EMERISDA

Questionnaire for assessment of users' satisfaction

D3.2 version 25-07-2014

LEAD BENEFICIARY : TU DELFT

PARTICIPANTS: BBRI, CNR-ISAC

SUMMARY REPORT ON EXISTING METHODS AGAINST RISING DAMP

1. Introduction

A questionnaire is developed to be used for interviews in the different participating countries. Interviews will be carried out with the users, including owners and/or inhabitants of the buildings, architects and contractors, in order to define their satisfaction with the intervention according to the questionnaire. The intervention methods are chosen according to DL2.1. A report on the on the findings of the users' satisfaction will be produced in DL3.7.

2. Questionnaire

There are two types of questionnaires developed, a full version and a short version. The full version is more detailed and specific about the intervention. The short version can possibly be used for owners. These two types of questionnaires will be discussed in the following sections. The questionnaires are created using Google Docs, which is an online and free program. The questionnaires are available online through the following links:

Emerisda FULL English:

https://docs.google.com/forms/d/1e9nGDlpMecf7AUD6CEWxvYXDm__BC2jEsLDOt_2wXp8/viewform

Emerisda SHORT English:

https://docs.google.com/forms/d/1hsG1CnrIreMFQfta4qCr_rU0Rs_DzLUDanB4UCYQbCc/viewform

The questionnaire is also available in Dutch and Italian:

Emerisda FULL Dutch:

https://docs.google.com/forms/d/17QRKDVnTWwSpe_nNj_maRjwViMrvnU3eh_hIea6j5C8/viewform

Emerisda SHORT Dutch:

https://docs.google.com/forms/d/1_dMxFKnaO_t65xa0x97XGeux6LjIh6UQjLG4PTCadxY/viewform

Emerisda FULL Italian (translation in progress (ISAC CNR):

https://docs.google.com/forms/d/1kE_EOnfSY4llgoRIUfkS7NvUTMJ65X7bGqJ7NiMUcV4/viewform

Emerisda SHORT Italian (translation in progress (ISAC CNR):

https://docs.google.com/forms/d/19HAVkdv5mxtbfkI9XQTjolkDdaw60m3rJS9XGDBkWD0/viewform

2.1 Questionnaire full and short version

The printed version of the questionnaires can be found in attachment.

2.2 Data Collection Questionnaire

By loggin in to your google account one can see an overview of the questionnaires that are shared with you or that you have created (figure 1). Automatically a file is created with the same name of the questionnaire followed by '(reactions)'.

figure 1 Overview of online questionnaires

The Data is automatically collected in this file by the program of Google Docs. In the overview, automatically a file is generated which collects the data from the questionnaires. By clicking this file, an table overview with answers to all questions is generated (figure 2). The file can download as excel or pdf file.

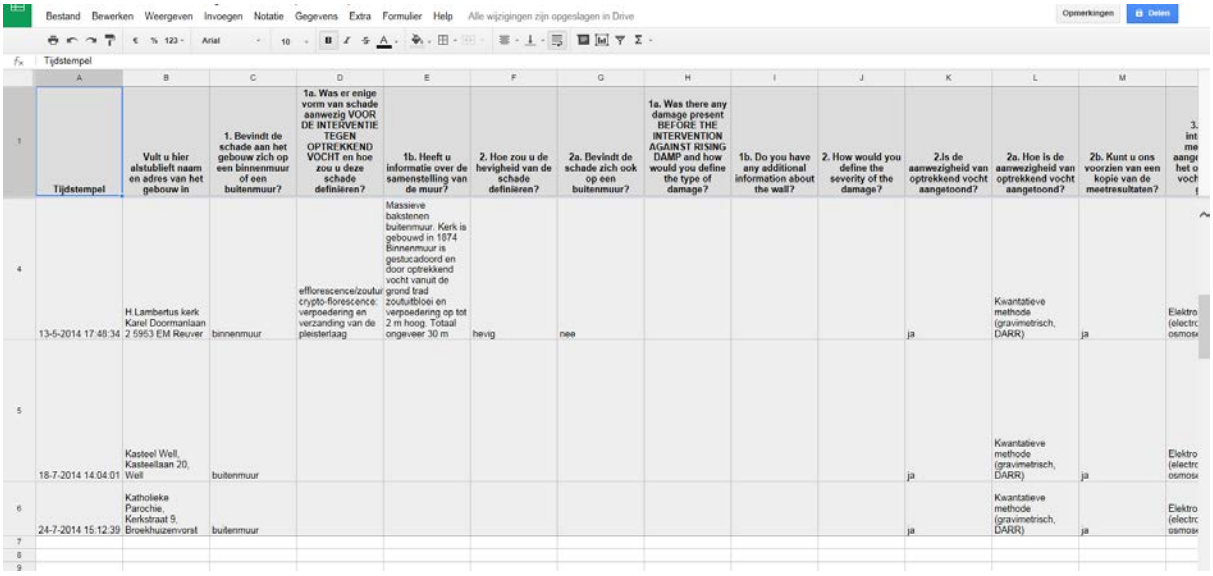


figure 2 Automatically collection of data

To view the results of the questionnaire displayed in graphs, click in the window of figure 2 on ‘Form’. This is underneath the survey name on the same row as ‘File’ and ‘Edit’. Then click on ‘Show summary of responses’. The following graphs will be displayed, of which an example of the current Dutch results is given in figure 3.

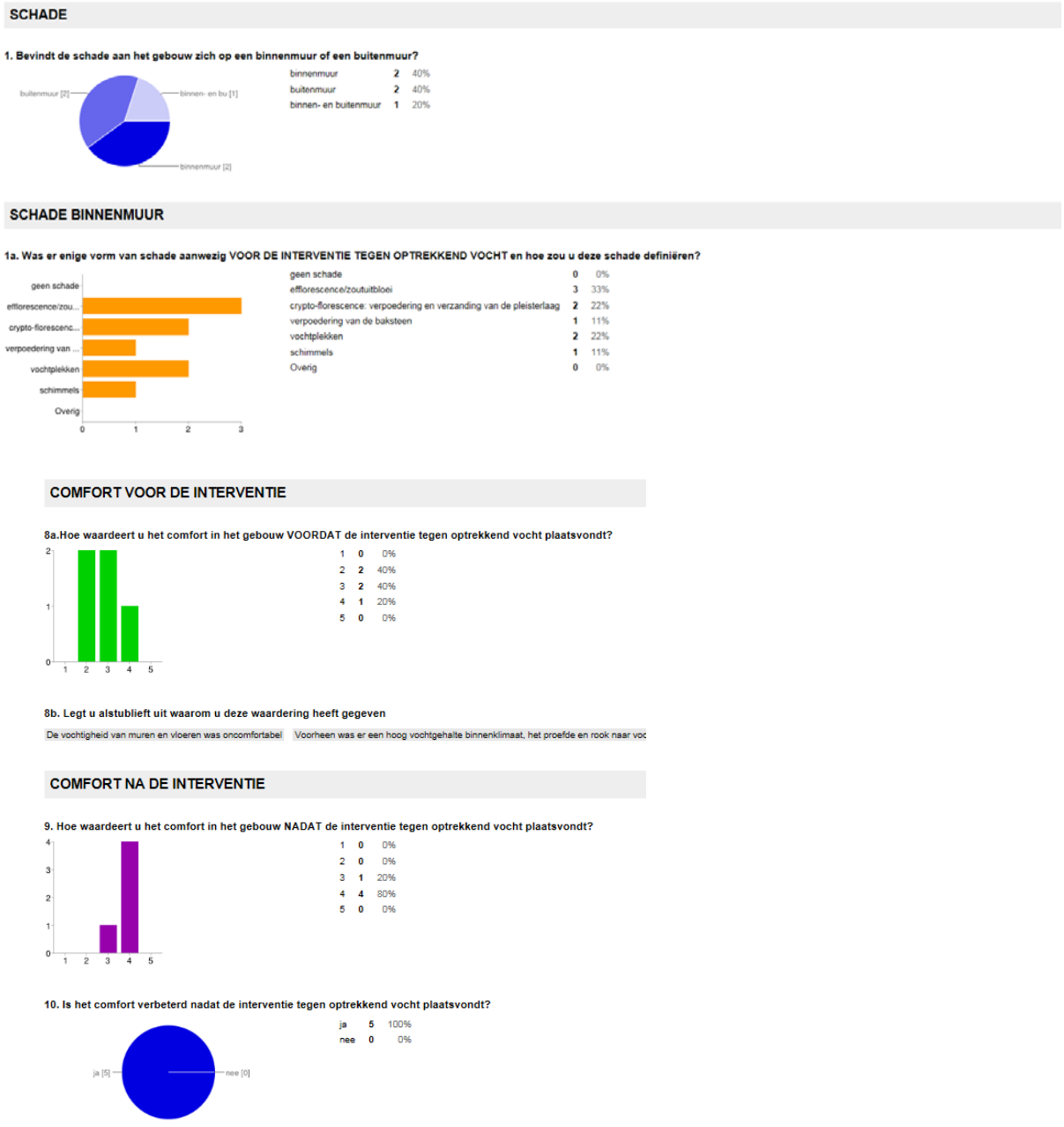


figure 3 Display of the results of the questionnaire

2.3 Selection of Case Studies for evaluation of users' satisfaction

The collection of case studies is advised to be done in an excel file, where the methods according to DL2.1 are used as categories. Every case study is identified by his own code: Mechanical Interruption (M), Chemical Interruption (C), Knapen Siphons (K), Drying Stones (D), Wall based ventilation (W), Dehumidification plaster (DP), Electro-osmosis (EO) and Other Electrokinetic phenomena (EK). So for example the second case study of Ecodry will get the Other Electrokinetic phenomena code: EK, followed by 2: EK2. This code can be used to easily couple this file to more information about the case study. The code can also be used for the data collection on a map, as described in 2.3.2. Furthermore contact information is added and there is a column in which can be filled in if the questionnaire is send and completed.

There is also the possibility to fill in if a visit is brought to a case study. This was for example the case in the South of the Netherlands, where Michiel van Hunen (RCE), Linda Miedema (TUD) and Barbara Lubelli (TUD) visited three objects where the Ecodry system was placed and talked to their users. In an additional column there is the possibility to add more information about the case study. The structure of the excel file is showed in figure 4.

	A	B	C	D	E	F	G	H	I
1	JPI - Effectiveness of methods against rising damp in buildings: European practice and perspective								
2									
3	code	system	Name and adress of the building	contact	contact information	questionnaire		visited?	more information
4						send?	completed?		
5	M	Mechanical interruption							
6	M1		Heilige Lambertus Basiliek, Enschedesestraat 3	J. Jongbloed / J. Stegeman	074-2459120 / j.stegeman@hengelo.nl				
7	C	Chemical interruption							
8	C1	(flessenmethode)	Stationsgebouw Enkhuizen	Koos Hoebe	06-55845566 / koos.hoebe@ns.nl				
9	C2	(Remmers)	Woonhuis Boerensteeg 12, 1012 CC, Amsterdam	Lucas Evers	06-28237157 / lucas.evers@planet.nl				
10	C3	(recondit)	Woonhuis, Voorstraat 23, Delft	W. Naaborg	015-2122416 / info@naaborg.nl				
11	C4	(dryworks)	Woonhuis, Rouaansekaai 9, 4331HA, Middelburg	Robert Peerlings	0118-466599 / drp@xs4all.nl				
12	C5	Remmers	Oud Wijk 2, Utrecht	bewoonster Irene Vuijk	i.b.vuijk@kpnplanet.nl				najaar 2003 injectie (Van L
13	C6		Rietveld 147A, Delft	Anja de Vries	anja.de.vries@gmail.com				
14									
15	K	Knapen siphons							
16									
17	D	Drying stones							
18	D1	schrijver	Raamsingel 42, Haarlem	R. Bresser	023-5395310				plaatsing tussen 2009-201
19	D2	schrijver	Eerste Emmastraat 3, Haarlem	x	x				
20	D3	schrijver	Warmond, Leiden (1978, optrekkend vocht)	Familie Harder					http://www.schrijversystee
21	D4	schrijver	Opgeknapte Boerderijwoning, Zwolle (1872, optrekkend vocht)	Dhr en mevr de Boer					http://www.schrijversystee
22	D5	schrijver	Boerderijk, Zeeland (1853, optrekkend vocht)	Mevr de Kanter					http://www.schrijversystee
23	D6	schrijver	H. Willibrordkerk Oegstgeest	Pastorie	071 – 517 53 04				http://www.schrijversystee
24	D7	schrijver	Woningbouw Zaandijk (1920)	Woningbouwvereniging Rochdale	0756533222				http://www.schrijversystee
25									
26	W	Wall Based Ventilation							
27									
28	DP	Dehumidification Plaster							
29									
30	EO	Electro-osmosis							
31									
2	EK	Other Electrokinetic Phenomena							
33	EK1	Ecodry	Stadhouderslaan 200 Streekmuseum-schippersbeurs Elsloo	Gemeente Stein / Stichting Dhr Jan Pijpers	046-4359393/046-4371799 / info@streekmuseumelsloo.nl	yes	yes		2x, 16-12-2008/14-7-2009/
34	EK2	Ecodry	Wilhelminalaan 13 Reuver Kerk	Kerkbestuur, de heer Thijssen	077-4743675 / sjraarthijssen@hetnet.nl	yes	yes	yes	2x zeta, 19-1-2009/13-7-20
35	EK3	Ecodry	Spoorstraat 69 Brunssum	Wonen zuid - Vincent Deckers	06-22528753				kapa, 17-2-2009/27-7-2009
36	EK4	Ecodry	Zonnestraat 6 Brunssum	Wonen zuid - Vincent Deckers	06-22528753				1x, 8-2-2010/2-9-2010
37	EK5	Ecodry	Sterrenstraat 8 Brunssum	Wonen zuid - Vincent Deckers	06-22528753				1x, 23-2-2010/2-9-2010
38	EK6	Ecodry	Dr. Auhausstraat 1 Tilburg- De Rooi Pannen	De Rooi Pannen - Menno Klok	013-5955682				4xzeta, 5-3-2009/25-9-2009
39	EK7	Ecodry	Steenstraat (platz) Limburg	Zo Wonen - Paul Cuypers	06-54620043				6xkapa, 9-3-2009/13-10-20
40	EK8	Ecodry	Minderbroedersberg 4-6 Maastricht	Universiteit Maastricht - Pierre Bessems	043-3882611				zeta, 13-7-2009/13-1-2010
41	EK9	Ecodry	Sintservaasklooster 32 Maastricht	Hendrikx architecten - Jan Hendrikx	06-47733139				zeta, 9-11-2009/1-7-2010/
42	EK10	Ecodry	Berghstraat 22 Maastricht	Woonpunt - Gerard Wemmers	06-11319194				kapa, 11-12-2009/20-9-201
43	EK11	Ecodry	Havenpark 13-15 Zierikzee	Architect de Steunbeer - Pieter Van Traa	011-1450930 /0612877621/steunbeer@monumentenweb.n	talked to owner			kapa, 25-5-2010/1-12-2010

figure 4 Data Collection of case studies, the code of EK2 for example, can be referred to on the map in figure 6.

Note of TUD: (preliminary version/ work in progress/selection has to be made!)

At the moment we have collected different cases, we however have a big amount of cases were the Ecodry method was applied. We are trying to collect other cases and make a selection of case studies afterwards, in which every method is included equivalent.

2.3.1 A more detailed Test Case in The Netherlands: Paardenmarkt, Delft

In the Netherlands, we had the possibility to investigate one case study more in detail and use this as a test case. This test case is situated at the Paardenmarkt in the city centre of Delft. A large part of the building is at the moment not in use, which makes it, together with the long size for reference points, a good building for a test case.

figure 5 Test Case at the Paardenmarkt, Delft (B. Lubelli, 2014)

On the 28th of March, benchmarks were performed by using the gravimetric method as described in DL2.3. Five different profiles were taken, according to figure 5. On 11th of April, two Ecodry systems were installed by the producer and placed according to figure 6. The Ecodry devices are given by black dots with their reach given as 12,1 and 14 meters. As can be concluded from the figure, points 3 and 4 are out of reach of the system and can therefore be used as reference points. At the moment we are monitoring the situation. In October the first measurements after 6 months of the installation of the Ecodry system will be performed.

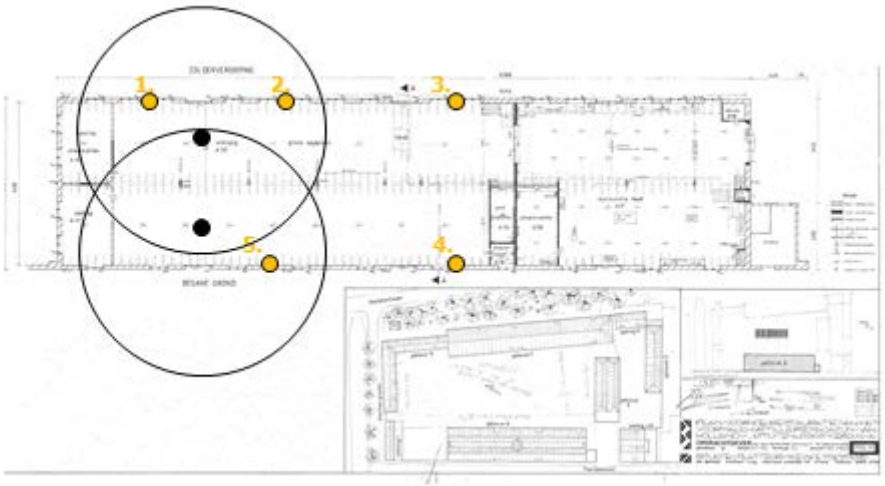


figure 6 Location of Ecodry devices given by black dots and location of measurement profiles given by orange numbered dots (L. Miedema, 2014)

2.3.2 Overview of Case studies: Data Collection

For the data collection of the case studies, we suggest to use the following method of mapping using https://mapsengine.google.com/map/. By sharing the same map, a complete overview of methods in the participating countries can be established. By filling in the address of the buildings where interventions against rising damp took place, marks are placed which can be grouped, coloured and labelled according to the type of method that was used. For example in the image below, a first distinction is made between Ecodry, Chemical Interruption and Drying Stones. This is just a start and categories have to be defined according to DL2.1.

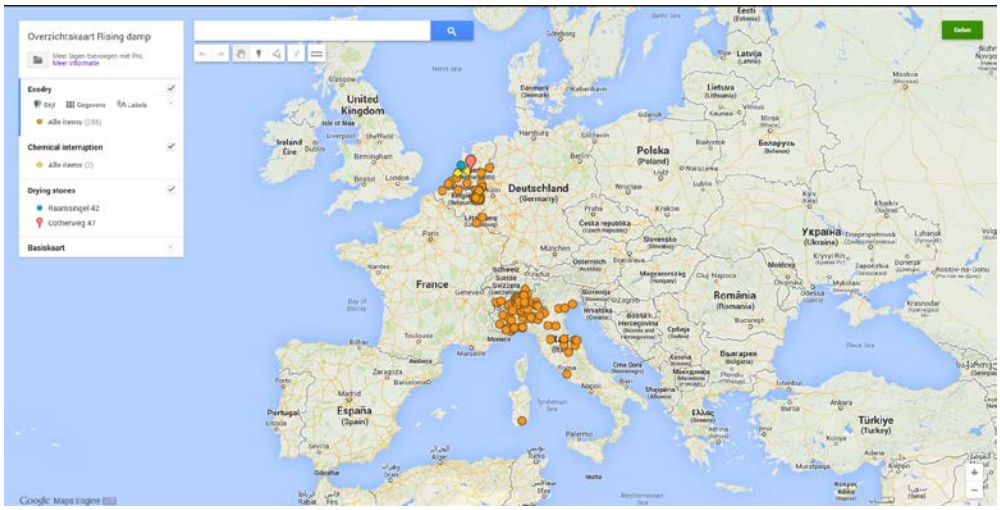


figure 7 Overview of case studies with the use of google mapsengine

One can zoom in at different locations and attach more information or a link to the mark. The code of the case study as mentioned in the excel file, should be mentioned here too.

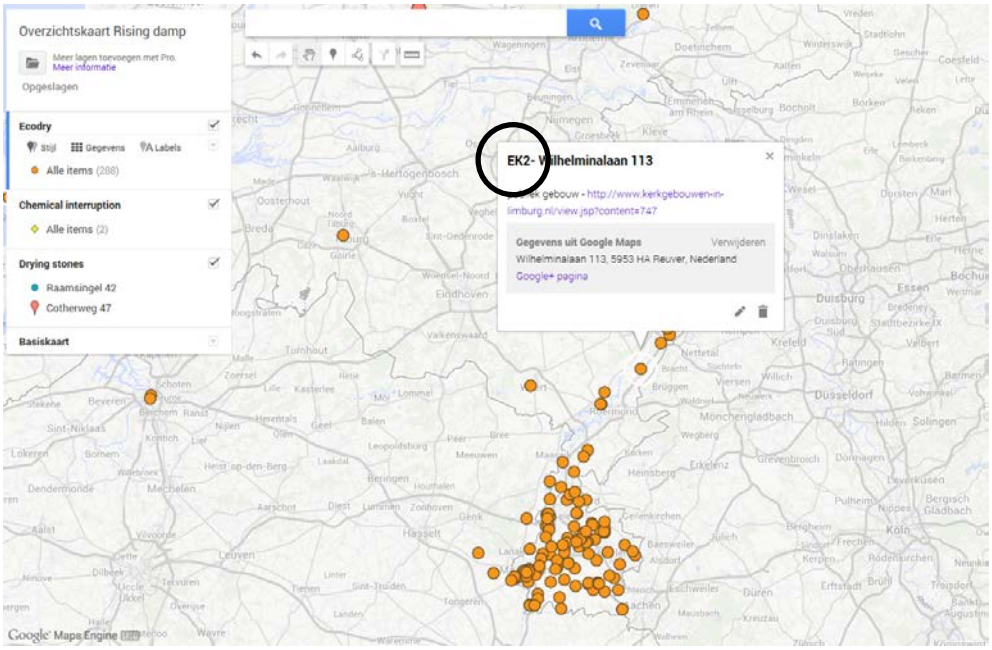


figure 8 Additional information about the case study can be added, important is to mention the code of the case study as described in the excel file. In the image, for example EK2 (Electrokinetic phenomena, case study 2).

It is also possible to make this kind of map for the location of the companies. In this way the relation between the location of the company and the location of the case studies can be made visible . An example is given in figure 9 in the case of Ecodry companies and applications in Italy.

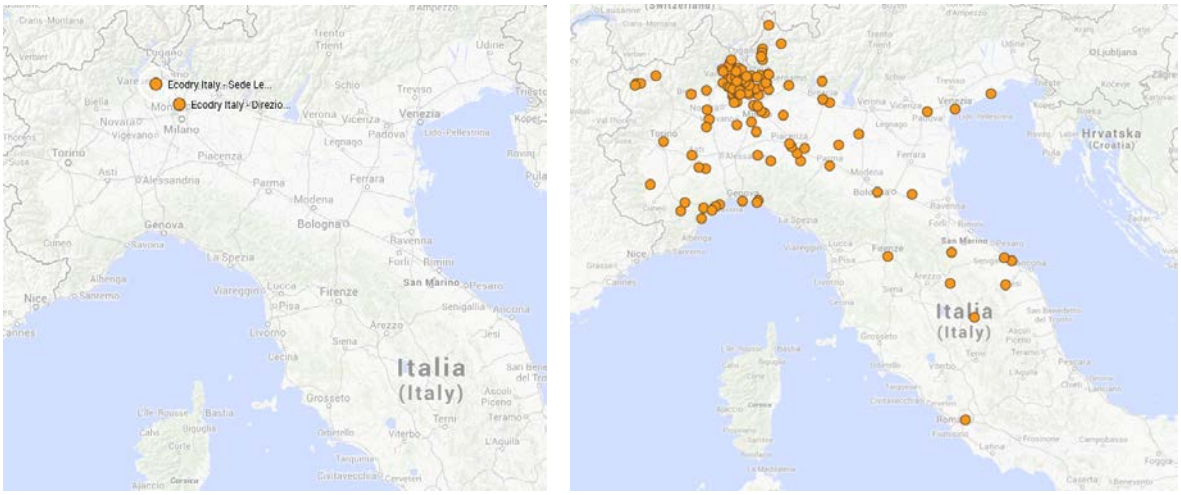


figure 9 Relation between location of the company and location of case studies can be made visible by using google mapsengine

3. Attachment: Questionnaire full and short version

On the following pages, both the full English version and short English version of the questionnaire are attached.

JPI - Emerisda FULL

More and more buildings in Europe are being damaged by rising damp. Rising damp is a recurrent hazard to ancient buildings in Europe and its relevance is expected to increase in the future, due to climate changes. The presence of rising damp in walls does not only create an unpleasant climate in buildings, but it also enhances damage processes as frost action, salt crystallization and biological growth, with possible consequences on the health of the inhabitants. The relevance of this problem is reflected by the large variety of products on the market. This wide and differentiated offer, together with the scarce and fragmented scientific information on the effectiveness of the methods, make it difficult to choose a suitable intervention on a sound basis.

For this reason, an international project has been set up involving Belgium (Belgian Building Research Institute), The Netherlands (Delft University of Technology and Cultural Heritage Agency) and Italy (National Research Council and SME's). The project is entitled 'EMERISDA – Effectiveness of methods against rising damp in buildings: European practice and perspective'. The aims of this project are to come to a scientifically based evaluation of the effectiveness of different methods against rising damp and to define a decision support tool for a conscious choice and successful use of these methods in the practice of conservation.

In the framework of this research we are collecting information on buildings affected by rising damp on which interventions have been carried out in the past. We need you help and hope in your collaboration. The questionnaire will take about 10 minutes of your time.

1. **Please fill in name and address of the building**

.....

DAMAGE

2.

1. Is the damage to the building located at an interior or exterior wall?
(with exterior wall a wall is meant at the outside of the building which is influenced by weather conditions)
Markeer slechts één ovaal.

- ◯ interior wall *Ga naar vraag 3.*
- ◯ exterior wall *Ga naar vraag 7.*
- ◯ interior and exterior wall *Ga naar vraag 3.*

DAMAGE INTERIOR WALL

3.

1a. Was there any damage present BEFORE THE INTERVENTION AGAINST RISING DAMP and how would you define the type of damage?
(for references look at the images below)
Vink alle toepasselijke opties aan.

- ☐ no damage
- ☐ efflorescence
- ☐ crypto-florescence: powdering and sanding of plaster
- ☐ powdering brick
- ☐ moisture spots
- ☐ moulds
- ☐ Anders: .....

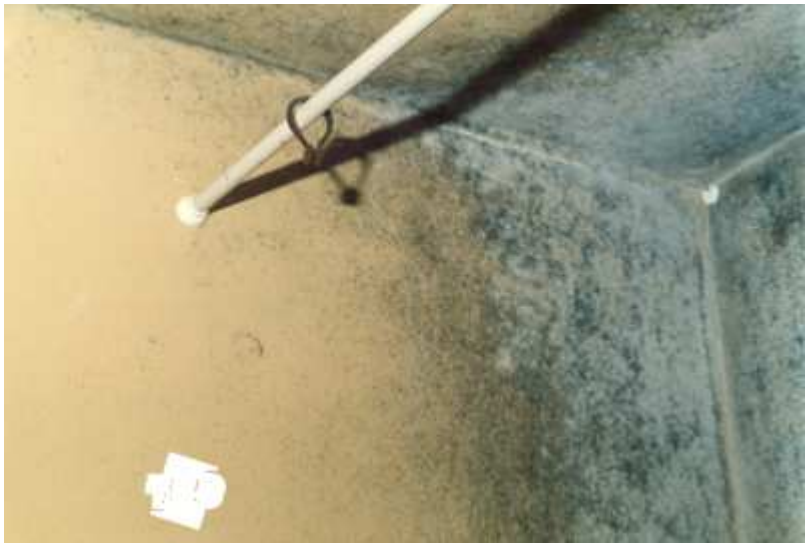
Efflorescence (source: MDDS)

Crypto-florescence (source: MDDS)

Powdering brick (source: MDDS)

Moisture spots (source: MDDS)

Moulds (source: MDDS)



4.

1b. Do you have any additional information about the wall?
(such as material, finishing layer, orientation, dimensions)

.....

.....

.....

.....

.....

5.

2. How would you define the severity of the damage?

Markeer slechts één ovaal.

- minor
- average
- severe

6.

2a. Is the damage also located at an EXTERIOR wall?

Markeer slechts één ovaal.

- yes *Ga naar vraag 7.*
- no *Ga naar vraag 10.*

DAMAGE EXTERIOR WALL

7.

1a. Was there any damage present BEFORE THE INTERVENTION AGAINST RISING DAMP and how would you define the type of damage?

(for references look at the images below)

Vink alle toepasselijke opties aan.

- [ ] no damage
- [ ] efflorescence
- [ ] crypto-florescence: powdering and sanding of plaster
- [ ] powdering brick
- [ ] moisture spots
- [ ] moulds
- [ ] Anders: .....

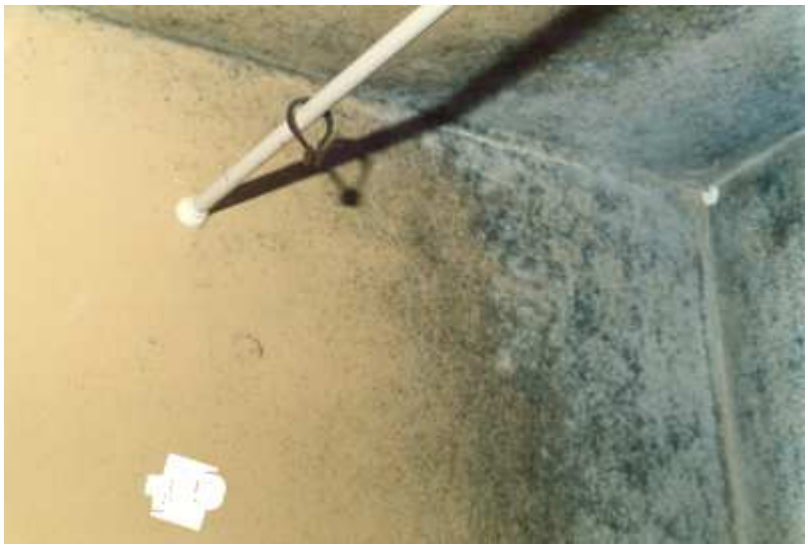
Efflorescence (source: MDDS)

Crypto-florescence (source: MDDS)

Powdering brick (source: MDDS)

Moisture spots (source: MDDS)

Moulds (source: MDDS)



8.

1b. Do you have any additional information about the wall?
(such as material, finishing layer, orientation, dimensions)

.....

.....

.....

.....

.....

9.

2. How would you define the severity of the damage?
Markeer slechts één ovaal.

- ◯ minor
- ◯ average
- ◯ severe

RISING DAMP

10.

2.Was the presence of rising damp determined?
Markeer slechts één ovaal.

- ◯ yes
- ◯ no *Ga naar vraag 13.*

RISING DAMP

11.

2a. How was the presence of rising damp determined?

Vink alle toepasselijke opties aan.

- [ ] Quantative method (gravimetric, DARR)
- [ ] Qualitative method (magnetic, pins)
- [ ] Visually

12.

2b. Could you provide us with a copy of the measurement results?

Markeer slechts één ovaal.

- ◯ yes
- ◯ no

INTERVENTION

13.

3. Which intervention method was applied to stop rising damp?

Vink alle toepasselijke opties aan.

- [ ] Mechanical interruption
- [ ] Chemical interruption (injections)
- [ ] Electro-based methods
- [ ] Drying pipes and drying stones
- [ ] Dehumidifying plaster
- [ ] No method
- [ ] Anders: .....

14.

3a. If you have more information about the applied product please fill in here

(type of product, producer)

.....

.....

.....

.....

.....

15.

3b. Why did you choose this method?

Vink alle toepasselijke opties aan.

- [ ] Costs
- [ ] Easiness of execution
- [ ] Good experience reported by others
- [ ] Adviced by company
- [ ] Adviced by municipality/ government
- [ ] Anders: .....

16.

3c. In which year did the intervention against rising damp take place?

.....

17.

3d. What were the costs of the intervention method?

Markeer slechts één ovaal.

- ◯ < €3000
- ◯ €3000 - €5000
- ◯ > €5000

18.

3e. Were any additional measurements taken? If so, which one (type of product, producer) ?

an additional measurement is for example a restoration plaster

.....

19.

3f. Where there any difficulties during the application of the intervention method?

.....

EFFECTIVENESS OF INTERVENTION

20.

3g. Was the effectiveness of the intervention method determined by measurements?

Markeer slechts één ovaal.

- ◯ yes
- ◯ no *Ga naar vraag 27.*

EFFECTIVENESS OF INTERVENTION

21.

3h. How many months after application was the effectiveness of the intervention determined?

Vink alle toepasselijke opties aan.

- [ ] within the first six months
- [ ] after 1 year
- [ ] after 2-5 years

22.

3i. By whom was the effectiveness of the intervention determined?

Vink alle toepasselijke opties aan.

- [ ] by the producer of the method
- [ ] by the contractor
- [ ] by independent research institute

23.

3j. With which method was the effectiveness of the intervention determined?

Vink alle toepasselijke opties aan.

- [ ] Quantative method (gravimetrice, DARR)
- [ ] Qualitative method (magnetic, pins)
- [ ] Visually

24.

3k. Was the intervention successful according to the measurements? Please explain below

Markeer slechts één ovaal.

- ◯ yes
- ◯ no

25.

.....

.....

.....

.....

.....

26.

3L. Could you provide us with a copy of the results after the application of the intervention?

Markeer slechts één ovaal.

- ◯ yes
- ◯ no

EFFECTIVENESS OF INTERVENTION

27.

4. Was the applied intervention in your opinion effective?

Markeer slechts één ovaal.

- yes
- no

28.

5. Please explain why the applied intervention was effective or not

.....

.....

.....

.....

.....

29.

6. Did damage problems reappear?

Markeer slechts één ovaal.

- yes
- no *Ga naar vraag 32.*

EFFECTIVENESS OF INTERVENTION

30.

7. What kind of problems did appear after the intervention?

(for references look at the images below)

Vink alle toepasselijke opties aan.

- [ ] no damage
- [ ] efflorescence
- [ ] crypto-florescence: powdering and sanding of plaster
- [ ] powdering brick
- [ ] moisture spots
- [ ] moulds
- [ ] Anders: .....

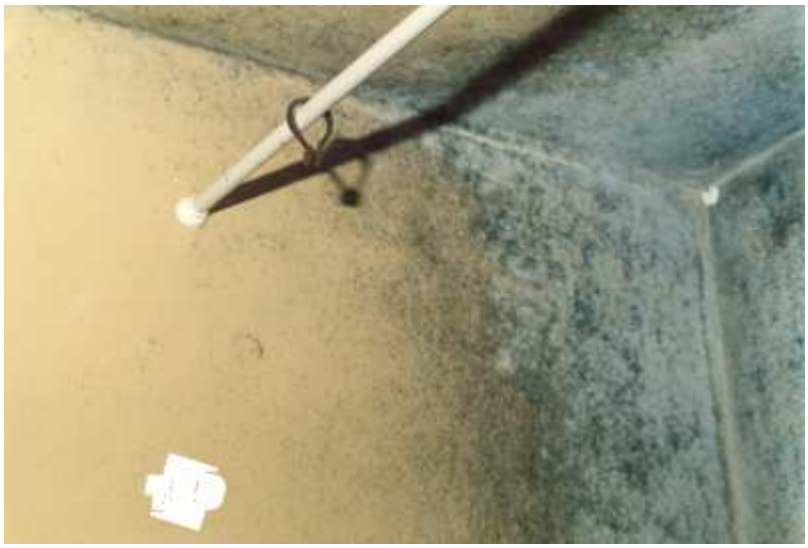
Efflorescence (source: MDDS)

Crypto-florescence (source: MDDS)

Powdering brick (source: MDDS)

Moisture spots (source: MDDS)

Moulds (source: MDDS)



31.

7a. After which period did problems reappear?

Vink alle toepasselijke opties aan.

- [ ] 1-2 years
- [ ] 2-5 years
- [ ] 5-10 years
- [ ] after 10 years or more

COMFORT BEFORE INTERVENTION

32.

8a. How would you value the satisfaction in the building BEFORE the intervention against rising damp took place?

1 is poor - 5 is comfortable

Markeer slechts één ovaal.

1	2	3	4	5
◯	◯	◯	◯	◯

33.

8b. Please explain why you gave this mark

.....

.....

.....

.....

.....

COMFORT AFTER INTERVENTION

34.

9. How would you value the satisfaction in the building AFTER the intervention against rising damp took place?

1 is poor - 5 is comfortable

Markeer slechts één ovaal.

1	2	3	4	5
◯	◯	◯	◯	◯

35.

10. Did the comfort improve AFTER the intervention?

Markeer slechts één ovaal.

- ◯ yes
- ◯ no

Thank you for your contribution!

if you have information about another case study please use the link at the end to fill out another form

36.

If you have some additional information or remarks, please them in hereafter

.....

.....

.....

.....

.....

JPI - Emerisda SHORT

More and more buildings in Europe are being damaged by rising damp. Rising damp is a recurrent hazard to ancient buildings in Europe and its relevance is expected to increase in the future, due to climate changes. The presence of rising damp in walls does not only create an unpleasant climate in buildings, but it also enhances damage processes as frost action, salt crystallization and biological growth, with possible consequences on the health of the inhabitants. The relevance of this problem is reflected by the large variety of products on the market. This wide and differentiated offer, together with the scarce and fragmented scientific information on the effectiveness of the methods, make it difficult to choose a suitable intervention on a sound basis.

For this reason, an international project has been set up involving Belgium (Belgian Building Research Institute), The Netherlands (Delft University of Technology and Cultural Heritage Agency) and Italy (National Research Council and SME's). The project is entitled 'EMERISDA – Effectiveness of methods against rising damp in buildings: European practice and perspective'. The aims of this project are to come to a scientifically based evaluation of the effectiveness of different methods against rising damp and to define a decision support tool for a conscious choice and successful use of these methods in the practice of conservation.

In the framework of this research we are collecting information on buildings affected by rising damp on which interventions have been carried out in the past. We need you help and hope in your collaboration. The questionnaire will take about 10 minutes of your time.

1. **Please fill in name and address of the building**

.....

DAMAGE

2.

1a. Was there any damage present BEFORE THE INTERVENTION AGAINST RISING DAMP and how would you define the type of damage?
(for references look at the images below)
Vink alle toepasselijke opties aan.

- [ ] no damage
- [ ] efflorescence
- [ ] crypto-florescence: powdering and sanding of plaster
- [ ] powdering brick
- [ ] moisture spots
- [ ] moulds
- [ ] Anders: .....

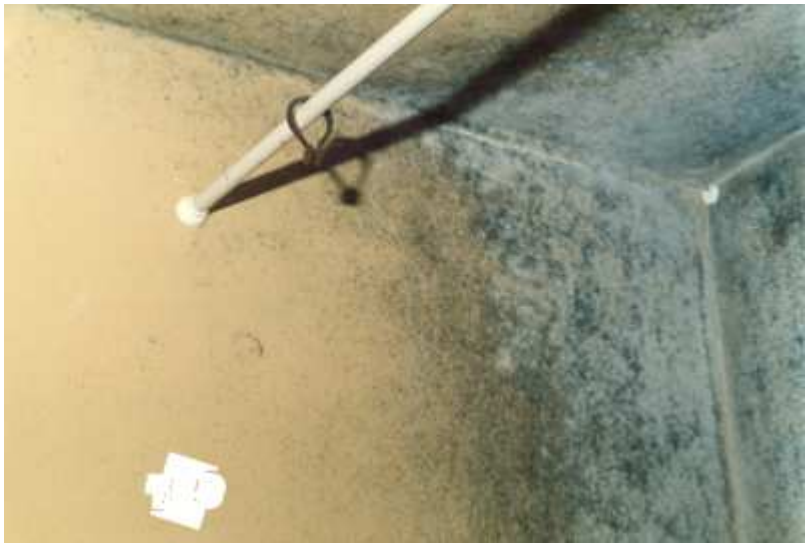
Efflorescence (source: MDDS)

Crypto-florescence (source: MDDS)

Powdering brick (source: MDDS)

Moisture spots (source: MDDS)

Moulds (source: MDDS)



3.

1b. Do you have any additional information about the wall?
(such as material, finishing layer, orientation, dimensions)

.....

.....

.....

.....

.....

4.

2. How would you define the severity of the damage?

Markeer slechts één ovaal.

- ◯ minor
- ◯ average
- ◯ severe

INTERVENTION

5.

3. Which intervention method was applied to stop rising damp?

Vink alle toepasselijke opties aan.

- ☐ Mechanical interruption
- ☐ Chemical interruption (injections)
- ☐ Electro-based methods
- ☐ Drying pipes and drying stones
- ☐ Dehumidifying plaster
- ☐ No method
- ☐ Anders: .....

6.

3b. Why did you choose this method?

Vink alle toepasselijke opties aan.

- ☐ Costs
- ☐ Easiness of execution
- ☐ Good experience reported by others
- ☐ Adviced by company
- ☐ Adviced by municipality/ government
- ☐ Anders: .....

7.

3c. In which year did the intervention against rising damp take place?

.....

8.

3d. What were the costs of the intervention method?

Markeer slechts één ovaal.

- ◯ < €3000
- ◯ €3000 - €5000
- ◯ > €5000

EFFECTIVENESS OF INTERVENTION

9.

4. Was the applied intervention in your opinion effective?
Markeer slechts één ovaal.

- yes
- no

10.

5. Please explain why the applied intervention was effective or not

.....

.....

.....

.....

.....

11.

6. Did damage problems reappear?
Markeer slechts één ovaal.

- yes
- no *Ga naar vraag 13.*

EFFECTIVENESS OF INTERVENTION

12.

7. What kind of problems did appear after the intervention?
(for references look at the images below)
Vink alle toepasselijke opties aan.

- [ ] no damage
- [ ] efflorescence
- [ ] crypto-florescence: powdering and sanding of plaster
- [ ] powdering brick
- [ ] moisture spots
- [ ] moulds
- [ ] Anders: .....

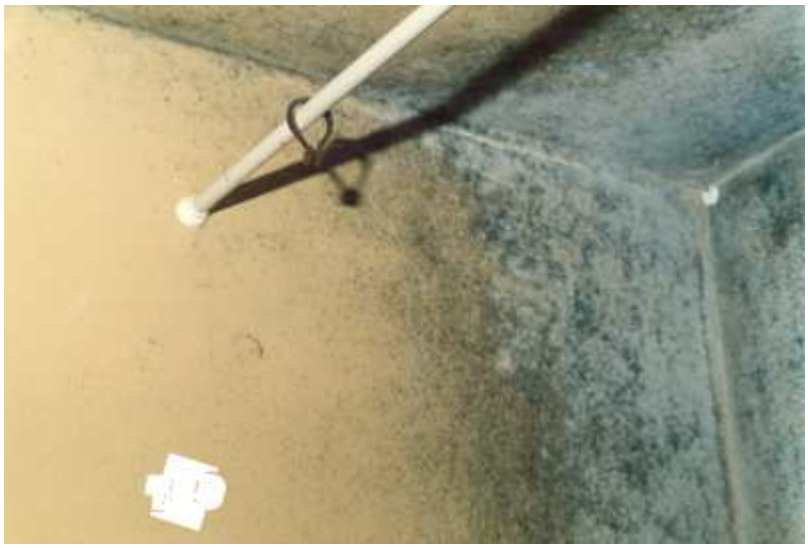
Efflorescence (source: MDDS)

Crypto-florescence (source: MDDS)

Powdering brick (source: MDDS)

Moisture spots (source: MDDS)

Moulds (source: MDDS)



COMFORT BEFORE INTERVENTION

13.

8a. How would you value the satisfaction in the building BEFORE the intervention against rising damp took place?

1 is poor - 5 is comfortable

Markeer slechts één ovaal.

1	2	3	4	5
◯	◯	◯	◯	◯

14.

8b. Please explain why you gave this mark

.....

.....

.....

.....

.....

COMFORT AFTER INTERVENTION

15.

9. How would you value the satisfaction in the building AFTER the intervention against rising damp took place?

1 is poor - 5 is comfortable

Markeer slechts één ovaal.

1	2	3	4	5
◯	◯	◯	◯	◯

16.

10. Did the comfort improve AFTER the intervention?

Markeer slechts één ovaal.

- yes
- no

Thank you for your contribution!

if you have information about another case study please use the link at the end to fill out another form

17.

If you have some additional information or remarks, please them in hereafter

.....

.....

.....

.....

.....