in the answers.

6. Concluding remarks

Looking at the technical side of the survey as it has been planned and implemented to the present point, there are a few aspects, which should be taken into consideration when carrying out a similar action, regardless of whether a Delphi type survey is carried out, interviews are conducted. These points mentioned here may seem, logical or obvious, yet, they are so crucial, that it is always wise to remind oneself.

Sufficient time should be allocated to such a survey, even if it is addressing a large scale of respondents, and a huge amount of data is collected. Questions on very specific topics require more time until they are sufficiently formulated. Now, additionally, having to translate the questionnaire into many languages, as it is the case in our project requires additional time.

A careful translation often reveals weak points of the questionnaire which have not been considered by the team, which constructed it. Either the target language does not know specific terms, which bears the risk of being not precise enough or later not sure whether the results are actually comparable. Often however, these issues do not become overt: each party assumes that the translation resembles the original. This cannot be avoided when working in such multiple-language settings, but be aware and take it double check more often than less.

However, it is worth investing the time and also to involve more people in the preparation of any questionnaire and to let them look at the questions from different angles, always asking themselves: what kind of information does a question 'produce'. It will surely increase the quality and the value of the results.

7. References

- Dalkey, N. C. 1967. Delphi. In: *Second Symposium on Long-Range Forecasting and Planning*. RAND Corporation, Almagordo, NM.
- Häder, M. (ed) 2002. *Delphi-Befragungen. Ein Arbeitsbuch*, Westdeutscher Verlag, Wiesbaden.
- Linstone, H. A. & Turoff, M. 1975. *The Delphi method: techniques and applications*, Addison-Wesley Pub. Co., Advanced Book Program, Reading, Mass.

8. Annex

Questionnaire (Bilingual example English and Czech)

On the following pages

A. PERSONAL INFORMATION**A. OSOBNÍ ÚDAJE**

[010] For how many years have you been working in the construction sector (incl. planning and execution)?

[010] Kolik let pracujete ve stavebním odvětví (včetně výkonné a plánovací oblasti)?

méně než 1 rok 1-3 roky 3-5 let 5-10 let více než 10 let

[020] What is your qualification?

[020] Jaká je vaše kvalifikace?

[030] Are you working exclusively with for the union or association?

[030] Pracujete výhradně v zastoupení svazu (resp. sdružení, asociace ap.)

ANO → pokračujte k otázce 040

NE → pokračujte k otázce 031

[031] What is your current other profession?

[031] Jaká je Vaše stávající jiná profese?

[032] For how long have you been working in this profession?

[032] Jak dlouho pracujete v této profesi?

méně než 1 rok 1-3 roky 3-5 let 5-10 let více než 10 let

[040] Please, name other experiences (more than 3 years) which are not related to construction:

[040] Vyplňte, prosím, další pracovní pozice (trvající déle než tři roky), které se nevztahují ke stavebnímu odvětví:

Description Popis	How many years? Kolik let?	Space for remarks Poznámky
a)		
b)		
c)		

[050] Have you participated in any seminars/workshops/trainings in the past 5 years which were related to your profession?

[050] Zúčastnil/a jste se v posledních 5 letech nějakých seminářů, workshopů či školení, které se vztahují k Vaší profesi?

ANO → pokračujte k otázce 051

NE → pokračujte k otázce 110

If YES, please name the most recent ones.

Pokud ANO, vypište, prosím, poslední z nich:

Type of event: <i>Training/ Workshop/ Seminar/ Conference</i> Typ události <i>Školení/Workshop/Seminář/Konference</i>	Year Rok	Key words about its contents Klíčová oblast události
a)		
b)		
c)		

B. EXPECTATIONS TOWARDS THE DEVELOPMENT OF THE HOUSING MARKET IN Czech Republic
B. VÝHLÍDKY NA ROZVOJ BYTOVÉHO TRHU V ČR

[110] Assuming, roof, windows, or walls shall be newly installed/modernized to a low-energy standard (30-60 KWh/(m²×year) heating demand) and the financing is secured, to what extent do the following statements apply to your country?

[110] Předpokládejme, že mají být nově instalovány případně modernizovány střechy, zdi nebo okna na nízkoenergetický standard (spotřeba na vytápění 30-60 kWh/(m²×rok) a financování je zajištěno. Jaké tvrzení odpovídá nejlépe stavu v ČR?

	Zcela souhlasí (1)	(2)	(3)	(4)	(5)	(6)	Zcela nesouhlasí (7)	Nevím
a) Sustainable building materials are easily available. a) Stavební materiály vyhovující požadavkům udržitelného rozvoje jsou snadno dostupné	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Sufficiently qualified craftsmen are hard to find. b) Je obtížné nalézt dostatečně kvalifikované řemeslníky	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) This low energy standard cannot be achieved because sufficiently qualified architects/engineers are hard to find. c) Tohoto nízkoenergetického standardu nelze dosáhnout, protože je obtížné nalézt dostatečně kvalifikované architekty a stavební inženýry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) The existing quality control procedures allow this low-energy standard (Quality control refers to the implementation/building phase). d) Stávající postupy kontroly kvality umožňují dosáhnout tohoto nízkoenergetického standardu (Kontrola kvality se vztahuje k legislativě a stavebnímu procesu)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) The national legislation does have incentives that make it attractive to construct a house with such a low-energy standard. e) Státní legislativa vytváří podněty, které motivují ke stavbám nízkoenergetických budov	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) There are too many administrative/legal barriers that make it not attractive to build according to this standard. f) Existuje příliš mnoho administrativních a právních překážek, které komplikují stavby nízkoenergetických budov	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[120] Thinking about the demand for low-energy houses (30-60 KWh/(m²×year)), how would you estimate the demand in your country?

[120] Jak byste odhadli/a a odhadl/a poptávku po nízkoenergetických domech (30-60 kWh/(m²×year) v ČR?

	Žádná poptávka									Velmi vysoká poptávka		Nevím
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		
a) Nyní?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
b) Za 2 roky?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
c) Za 5 let?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
d) Za 10 let?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

[130] Thinking about the demand for passive houses (15 KWh/(m²×year)), how you estimate the demand?

[130] Jak byste odhadli/a a odhadl/a poptávku po pasivních domech (spotřeba na vytápění nanejvýš 15 kWh/(m²×rok) v ČR?

	Žádná poptávka									Velmi vysoká poptávka		Nevím
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		
a) Nyní?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
b) Za 2 roky?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
c) Za 5 let?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
d) Za 10 let?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

[140] How would you estimate the demand for mechanical air ventilation or ventilation systems with heat recovery?

[140] Jak byste ohodnotil/a a odhadl/a poptávku po systémech nuceného větrání nebo nuceného větrání s rekuperací tepla v ČR?

	Žádná poptávka									Velmi vysoká poptávka	Nevím
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
a) Nyní?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Za 2 roky?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Za 5 let?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Za 10 let?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[160] Thinking about CHP (Combined Heat and Power) and district heating, how do you estimate the demand in your country?

[160] Jak byste ohodnotil/a a odhadl/a poptávku po kogeneračních jednotkách a centrálním zásobování teplem v ČR?

	Žádná poptávka									Velmi vysoká poptávka	Nevím
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
a) Nyní?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Za 2 roky?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Za 5 let?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Za 10 let?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[170] Thinking about the demand for **new** living houses in general, how would you estimate their demand?

[170] Jak byste ohodnotil/a a odhadl/a poptávku po **nových** domech obecně?

	Žádná poptávka									Velmi vysoká poptávka	Nevím
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
a) Nyní?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Za 2 roky?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Za 5 let?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Za 10 let?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C. QUALIFICATION NEEDS

INTENSE Background Paper

Part I: Methodology: Identification of opportunities for capacity-building

C. KVALIFIKAČNÍ NÁROKY

[210] According to your opinion, which of the following topics should receive special attention when carrying out capacity-building, to achieve a higher qualification that focuses on energy efficiency? Assign the level of importance to each of the following items

[210] Které z následujících témat zasluhuje podle Vašeho názoru zvláštní pozornost pro zlepšení kvalifikace v problematice úspor energie?

	Zcela nedůležité									Nepostradatelné
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
a) Best practice Providing knowledge and information about already implemented objects (in your and/or other countries) in a short profile a) Nejlepší techniky Stručné poskytnutí znalostí a informací o již implementovaných technikách (v ČR i v zahraničí)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Settlement planning Information about holistic and sustainable planning b) Plánování osidlování Informace o holistickém a udržitelném plánování	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Regional climatic conditions c) Regionální klimatické podmínky	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Legislation d) Legislativa	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Building concept and planning of the building Knowledge about the development of a building concept with regional, or national or European, future (trend-settings) standards under observance and requirements of national, regional, technical and historical dimensions and existing culture of buildings. Optimize the first sketch of the building envelope according compactness and heating/cooling components e) Územní plánování a plánování budovy Povědomí o vytváření územního plánu na základě budoucích (předpokládaných) regionálních, národních nebo evropských standardů se zřetelem k národním, místním, technickým a historickým zvyklostem a stávajícímu typu zástavby. Přizpůsobení prvotního návrhu pláště budovy požadavkům na statiku, vytápění a chlazení budovy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Planning of building elements Using best practice of constructions concerning energy efficiency and humidity-balance to avoid structural damage. f) Plánování základních součástí budovy Uplatnění nejlepších stavebních technik pro dosažení nízké spotřeby, s ohledem na vlhkostní chování konstrukce	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Planning a construction in detail Referring to e) and f) further optimize the construction, taking into consideration all building elements. g) Detailní plánování staveb Optimalizace všech prvků budovy stejně jako je uvedeno v bodech e) a f.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Heating system Knowledge about heat producing in different heating systems under CO2 emission and efficiency level according to prEN13790:2004 h) Topný systém Znalosti o produkci emisí CO2 v různých vytápěcích systémech (při účinnostech uvedených v ČSN EN ISO 13790)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Ventilation Knowledge about the importance of ventilation systems, advantages and disadvantages related to energy efficiency. i) Větrání Znalosti významu větracích systémů, výhodách a nevýhodách, znalosti o úsporách energie, které tyto systémy přinášejí	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) Combined heat and power, district heating Opportunities and limits for these installations in different local conditions j) Kogenerační jednotky, oblastní vytápění Možnosti a omezení těchto zařízení za různých lokálních podmínek	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) Energy calculation, energy balancing Knowledge about Calculation of energy use for space heating according to EN ISO 13790 k) Výpočet energie, energetická rovnováha Znalost výpočtu spotřeby energie pro vytápění podle normy ČSN EN ISO 13790	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

INTENSE Background Paper

Part I: Methodology: Identification of opportunities for capacity-building

l) Quality control Increasing the quality of the building already by checking the implementation in accordance with national standards (compliant with EU directives). l) Kontrola kvality Zvyšování kvality budov kontrolou provedení v souladu s národními standardy a direktivami EU	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m) Informing the inhabitants How to provide information to the inhabitants of a building about "how to live in a low-energy house" m) Informování obyvatel Jak poskytnout obyvatelům budovy informace o "Životě v nízkoenergetickém domě"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n) Costs, profitability (repayment), and other benefits n) Náklady, rentabilita a další výhody	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o) Awareness raising Informing comprehensively to promote low-energy houses and better quality (long-lasting, but maybe more expensive instead of cheap solutions) o) Zvyšování povědomí Komplexní informace k propagaci nízkoenergetických domů a lepší kvality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[220] When you think about the professionals that your organization represents, how would you rate their knowledge?

[220] Jak byste ohodnotil/a znalosti odborníků ve Vaší společnosti v následujících oblastech?

	Znalosti			
	Žádně	Základní	Odborně	Nevím
I. Building concept I. Koncepce výstavby				
a) Consumption of energy Knowledge about standards of energy consumption according to legislation and future standards considering ecological and economical aspects. a) Spotřeba energie Znalosti požadavků na spotřebu energie ve vztahu k legislativě a budoucím požadavkům, které budou zahrnovat ekologické a ekonomické aspekty.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Systems engineering (heating, solar-energy, air ventilation, heat recovery) Knowledge about systems engineering according to the energy standards of the buildings, integration of solar-thermal systems, solar cooling systems. b) Návrh TZB (technického zařízení budovy) (vytápění, solární energie, větrání, rekuperace) Projektování TZB s ohledem na požadavky na energetickou náročnost budov; integrace solárních topných a chladících zařízení	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Type of energy Knowledge about exploitation of energy sources available in the building area, paying special attention to low consumption of primary energy c) Typ energie Povědomí o využití místně dostupných zdrojů energie, se zvláštním ohledem na snížení spotřeby primární energie.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
II. Planning of the building II. Projektování budovy				
a) Geometry of the building Compactness, relation between building volume and surface area, advantages of terrace houses, multi-family houses a) Geometrie budovy Kompaktnost, vztah mezi objemem budovy a zastavěnou plochou, výhody terasových domů, bytové domy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Optimizing the ground floor plan, particularly considering aspects of energy efficiency. b) Optimalizace zastavěné plochy, s přihlédnutím k aspektům úspor energie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Integration of solar architecture and sunscreen. c) Začlenění prvků solární architektury a slunečních clon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[220] Continued: When you think about the professionals that your organization represents, how would you rate their knowledge?

[220] Pokračování: Jak byste ohodnotil/a znalosti odborníků ve Vaší organizaci v následujících oblastech?

	Znalosti			
	Žádné	Základní	Odborné	Nevím
III. Planning a construction in detail III. Detailní plánování staveb				
a) U-value Heat conductivity, calculation according to EN 6946 a) Součinitel prostupu tepla Teplotní odpor a součinitel prostupu tepla - výpočet podle normy ČSN EN 6946	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Humidity Sources of vaporization, rate of saturation of condensation, rate of air change per hour b) Vlhkost Zdroje vlhkosti, vlhkostní bilance konstrukce, rosný bod, vliv větrání	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Heat accumulator Influence of materials related to the inside temperature of the building c) Tepelná akumulace Vliv materiálů na teplotu uvnitř budovy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Thermal bridge Knowledge about important thermal bridges and methods how to avoid them d) Tepelný most Povědomí o tepelných mostech a metodách jejich eliminace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Air tightness Avoidance of unnecessary jointing and leakages, avoidance of draught inside the building, carrying out a Blower-door-test (according to EN 13829), carrying out a Blower-door-test (according to EN 13829) e) Vzduchotěsnost Zamezení nadbytečného těsnění a eliminace průduchů, zamezení nadměrného sucha uvnitř budovy, provádění Blower-door-testu (testu průvzdušnosti) podle normy ČSN EN ISO 13829	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Insulation materials Properties, scope of correct application, eco-balance, lifecycle of materials (production, processing, application and disposal) f) Izolační materiály Vlastnosti, oblast použití, ekologická rovnováha, životní cyklus materiálů (výroba, zpracování, použití, likvidace)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[220] Continued: When you think about the professionals that your organization represents, how would you rate their knowledge?

[220] Pokračování: Jak byste ohodnotil/a znalosti odborníků ve Vaší organizaci v následujících oblastech?

	Znalosti			
	Žádné	Základní	Odborné	Nevím
IV. Using building elements IV. Plánování základních součástí budovy				
a) Exterior wall Advantages and disadvantages of thermal insulation composite system (see image 1) or cladding (see image 2) a) Obvodové zdi Výhody a nevýhody kontaktního zateplení (obr. 1) a zateplení s odvětranou mezerou (obr. 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Roof Thermal insulation, airtightness b) Střecha Tepelná izolace, vzduchotěsnost	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Floor / cellar insulation (inside/outside) c) Izolace podlah a sklepů (vnitřní/vnější)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Windows Insulation of the frame, glazing, rail (see image 3) d) Okna Tepelné technické parametry rámu, zasklení, distančního rámečku (obr. 3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

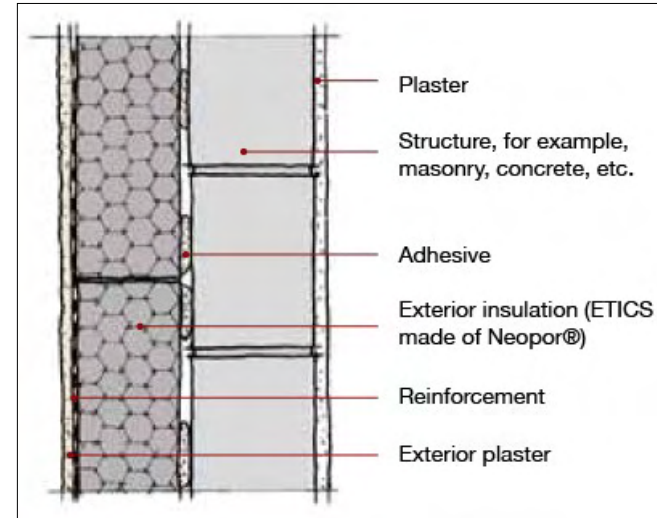


Image 1



Image 2



Image 3

[220] Continued: When you think about the professionals that your organization represents, how would you rate their knowledge?

[220] Pokračování: Jak byste ohodnotil/a znalosti odborníků ve Vaší organizaci v následujících oblastech?

	Znalosti			
	Žádné	Základní	Odborné	Nevím
V. Heating system V. Topný systém				
a) Primary energy Pollution, differences, oil, gas, biomass, NOT district heating) a) Primární energie Emise, rozdíly, topný olej, plyn, biomasa (v individuálních kotelnách, nikoli v systémech CZT (dálkového vytápění))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Heating generators Differences of efficiency levels, emission temperature, electric power consumption, energy losses in heat distribution g) Kotle a další zdroje tepla Rozdíly v účinnosti, výstupní teploty, spotřeba elektrické energie, ztráty v rozvodu tepla	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Differences between central heating systems and decentralized solutions Advantages, disadvantages c) Rozdíly mezi ústředním vytápěním a decentralizovaným řešením (lokální vytápění) Výhody a nevýhody	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Solar thermal water heating Efficiency level, electric power consumption d) Solární ohřev vody Účinnost, spotřeba elektrické energie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Control system Regulation, room temperature, adaptation to the heating generator, automatic regulation, time needed of preset system to reach desired room temperature e) Měření a regulace Regulace, teplota v místnosti, spolupráce s regulací kotle, automatická regulace, čas potřebný k dosažení požadované teploty v místnosti	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VI. Ventilation VI. Větrání				
a) Air exchange Rate and right behavior to air the rooms, indoor humidity and comfort a) Výměna vzduchu Intenzita výměny vzduchu a správná funkce větracího systému, vnitřní vlhkost a uživatelský komfort.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Ventilation Mechanical systems (with or without heat recovery) b) Větrání Nucené větrání (s rekuperací/bez rekuperace)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Ventilation with cooling Heat pump with cooling function c) Větrání s chlazením Tepelné čerpadlo s možností chlazení	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Calculation and dimension of ventilation systems d) Navrhování větracího systému	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[220] Continued: When you think about the professionals that your organization represents, how would you rate their knowledge?

[220] Pokračování: Jak byste ohodnotil/a znalosti odborníků ve Vaší společnosti v následujících oblastech?

	Znalosti			
	Žádné	Základní	Odborné	Nevím
VII. Energy calculation and balancing VII. Energetické výpočty, energetická bilance				
a) Heating degree days Looking at climatic conditions in future perspective a) Délka topné sezóny, denostupně Posouzení klimatických podmínek s výhledem do budoucnosti	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Heat generation and transmission b) Výroba a rozvod tepla	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Solar benefit c) "Solární výhody"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interior sources (lost heat from persons, electric appliances, lighting, etc.) d) Vnitřní zdroje tepla (tělesné teplo, elektrické spotřebiče, osvětlení atd.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Energy exchange caused by ventilation e) Ztráty tepla větráním	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Overall grade of energy loss f) Úhrn energetických ztrát	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Using application software g) Využití výpočetního softwaru	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VIII. Quality control VIII. Kontrola kvality				
a) Quality control of the planning a) Kontrola kvality projektu	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Quality control of the execution b) Kontrola kvality provedení	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IX. Costs and profitability IX. Náklady a ziskovost				
a) Alternative options for construction and their specific effectiveness a) Alternativní konstrukční řešení a jejich specifické výhody a nevýhody	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Calculation software and practices (pay-off periods) b) Výpočty ekonomické efektivity (návratnosti), použití software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
X. Energy efficient city planning X. Plánování energeticky šetrných měst				
a) Planning principles for energy efficient settlement planning a) Základy energeticky šetrného plánování sídel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Urban sprawl and density of cities b) Urbanizace a hustota zalidnění měst	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
XI. Legislation XI. Legislativa				
a) Knowledge of national and EU legislation a) Povědomí o národní a unijní legislativě	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[230] Assuming, there are no financing obstacles, how would you rank the following construction elements according to their impact on energy efficiency
 [230] Jak byste ohodnotil/a následující konstrukční prvky vzhledem k jejich vlivu na energetické úspory za předpokladu, že financování je zajištěno?

	Žádný vliv									Silný vliv	Nevím
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
a) Roof a) Střecha	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Walls b) Zdi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Windows c) Okna	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Heat installations d) Vytápěcí systém	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Floor and intermediate ceilings e) Podlahy a vnitřní stropy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[240] When designing, planning, or constructing/retrofitting a building how important are the following topics in general for your work?
 [240] Jak důležitá jsou ve Vaší práci následující témata při projektování, plánování, stavbě a rekonstrukci budov?

	Nedůležitá									Velmi důležitá	Nevím
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
a) Legislation (European, national, local) a) Legislativa (Evropská, národní, místní)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Settlement planning b) Plánování osídlování	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Regional conditions, taking into account future developments c) Regionální podmínky, se zřetelem k budoucímu vývoji (klimatické změny)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Energy carriers d) Druhy paliv a energií (média)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Building design e) Návrh budov, projektování	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Construction elements f) Konstrukční prvky	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Air ventilation g) Prvky větrání	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Retrofitting h) Rekonstrukce	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Best practice i) "Nejlepší" techniky	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) Financing (cost/benefit analysis) j) Financování (analýza nákladů a výnosů)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) Awareness raising of customers, public k) Připravenost na růst počtu zákazníků a obyvatelstva	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[250] To what extent are the following groups of people usually involved in the construction and modernization of buildings in your country? Please give percentages. The total should be 100%

[250] V jakém rozsahu jsou následující skupiny zapojeny v procesu výstavby a modernizaci budov v ČR? Udejte, prosím, procentuální podíl, úhrn bude 100%.

- | | |
|--|---|
| a) Private persons with some specific support by professionals
a) Soukromě osoby s určitou podporou odborníků | % |
| b) Craftsmen without qualification
b) Řemeslníci bez kvalifikace | % |
| c) Craftsmen with professional education and qualification
c) Řemeslníci s profesním vzděláním a kvalifikací | % |
| d) Other, please specify
d) Jiné skupiny – prosím specifikujte | % |

[270] The Energy Directive (2002/91/EC) foresees and “energy label” for each building that indicates its energy consumption and that shall raise the awareness of people to accelerate the speed of energy saving. Please answer the following two questions.

[270] Energetická direktiva 2002/91/EC zavádí “energetické štítky”, které vypovídají o energetické úspornosti budovy a zvýšením občanského povědomí urychlují prosazení úsporných opatření. Zodpovězte, prosím, následující otázky.

	Žádné										Velmi vysoké	Nevím
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		
a) Please rate your knowledge of the directive 2002/91/EC a) Prosíme ohodnotte Vaše znalosti směrnice 2002/91/EC (o energetickém provedení budov) resp. vyhlášky o energetické náročnosti budov č. 148/2007 Sb.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) According to your opinion, to what extent does the following statement apply: An energy label would lead to faster saving of energy in your country b) Jak je platnost výroku “Energetické průkazy budov povedou k většímu šetření energie v ČR?”	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[300] Finally, we would like to ask you if there is anything else, that you would like us to take into consideration when preparing a training concept.

[300] Pokud máte dojem, že bychom měli do koncepce školení zahrnout ještě nějaká další témata, budeme rádi, když nám je sdělíte...
