FINAL REPORT SUMMARY

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Elios 2

'Facilitating access to insurance by self-employed builders and small building firms so as to stimulate innovation and the promotion of eco-technologies in the European Union'

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The present document is a summary of the study report on “Facilitating access to insurance by self-employed builders and small building firms as to stimulate innovation and the promotion of eco-technologies in the European Union” of February 2015.

The document provides a briefing of the research findings and a presentation of concrete solutions which were analysed by the Elios team. Details and explanations of the findings and the context as well of the methodology are provided in the full version of the Final Report. The analysis of the 28 national systems regarding liability and insurance of parties involved in the construction activity is presented in a document annexed to the Final Report (see appendix 3.1).

We invite all readers to consult the full Final Report in order to have a more complete understanding of this pilot project.

FOREWORD

Liability and insurance law in the construction sector in Europe is still a juxtaposition of various and sundry laws. In fact, each legal system has, over the years, developed its own set of rules, without taking into account, given the immovable nature of the future building, either legislation in other countries or the possible international nature of the contracts. Construction rules and law remain thus the work of each of the national legal orders and reflect their peculiarities.

Following the first Elios1 pilot project, whose objective was to study the measures that would allow "facilitat[ing] access to insurance by building contractors, especially self-employed contractors and small firms, in order to stimulate innovation and the promotion of eco-technologies in the European Union" and which, in 2010, formulated various recommendations, the European Parliament adopted a new budget line in 2011 in order to proceed to a more in-depth study of some of its recommendations.

The European Commission thus launched a call for tenders for Elios2 whose mission has been defined more particularly as: "(i) provid[ing] objective and reliable information on the opportunities and threats of quality/conformity marks and building pathology that could support risk appraisal by (re)insurance; and (ii) identify[ing] possibilities for greater convergence of mutual recognition of construction insurance regimes in the EU-28 with view of the Internal Market and the cover of building sustainability performances."

What you, the reader, hold in your hands today is the result of research carried out by the Elios2 consortium, which was made up of top European actors in the construction insurance industry and in quality control in the construction sector, with a leader role played by CEA (Centre d'Etudes d'Assurances), a brokerage company specialised in construction insurance.

Not only recognising the ever-increasing discrepancy in the regulation of insurance and quality control activities but also being aware that the climate does not currently favour attempts to harmonise rules that apply to construction contracts and to insurance covering the works and builders' activities, the authors of the Elios2 report wisely proposed implementing a pragmatic system, with some modest ambitions, but directly applicable.

Of the recommendations formulated by the Elios2 group, two are of particular interest.
The first stems from the suggestion to implement an "Eco-technologies Quality European Observatory" (EQEO), the aim of which would be to pool qualitative data related to certain pathologies of buildings, in the specific field of eco-technologies. The data used to build this database could be gathered by certain public or private stakeholders who are nationally active in supervising the building sector. The success of this initiative will again clearly depend on the willingness of these stakeholders to share the databases patiently created throughout years or even decades of experience.

The second recommendation appears to us to present more serious opportunities to obtain tangible results in the short term. It means to set up a "European Facilitator for Access to Construction Insurance" (EFACI).

This recommendation, justified by a detailed analysis of some key trends of the current situation, is the measure that the authors favour in order to address the concern that the freedom to provide construction insurance services is, at the moment, little more than wishful thinking, in particular because of the national differences between the various obligations imposed in terms of construction insurance.

In fact, the Elios2 report identifies several ways to respond to this concern. For example, it suggests establishing a system of equivalence of insurance issued in different Member States (liability insurance for builders provided in a Member State being presumed recognised as equivalent and accepted as such to cover builder's liability on work sites in other Member States).

Nonetheless, this solution faces the obstacle of the existing differences between the national regimes in terms of builder's liability. Based on this last observation, an alternative solution would consist in an attempt of reducing the diversity of national regulations in the field of builder's liability insurance. By the authors' own admission, this option remains nevertheless currently still essentially theoretical, which we personally regret. Another proposal is to increase, for the benefit of SMEs and consumers, information exchange concerning each of the existing legal systems' requirements as well as on opportunities to access national construction insurance and guarantee markets.

This last solution may nevertheless appear to be insufficient in the light of existing experience as regards the "Points of Single Contact" (PSC), intended to inform the service providers about the regulations, authorisations, licences, permits and so on required for them to carry out their activity in a specific Member State, the implementation of which has not led to a substantial reduction in difficulties encountered by cross-border service providers.

For these reasons, the Elios2 consortium proposed setting up an independent authority, appointed by the European Commission, which would be aided by a Liaison Committee made up of representatives from both the construction and insurance industries and of experts and representatives from the European Commission. This authority would be responsible for advising and assisting service providers in the real estate construction sector with a view to entering the cross-border activity insurance market. This "Facilitator" would accompany the providers, essentially SMEs, in collecting information and would direct them to recognised insurance organisations. Its role, however, would include neither forcing an insurer to cover a specific risk nor managing the contractual process of buying insurance in the service provider's place. The "Facilitator" could also be asked to "monitor" access to the European insurance market and advise the European Commission as to the actions to take if specific difficulties are observed.

This pragmatic proposal deserves consideration. If it may admittedly not remove all obstacles that currently prevent seeing little more in the freedom to provide insurance services in the construction industry than an essentially theoretical concept, it would nonetheless allow, on an individual and tailored basis, providing assistance to the service providers to cover risks that are inherent to construction, especially when there is a cross-border element involved. However modest, this initiative will facilitate access to insurance for SMEs in the construction industry. Through this concrete proposal, the Elios2 report thus responds positively and visibly to one of the main objectives assigned to it by the European Parliament and the European Commission.

Jean MONNET used to say "what's important is neither being optimistic nor being pessimistic but rather being determined". That, without doubt, is the desire that we can formulate for the decision-makers for whom this Elios2 report is intended.

The recommendations in the Elios2 report are common sense and justified by a pertinent analysis of the existing systems: not revolutionary, but ad hoc measures aimed at improving the daily lives of the players in the construction industry, which we know represents a significant portion of the Gross Domestic Product of the European Union Member States. It is thus possible to see the interest of the proposals formulated in the report whose authors are found to be excellent practitioners of the principles of both reason and subsidiarity.

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INTRODUCTION

Elios 2 ("European liability insurance organisation schemes") is a European pilot project which was carried out between 2011-2014 based on the findings and recommendations of the previous Elios 1 project (2008-2010). The overall aim of both pilot projects was to "*Facilitate access to insurance by building contractors, especially the self-employed and small firms, in order to stimulate innovation and the promotion of eco-technologies in the European Union*".

Elios 1 was intended to analyse the liability and insurance regimes applicable to construction in the EU-27 as well as the interaction of these regimes with innovation and the development of eco-technologies in construction. While national regimes have common objectives and needs in terms of security and guarantees for the economic operators, there exists a wide diversity of national regimes. Elios1 also pointed out the regulatory role of insurance, as the risk selection and control function of insurers could influence the design and performance of construction works.

Elios 1 recommendations[1] were discussed during a meeting with the stakeholders organised by the European Commission and the MEP Estelle Grelier on 23 March 2011 to take stock of the work undertaken to date and to discuss the main orientations for the proposed follow up pilot project, especially the needs of transparency in risk appraisal and on the possibilities for greater convergence or mutual recognition of construction insurance regimes in the EU-28.

Elios 2 has been implemented by a consortium led by the Centre d'Etudes d'Assurances (CEA), in partnership with: the Centre Scientifique et Technique du Bâtiment (CSTB), the Danish Building Research Institute – Aalborg University (SBi), Hannover Rückersicherung AG, and Arcadis Nederland B.V. It also counted on the input of subcontracted entities: Allianz Germany, Alten France, Apave France, the Belgian Building Research Institute (BBRI), the National House Building Council (NHBC), and the Technical and Test Institute for Construction (TZUS).

The work programme included the following elements:

- Work Package 1 (WP 1) focused on the "Development of an EU directory on quality/conformity marks (labels, certificates, technical assessment, etc.) for construction products, processes, works, technical equipment and professional qualifications.

- Work Package 2 (WP 2) focused on the "Development of indicators and monitoring of the evolution of quality in construction and of the pathology related to construction design and techniques and the integration of eco-technologies".

- Work Package 3 (WP 3) globally focused on the "insurance" aspects of the accessibility issues assessed by the Elios 2 study, focusing more precisely on the post completion Third Party Liability (TPL); the Professional Indemnity (PI) an the Inherent Defect Insurance (IDI)

[1] The recommendations were published in the Elios final report on 30 April 2010 (see http://www.elios-ec.eu/report.html).

CHAPTER I – WORK PACKAGE 1

Background

The development of the directory is a way to address the recommendation coming from the Elios 1 project: *"The growing number of quality/conformity marks for construction products/services and eco-technologies does not necessarily provide clear and reliable indicators and information for the risk assessment* (by insurers) *and furthermore could raise issues regarding their compatibility with the objectives of the Internal Market."*

Methodology

The Elios 2 team proposed to use the expression "Quality Sign" (QS) to name *"quality/conformity marks"* as worded in the call for tender. The following definition was proposed: *"any kind of sign on the basis of which (construction) stakeholders rely on or give credit to when decisions or choices have to be made."*

The research work was based on desk studies, direct exchange with both providers and users of information carried by quality signs (QS), electronic survey by building clients, architects/technical designers, contractors, manufacturers and exploration of the use of QS by (re)insurers when they assess their risks.

Quality signs in construction: providing trustable information to construction actors

As it is the case on any market, actors of the construction value chain need to send signals to the market in order to circumvent the asymmetry information problem they have to face: certificates, labels, qualification, technical approvals, etc., are examples of such signals.

For example suppliers may indicate to the market that their products, equipment, materials conform to the requirements of the clients. Similarly contractors may wish to demonstrate a certain level of knowledge, competence and skills within the relevant field of practice.

For these operators of the construction value chain it is also a way to differentiate themselves from their competitors. Such signals carry information concerning a specific subject (products, systems, competences or works). This information is said to reflect properties of the subject which are of interest for the client/user (e.g. qualification, performance levels, field of use, design rules, etc.).

Basic requirements for construction works, as defined in the Annex I of the Construction Products Regulation (CPR), reflect performances of construction works expected by clients and users/occupants. Depending on the location of construction works in any of EU-28 countries, there is a multitude of design and technical solutions to meet clients/users expectations for any type of construction (e.g. housing, school, hospital, shop, factory). Generally, there is no one best solution, but available budgets of course restrict choices.

Types of QS

QS associated to the four subjects (construction products, construction systems, individual/company competences, performances of works) address two types of delivery schemes:

- **certification scheme:** that brings factual and reliable information on subjects for which reference specifications are available and against which characteristics of the subjects can be checked,
- **technical approval scheme** : that answers the need to bring construction actors relevant and reliable information, usually on innovative, customised or complex technical systems,

The former may concern any subject (as soon as relevant reference specifications are available) the latter mainly concerns construction systems defined as a set of products, accessories and specific design, implementation and maintenance rules to fulfil and maintain functions awaited from buildings or building parts.

There is no overlap between these two concepts. They may even be complementary: some characteristics of construction products being part of a construction systems or competences being essential for the installation of such systems may be certified.

Certification and technical approval aim to provide information construction actors (client, designers, contractors, facility managers) are looking for to select, design, install and maintain elements that are needed for a project. These QS do not explicitly aim to provide information for insurers to assess their risks but part of the information may nevertheless be relevant for such assessment.

The on-line Elios2 e-directory

The structure of the directory has been designed to help users to compare the descriptions of QS concerning similar goods or services. This kind of comparison is focused on the core of the schemes, i.e. the owner, the scope and the delivery process. When more QS are recorded in the directory, this comparison helps construction actors to choose among several QS according to the scope as well as to other aspects with regard to their activity in their local context.

Construction actors may for instance be interested in characteristics of goods and services that echo some contingent factors (e.g. climate, culture, history). They may then prefer to select one specific QS. The availability of the directory of QS is a step towards a better knowledge on what is going on in EU-28 countries and a better understanding of the needs of operators in these countries, being construction operators or insurers.

The directory is then a potential tool to improve and increase mutual confidence in QS issued in EU-28 countries. The more is known about QS in different countries, the more constructive exchanges can take place to better assess and more easily develop mutual recognition of QS where relevant.

Results

The added value of the on-line Elios2 e-directory is to give access to reliable information on QS: http://signsdirectory.elios-ec.eu/. The reliability of recorded information is due to the fact owners/providers of QS themselves record descriptions of QS they deliver.

In order to stimulate the population process, few of the 43 recorded QS descriptions were nevertheless filled in by Elios2 team members and proposed for validation to QS providers.

Recorded QS cover the four subjects and come from nine countries, knowing that several EU-28 countries could hardly be present in the directory as no QS in construction are available (LV, MT) or are very scarce (CY, RO, SK), if we except CE marking due to its legal and mandatory status.

More than 130 QS providers were invited to populate the directory. The low response rate was not due to specific difficulties to register and record QS descriptions but because:

- the fact that the link between QS and insurability is not straightforward for all QS providers. Some providers clearly stated that their QS is of no value for insurers (DIBt, QS on products).
- the lack of spontaneous notoriety of the Elios2 project in spite of promotion actions through European networks of QS providers,
- a form of scepticism of QS providers about a European project on the issues addressed by Elios2.

In particular, European providers of QS related to products/systems probably saw this invitation to record QS as a possible contradiction with the implementation of the CPR.

Rationale and relevance of the information provided by QS, including the compatibility and complementary issues with the CE marking

QS on construction products, construction systems, individual/companies competence mainly aim to provide information for construction actors to select appropriate and 'trustable' products, systems and competences according to each specific construction project. They help make a difference between "similar" goods and services proposed on the market. In addition, QS on performances of building works carry information concerning the whole building through an analysis of the (management of a) construction project. What matters first for clients and insurers are the performances of the delivered building works.

Investigations carried out during the Elios2 project showed that QS on construction products are not relevant for insurers to assess their risks when underwriting. Consequently, issues concerning the complementarity and compatibility of CE marking with QS on construction products then happened not to be crucial. On the other hand, the study highlighted the importance of other QS on fully different subjects (e.g. on competences, on construction systems and possibly on work performances). As these subjects do not overlap the subject of construction products, complementarity and compatibility of CE marking with these QS is then not an issue.

Indeed, building defects mainly come from design or execution of works. Construction products are more rarely involved as such so that the relevance of QS on products is very low for insurers as far as IDI contracts are concerned. This type of insurance contract is essential as far as the development of eco-technologies is concerned.

The fact that some insurers advertise on possible tariff advantages for contractors who can display QS on competences may be interpreted as a confirmation of the importance of such QS. The "value" of QS on competence is implicitly recognised positively but possible advantages are of course not granted automatically.

Similarly, some insurers also advertise on advantages for projects displaying QS on work performances. In spite of this, it must be emphasised that QS remain one element among many others for insurers to assess their risks.

Conditions and modalities to be followed to access to the QS, including those related to the mutual recognition

Descriptions of QS recorded in the Elios2 directory show that certification rules (for products, competences, works), evaluation frameworks (for systems), or the outcome documents of certification (i.e. certificates) or technical approval schemes in many cases can be easily accessed through internet, or can be made available by the sign providers on request. In some cases there may be restrictions of access that are part of specific rules of a given scheme. These restrictions are then known to applicants.

Possible impact of the quality/conformity marks on the competitiveness of construction businesses and the functioning of the Internal Market

From the questionnaire survey it appeared that QS are perceived as a source of competitive advantage for a company and that it improves the image of the company.

As far as the functioning of the Internal Market is concerned, from the questionnaire survey it appeared that half (50%) of the respondents considers QS not to be a source of protectionism between countries. However, if we look at specific actors in the construction business, we see that 26% of the French suppliers think that QS are a barrier to trade on cross-border activities, and 52% of the same respondents perceive QS as a source of protectionism between countries.

The main objective of the CPR is *"to remove technical barriers to trade in the field of construction products in order to enhance their free movement in the internal market"*. By affixing the CE marking, manufacturers indicate that they take responsibility for the conformity of the construction product with the declared performance as well as compliance with all applicable requirements laid down in the CPR and other relevant Union harmonisation legislation providing for its affixing.

But the CPR (and CE Marking) only has relevance for construction products, and not for competences, for systems or performances of works. As we have seen before, insurers attach great value to QS on competences, rather than on construction products. So from the perspective of insurers, a kind of mutual recognition of competences (in design, in execution/installation) within Europe will probably allow a better assessment of risks by insurers in different countries, and may lower barriers to trade.

An added value of QS in comparison with CE Marking is to bring appropriate information that is adapted to local markets in Europe. Mutual recognition of QS should take this statement into account as QS are and will remain very relevant for manufacturers and services providers (architects, technical designers, contractors) to highlight differences of products/systems/services they offer on these local markets.

From the survey, actors seem to agree the strongest impact of QS is on building safety and energy performance of buildings. The impact on pathology reduction is comparatively lower and the effect on insurance costs appears to be quite weak.

Use of QS by the insurance sector, including in the context of cross-border services

Insurers do use QS that are relevant for assessing their risks. Main sources of building pathology are known by statistical analyses of insurance claims. As a consequence, insurers are not equally interested by QS concerning construction products, construction systems, individual/company competence and performances of building works. The Elios2 study emphasised the importance of QS on competences.

A distinctive characteristic of relevant QS for insurance purposes is its potential to provide discriminant information during the underwriting process, i.e. information that draws attention of insurers on risk factors (e.g. use of construction systems according to their field of use, interface with adjacent building parts, requirement for a high level of competence in design/installation).

Recommendations

1. *Promote the e-Directory*

We recommend that the EC promotes the e-directory of QS at the EU level in order to create conditions for a better understanding of the scope and limits of each type of QS. Experience with populating the QS Directory showed that it needs limited effort to record QS descriptions in the directory for a person whose daily activity is QS delivery for a given subject. By attracting new contributors to populate the e-directory, the EC could quickly collect added-value information for future developments (e.g. mutual recognition of QS) in the areas of essential descriptive information (ID, scope, organisation of the scheme, use of QS by insurers) allowing for comparison of QS concerning similar subjects in different EU-28 countries

2. *Further highlight links between QS and insurance*

The development of insurance requires access to information allowing the assessment of risks. The e-directory provides a view of QS providers on the potential use of QS for insurance. The EC could foster an exchange between QS providers and insurance in order to analyse possible improvements in the information carried by QS, aiming to reduce building defects (of any kind) in the future, especially when eco-technologies are incorporated in building projects.

Existing QS are presently not explicitly meant to produce information for insurers. There may exist a potential to amend existing QS or develop new types of QS that would more explicitly help risk assessment. Initiatives to promote exchanges on the use of QS for insurance purposes could be supported by the e-directory.

CHAPTER II – WORK PACKAGE 2

Background

Building pathology provides an interdisciplinary approach to the study of defects and performance in order to develop appropriate remedial and management solutions. It considers how the structure and materials of a building relate to its environment, its occupants and the way the building and its equipment are used, so as to develop a better understanding of defects and failures. In Elios 2, building pathology was considered as the appearance of lack of quality (or 'non-quality') of construction works.

Insurers have specific information needs, essentially in order to make their risk assessment. The construction Insurance Underwriting process is here based on a case by case approach, leading to specific insurance terms and conditions. The concern about the considerable cost of non-quality in the construction sector and the interest to disseminate information about pathology in order to promote better practices are also widespread throughout Europe Unfortunately, the data on pathology are often seen as confidential and some actors are not eager - or are even reluctant - to provide their data in order to contribute to an exchange of information. Despite a large consensus on the theoretical and practical interests of such a process of exchange, only few organisations have succeeded in collecting and disseminating data on building defects in a systematic manner.

Methodology

The scope of this workpackage was to develop, test and validate a pilot version of a database on quality and pathology indicators. The needs and criteria for such database were identified based on desk studies, interviews, meetings and workshops with insurers and other stakeholders, questionnaires and team discussions.

The research work had to take into consideration the existing differences concerning the principles and the level of building pathology observation and registration at national level.

Pilot database

On the basis of the needs and requirements of the insurers, a pilot database was developed, and made accessible on the internet (http://pathologydirectory.elios-ec.eu/pathologies/index). The database offers:

- An input interface (to record the information from pathology cases in a number of input fields using a defined nomenclature);
- A multi-criterion search facility, allowing data extraction by type of eco-technology, type of defect/failure, type of construction work etc.;
- An administrative interface allowing an administrative and technical management of gathering partner accounts.

The pilot database was populated with 64 pathology cases, representing experiences with defects and failures in 10 countries related to 4 selected eco-technologies: heat pumps, insulation made of bio-materials, photovoltaic panels and solar hot water.

The cases were provided by the project partners (NHBC, CSTB, SBi, ARCADIS, TSUS), from a variety of sources:

- The ten case studies on eco-technologies, performed by the WP2-team as part of Elios 2;
- Public internet sources;
- Collected experience from test institutes, research institutes, insurance federations.

Some findings from the process of populating the database:

- The pathology cases were mostly derived from collected experiences and lessons-learned. Hardly any detailed project-related pathology could be found;

- The field most often used in the database was: “general description of the pathology”. A number of input fields were not used;
- The distinction between defect and failure in the description of a pathology case, is difficult;

Building pathology and quality indicators in construction

The causes of ‘building pathology’ can be very wide, coming from insufficient skills of or faults by actors during the development process or construction process, loose design, inadequate processes, defective building products, aging of building materials, imperfect implementation, etc. Pathology is created by all these imperfections, most of them resulting from human actions.

In order to underwrite a risk, the insurer deals with technical information to assess his risk, helped by his knowledge of the corresponding and/or foreseen pathology. For insurers, ‘quality indicators of construction’ are more of a statistical nature. On the basis of a large database of pathology records, it would be able to measure for example the number of damages of buildings each year, or the amount of money to repair the damage. This is how the concept of ‘non-quality in construction’ in the context of building pathology was interpreted. ‘Non-quality indicators of construction’ are in fact statistical indicators of a large set of building pathology data.

Sources on building pathology

An analysis of the available literature made it clear that the majority of the publications on building pathology refer to defects, damage, decay of ‘traditional’ building materials, products and building components, i.e. foundations, structures, concrete, roofing, facade, rendering, plumbing, equipment.

The development of eco-technologies (for further details please refer to "***Case studies")*** creates a new context. It is more difficult to identify specific sources on pathology. Nevertheless, the defects of some eco-technologies like photovoltaic panels, insulation products or wind turbines have been studied for a number of years and received some attention in studies by research institutes or insurance federations.

It appeared hard to gather comprehensive, reliable and exhaustive information on pathology directly from organisations themselves. The information is often confidential. Insurers are generally sceptic about sharing information since their knowledge and claims data is the result of research and expertise, which is the basis of competition between insurers. Insurers would therefore in principle only be passive users of a future pathology database.

Besides, only few organisations collect data on building defects in a systematic manner, and information on defects of eco-technologies is scarce anyway. With most organisations the data collection is very low-key, and only meant for internal knowledge-sharing, or for developing ‘do’s’ and ‘don’ts’, rules of thumb or a description of specific solutions.

There are a few national organisations that have already established systems to regularly collect information, like AQC (France), Danish Building Defects Fund, NHBC (UK) or Woningborg (Netherlands). But they gather this information only for a specific purpose and for their local market. They don’t seem to be very interested in pathology information from other countries. Besides, these organisations often do not collect information on the level of individual technologies.

Relationship between risk assessment by the insurer and building pathology

Building pathology information may help the insurer in his risk assessment in two ways:

- *Qualitatively*, by improving the technical knowledge of the insurer on a particular product/technology. The insurer may use this technical knowledge for formulating strategies for conditions for the acceptance of these products/technologies for insurance coverage.
- *Quantitatively*, by providing statistical information on the frequency/probability of occurrence and losses, that the insurer may use to do the pricing of a cover and propose guarantees.

For innovative products/technologies, like eco-technologies, there is less or no historical information available from claims. Besides, the administrative processing of claims in the database of the insurer is usually being performed by legal people of the insurer and not by technical people. The result is that it is often difficult to make an analysis of the causes of defects, and the defective parts. For technical risk assessment the information from claims is therefore usually not very useful.

That means that pathology information on innovative products/technologies (available in the market or with the insurer himself) cannot be used yet quantitatively, but only qualitatively.

Needs from the insurance industry

From interviews and workshops with insurers and technical inspection service providers, it appeared that the insurance industry would be interested to have a tool with the following functionalities:

- A database with pathology records, that provides *qualitative* technical information on the pathology of eco-technologies (without any statistical data disclosure of claims);
- A 'Warning procedure' (or hazard notification procedure), where interlocutors in each country can report issues/defects;
- An overview of quality signs for eco-technologies (as an extract from the quality signs directory to be developed within WP1).

There is indeed a distinction to be made between the factual reality of pathology (leaks or cracks for instance) and the qualification it will receive according to the national rules, and the way the legal system will take this reality into account, both in terms of liability and insurance (the first question being simply: is it a claim?).

When a failure or a defect occurs, the duty to repair falls to different actors depending on the national frameworks. Typically, numerous defects affecting houses in the UK will be managed by NHBC, whereas the German contractors will generally be asked to take charge of the same kind of damage and, in France, a similar situation will mobilise the compulsory insurance system.

From the study it has become clear that there is a lack of exchange of information at the European level on the pathology of eco-technologies.

It is noticeable that, amongst the existing national observatories on pathology, two of the main references, AQC in France and BYG-ERFA in Denmark, were initially created with the support of governmental measures. It seems that, in this regard, the addition of the individual interests does not lead automatically to measures favourable to the general good: public support, at least temporary, can be useful.

Tracks of improvement

Several possibilities to improve the situation with different levels of ambition were identified:

1. *European Working Group on Sustainable Construction Technologies*

To boost the uptake of innovative eco-technologies, and associated risk insurance schemes, the European Commission could establish a dedicated European Working Group on sustainable construction technologies, for example organizationally accommodated within the Joint Research Centre, and comparable to the NREL (National Renewable Energy Laboratory) in the USA. Such a Working Group should focus on "giving creative answers to today's sustainable development challenges", conducting fundamental science, coordinating the results of European technical studies initiated by other DG's, sustainable construction analysis, validation of new products for the commercial market, and collection and dissemination of pathology information for the European construction industry.

2. *Existing web-portals of the European Commission*

If options 1. and 2. are not feasible, a more modest set up would be to have an EU web-tool, where defects information sheets, studies on eco-technologies, etc. can be stored in a simple catalogue or library, perhaps supplemented with an aggregated analysis of pathology experiences and with links to other website (e.g. RAPEX). Such a web-tool could be for example integrated under the Build Up web-portal (www.buildup.eu).

3. *Exploit the results from EU research projects on construction materials and eco-technologies*

EU research projects could be a valuable source of information on building pathology, and could therefore be a useful input for the EQEO and/or other means of exchange of information on pathology. To be able to exploit the results of future EU research projects, an option is to include a clause in the grant contract of such projects, demanding that, at the end of the project, the project team should provide the Commission with the relevant pathology research data resulting from the project.

4. *Organizing meetings for insurers for the exchange of pathology information*

For the insurers and other interested parties, a first sept in the direction of an exchange of pathology information at a European level, would be to organize meetings, whereby national experiences on defects and failures on certain eco-technologies can be discussed.

Recommendations

However, amongst the different possibilities, the final recommendation of the Pilot Project would be the creation of the EQEO, an Observatory at the European level in order to organise an exchange of information between national actors.

Even if there appears to be a widespread and even systematic willingness to collect information on pathology in the different member states and even if the collection and analysis of data are officially organised and managed in some of these (under various forms and by different types of actors), there is no exchange of information today at the European level.

Considering the difficulties in gathering reliable and exhaustive information on pathology and the few organisations collecting data systematically at the national level, the observatory could be, at least as a first step, limited to some member States and to some eco-technologies.

The technologies are expected to be clearly identifiable, mature enough, available on the market and commonly applied in most EU-countries.
According to the findings of the work done by WP 2, in particular through the Pilot Database, we propose to select the 3 following eco-technologies:

- Photovoltaic Panels (PV's)
- Ground source heat pumps
- Bio material based insulation

As a result of our discussions with the main stakeholders, the insurance industry, and more genzerally all the actors of the construction and insurance sectors, would be interested in having information about the quality of these 3 eco-technologies at a European level.

The tool to be developed would be called: Eco-technologies Quality European Observatory (EQEO).

It should have at least three functionalities:

- A database with pathology records that provides qualitative technical information on the pathology of eco-technologies (without any statistical data disclosure of claims).

- A 'Warning procedure' (or hazard notification procedure), where interlocutors in each country can report issues/defects.
- An overview of quality signs for these eco-technologies (as an extract from the quality signs directory developed in WP1).

CHAPTER III – WORK PACKAGE 3

Update of the mapping of insurance regimes - General results

Since the first results of the Elios 1 project, the diversity of the national regimes has not been reduced, no measure stimulating some forms of convergence in this sector has been adopted and the landscape of construction insurance in Europe can still be described as a "patchwork of 28 insurance systems" (see the updated mapping, appendix 3.1). Some minor changes occurred at EU level or nationally:

- Croatia joined the European Union the 1st July 2013. As its departure from a communist political regime to an independent republic only occurred in 1991, Croatia's construction legal regime and insurance practice are still very young and therefore limited. In addition, the construction sector suffered dramatically from the post 2008 credit crunch and government fiscal deficit.
- The Swedish compulsory IDI cover has been cancelled the 10th April 2014. However, even though the obligation disappeared, insurers don't seem to be very pessimistic regarding the evolution the insurance demand.
- Spain insurance market is still expecting to see the extension of its compulsory IDI with a three year cover for "habitabilidad". This delay is certainly linked to the current bad shape of the local construction industry.
- In Austria, as of 1st August 2013, the mandatory insurance for master builders and developers, real-estate agents and real-estate administrators must cover not only persons and property, but also financial losses.
- In the Netherlands, the Ministry of the Interior is working on a new "private building control" to be contracted by the building partners. The law is foreseen to be enforced in 2015.

The mapping established during Elios1 in 2008 highlighted a tendency to implement ten-year post completion insurance for housing, mainly in the Western part of Europe. Apart from 6 States with a compulsory legal framework: France (1978), Sweden (1993), Finland (1994), Spain (1999), Italy (2004) and Denmark (2008) and 3 with a widespread insurance scheme (the UK, Ireland and the Netherlands), there was a project to implement such an insurance scheme in 5 other European States (Belgium, Czech Republic, Greece, Luxembourg and Portugal).

The situation nowadays seems to have changed radically since none of these projects has been implemented. On the contrary, the Swedish compulsory IDI cover was cancelled during the summer of 2014 and Spain's insurance is still expecting the extension of its compulsory IDI with a 3-year cover for housing (see chapter 3.4.2 Final Report).

It underlines the link between compulsory insurance and economic conditions. The reason for this change, even this reversal of trend, seems clear: the downturn of the economic activity. In other words, a compulsory or widespread insurance presents a lot of advantages, but has a cost. And, for many Governments today, the implementation of such a mandatory system is not a priority.

Additional remark about the freedom to provide services (FPS) for the actors of the insurance sector

As mentioned during the course of the Pilot Project (see Progress Reports), different stakeholders have addressed the question of the conditions, rules and information needed when an insurer acts in the framework of the Freedom to Provide Services.

The current functioning of the Home Country control principle raises doubts and even suspicion from some actors, especially in the French Market: are the insurers who are operating from another Member State -and their Control Authorities- always correctly informed about the specificities of the Host Country national regime, especially when a long tail guarantee is required? The Scientific Committee has acknowledged this question as a serious concern (see appendix).

It seems important, at least, to improve the confidence of the public and of the professional actors in the control exercised by the different national Authorities according to the system of the Home Country control.

In our opinion, it means finding ways to improve the exchange of information between the different national Authorities in charge of this control.

And it seems to be necessary and urgent since, according to the information we have collected, some actors could make unfair use of the current situation: the risk of occurrence of financial difficulties for the insurers involved, and consequently the risk of a flaw in consumers protection, cannot be ignored.

Financial mechanisms for protection of investor's interest - Energy Performance Insurance

Apart from insurance as described in the mapping, other financial mechanisms essentially regard energy performance. .Demand for financial protection in this area is rapidly growing as governments increase their efforts to reduce the energy consumption of buildings. Whether it is through "Energy Savings Insurance" (ESI) of rehabilitation projects or guarantee of "Energy Performance Contracts" (EPC) on new buildings, it appears that the risk has not been successfully transferred to insurers in Europe.

This situation is due to various factors, mainly the difficulty for the insurer to assess their risk, particularly around higher energy consumption of the building than was expected at the design stage. Also, while design methods use simplified theoretical models to appraise the expected performance, the insured performance embraces real life complexity, including all specificities of the built construction and its environment. Another factor is the existence of variables that are independent from the building, such as the behaviour of the user. This is especially the case for single family dwelling where habits have a great impact on energy consumption. We can also notice the importance of equipment maintenance as an independent variable. Even worse in the assessment process, an adverse effect can be observed on users when they know that a guarantee is provided.

Insurers also face operational problems such as the measurement of the energy performance, or the means to identify, thus rectify, the causes of excessive consumption.

Consequently, the existing guarantees are usually carried out on office buildings, where design takes into consideration detailed operational conditions and where behaviour is more predictable. Energy performance insurance now faces the challenge of covering housing.

Information needs about construction insurance

As regards innovative technologies, the risk assessment cannot rely on historical statistical data about claims and must rely on a qualitative prospective approach. Therefore, based on their knowledge in construction risk assessment and their experience, the technical inspector, the insurer or the reinsurer analyst have to qualify the risk according to various criteria, focusing on known pathology, and on failure cost and probability of occurrence.

It is important to stress that Insurers largely rely on Technical Inspection Services (TIS) in order to assess the risks and also to enforce the quality needed to implement insurance guaranties on a construction work. Depending on the country and its legal framework, the TIS can be:

- Voluntary or Mandatory (or Required by insurance);
- Working for the owner, the insurer, the government;
- A private or public body;
- Make limited conformity missions or risk analysis missions;
- Needing accreditation to operate or not.

From the insurer point of view, the usefulness of the TIS will therefore vary greatly.

State of the art insurances schemes and transition paths

Based on their technological, historical, social, political, cultural and economic characteristics, findings indicate that national regimes of construction vary markedly from country to country in the EU.

The analysis of the corresponding existing consumer protection systems, through incentives toward quality of the construction, has highlighted the importance of differences, and most important, that those differences are market/culture specific, and the result of an evolution. It is shown that some systems are based on a legal framework others on a market driven trend, some systems offer very few protections while others are extensive.

Insurance can be viewed only as an element (systemic approach), maybe the final one, in the consumer protection framework. It is closely linked to the other elements involved in the construction quality chain and cannot be considered alone.

Conditions for greater mutual recognition of construction insurances regimes

Construction insurance schemes are intimately linked to the socio-technical regimes of construction, which in turn are largely anchored nationally. Changes of construction regimes are likely to take place through:

- internal tensions in the largely national construction regime,
- external pressure from the landscape, or
- upcoming technological opportunities.

Possible actions to improve the accessibility to construction insurance can be grouped in two main categories:

- Improving the access process between national construction systems through transnational communication, and;
- Modifying the construction systems themselves through harmonization.

The first option is to improve the access process between national construction systems through transnational communication. Below we highlight how this could be done:

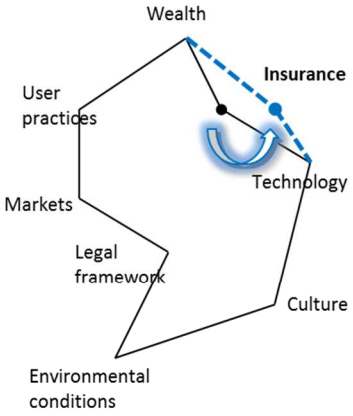
- Improve failure forecasting and share pathology information through the EQEO initiative (developed by WP2) and the creation of a “hazard notification procedure” in order to retrieve information at a European level.
- Share information about existing quality signs (as initiated by WP1) in order to help insurers assess the competences of foreign applicants and help the enterprises identify the insurance valued criteria.
- Improve the relevancy of the quality signs as risk assessment criteria by the insurers
- Create a European Technical Inspection Service certification, based on independence and risk analysis competences criteria.
- Use the existing national Points of Single Contact (PSC) in order to facilitate subscribing procedures:

- Add an insurance access procedure guide, notably providing information on insurance provider contacts and on information requirements (standard application form).
- Add the Elios2 insurance regimes mapping to these PSCs which will require updates from Member States.
- Standardise the information presented (form factor specifications), and translation possibilities.
- Create an European enterprise insurance prequalification even though comparable attempts failed (CEN TC-330).
- Create an "Insurance accessibility" complaint procedure at European level, through the PSCs or directly sent to a European envoy.
- Under the Freedom to Provide Service law, require the communication of existing domestic financial regulations (and notably provision rules) associated to specific guarantees (notably IDI), from "Host Member State" toward "Home Member State's" regulatory authority, through the EIOPA

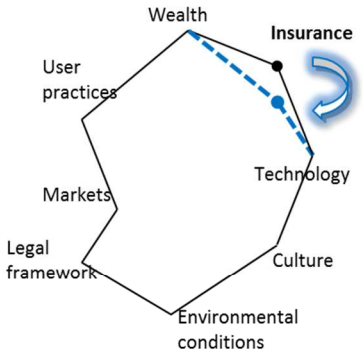
The second option would be to modify the construction systems themselves through harmonisation. This may be achieved through the setting of a common European minimum level of guarantee requirement on contractors, architects, engineers and inspectors' liability on solidity / stability of the building works.

Nonetheless, from a systemic approach perspective, insurance cannot be considered independently from other construction framework elements, such as construction techniques (adapted to local environment circumstances such as climate, or construction materials availability and cost), legal history, or general economic wealth.

Consequently, pure harmonisation creates a reconfiguration of all national construction processes, while transnational communication mechanisms should improve accessibility without disrupting existing frameworks:



System Configuration Country A



System Configuration Country B

We hereby remind that, as already indicated in Elios 1, and developed in previous sections, national legal and insurance construction frameworks are the result of long historical developments of, among others: local culture regarding construction methods and techniques (adapted to local environment specificities, including climate, soil conditions or construction materials availability and cost), legal history, insurance role in the construction quality chain, or general economic wealth.

Therefore, and considering firstly states' legal sovereignty and secondly freedom of activity of private construction insurance players, legal and insurance frameworks throughout Europe can essentially evolve and change through internal national mechanisms, involving the stakeholders being part of the national markets themselves.

Consequently, improvements in both constructions market accessibility and protection of consumer through easier access to insurance and better coverage appear to be mainly achievable through "transnational communication" mechanisms. In other words, our main lever to promote insurance is information. Whether it be through incentives in order to stimulate the market or through sharing out the knowledge to the different actors involved.

Recommendation

The Facilitator, independent Authority appointed by the European Commission, would be in charge of advising and helping the service providers of the construction sector in order to facilitate the access to insurance for their cross border activities.

The Facilitator would have to:

- Gather and update data on the 28 Host States insurance construction systems. The facilitator could use the Elios2 *mapping*, keep it up to date and improve it based on feedback.
- Deliver to the service providers information as appropriate and as efficient as possible about the existing constraints and possible solutions.
- Set up links with national mediators, stakeholders and actors of the insurance market, the points of single contacts (PSC)…
- Handle residual difficulties through negotiation.
- Centralise demands concerning cross border activities in the construction sector, being able to make a reliable assessment of the (potentially) hindrance of access to insurance for the Single Market.

From our point of view, in order to avoid any confusion or uncertainty, the role of the Facilitator has to be clearly delimited and defined in accordance with the difficulties to be fixed and the principle of subsidiarity.

Thus, the Facilitator, consulted only if a problem in the normal functioning of the market appears, will not be in charge of:

- Making it compulsory for an insurer to cover a risk,
- Managing the contractual process (guarantees, premium, claims…)

This solution would have a number of advantages. These include:

- Allowing anyone concerned to know to whom claims might be submitted (complaints bureau),
- Fixing on a tailored and consensual basis a certainly large part of the existing difficulties
- Giving a real census of these difficulties.

In order to contribute to the "visibility" of the EFACI and to help him to fix the difficulties, a Liaison Committee would be set up. This Committee has to be composed by a small and efficient team:

- 1 representative of the EC
- 1 (or 2) experts
- 2 (or 3) representatives of the construction sector
- 2 (or 3) representatives of the insurance sector

This solution, which presents the considerable advantage of being not expansive, could be in a first time tested during a limited period of time (3 years for instance).