

Project acronym: timbre  
FP7-ENV-2010.3.1.5-2  
Contract no: 265364  
timbre Information System User Manual



# timbre

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Tailored Improvement of  
Brownfield Regeneration  
in Europe

## **timbre Information System User Manual**

**Version 0.2 as of 28 February 2014**

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# 1 Introduction

The EU FP7 project Timbre – Tailored Improvement for Brownfield Regeneration in Europe (Contract-No. 265364, <http://www.timbre-project.eu/>) aims to support end-users in overcoming existing barriers in brownfield regeneration by developing and providing customised problem and target-oriented packages of technologies, approaches and management tools for a megasite reuse planning and remediation.

The TIMBRE Information System aims at supporting stakeholders in sharing and accessing the information they need for the different steps of the brownfield management process.

This manual aims at supporting stakeholders in using the definitive version (Version 0.2) of the TIMBRE Information System for Brownfield Regeneration (Information System in the following paragraphs).

The Information System includes a wide database of web links to documents on regulations, technical manuals, tools and case studies for brownfield regeneration. Web links can be uploaded and visualized by users through a framework encompassing all phases of the brownfield regeneration process. The system strongly relies on inputs from users, who are expected to upload and share new information, to search the database and to evaluate the outputs provided by the tool. An Artificial Neural Network methodology supports the ranking of the provided outputs considering a set of criteria, including for example the typology of user, his/her search aim, the country where to apply the needed information, the information categories of interest and the evaluation of documents provided by previous users.

## 2 timbre Information System quick start: registration and log in

Only registered users can access the Information System. To register it is necessary to go to the webpage <http://www.timbre-project.eu/informationssystem.html>, and click on “Register” to create a new account (Fig. 1).

The screenshot shows the 'Introduction to Timbre' section at the top, followed by a 'Login' form. The form includes fields for 'Email:' and 'Password:', a 'Forgot password?' link, and 'Login' and 'Register' buttons. Below the form is a 'New user?' label and another 'Register' button. At the bottom, there is a 'Disclaimer' section and logos for the European Union and the Seventh Framework Programme.

**Introduction to Timbre**

The European FP7 project timbre - Tailored Improvement for Brownfield Regeneration in Europe - aims to support end-users in overcoming existing barriers in brownfield regeneration by developing and providing customised problem and target-oriented packages of technologies, approaches and management tools for a megasite's reuse planning and remediation.

Therefore, this Information System is meant to be an information platform and an information management tool to support experts and end-users to get access to all the available information concerning brownfields regeneration processes.

**Login**

Email:

Password:

[Forgot password?](#)

New user?

**Disclaimer**

This software is aimed at assisting brownfield regeneration stakeholders. It is provided for information purposes only and its contents are not intended to replace consultation of any applicable legal sources or the necessary advice of a legal expert, where appropriate. This software has been produced in the context of the Timbre Project. The research leading to these results has received funding from the European Community's Seventh Framework Programme (FP7 2011-2014) under grant agreement no 265364. All information in this software is provided "as is" and no guarantee or warranty is given that the information is fit for any particular purpose. The user therefore uses the information at its sole risk and liability. For the avoidance of all doubts, the European Commission has no liability in respect of this software, which is merely representing the Timbre consortium view.



 

Figure 1. Information System page for new and registered users.

The registration procedure requires new users to fill in the fields in the web page showed in Figure 2. As mandatory data, the new user is required to indicate his e-mail address, to choose a password, and to indicate a preferred language and the stakeholder category/categories he belongs to.

As optional data, the new user can indicate his name, surname, and the organisation he works for. There is also a space for including additional information.

Timbre



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New user registration

**Mandatory data**

Email:

Password:

Confirm Password:

Preferred language:

Please, indicate in which stakeholder category/categories you are included (more than one answer is possible):

☐ Site owner

☐ Site neighbour

☐ Local authorities (town or city)

☐ Regional and sub-regional government

☐ Regional and national regulator

☐ Public interest group

☐ Developer/investor

☐ Local community group (neighbour-hood, districts)

☐ Technology provider

☐ Consultant

☐ Financier

☐ Contractor

☐ Insurer

☐ End-user

☐ Media

☐ Scientific community and researcher

☐ Other:

**Optional data**

Name:

Surname:

Organisation you work for:

Other:

Cancel

Confirm

Figure 2. Information System: registration procedure.

Once the registration procedure has been completed, the new user can access directly the first page of the Information System.

For accessing the Information System as registered user, it is necessary to go the webpage <http://www.timbre-project.eu/informationssystem.html> and to log in with the username and password.

In the next sections the procedures to explore and to use the Information System are illustrated, including how to search for and evaluate the collected information, how to upload new web links and how to modify and delete already existing web links.

### 3 Search for information in the Information System

#### 3.1 Definition of the search aim and selection of the Country of interest

After the log in, for each search session the user is asked to indicate his specific search aim, that is, a specific information goal that the user wants to achieve when using the Information System (see Figure 3). This information is used by the tool to provide more tailored information to each user.

For each session, in the same web page, the user is also asked to indicate the country where the needed information is intended to be applied. Please note that this step is not compulsory, so the user can skip it by clicking on the button “Proceed”.

**Which is your search goal?**

**Looking for information\* on:**

☐ BFs with the highest redevelopment potential

☐ BFs regeneration barriers;

☐ National strategies and guidelines for BF regeneration

☐ Stakeholders analysis

☐ Social benefits and impacts of BFs

☐ Economic benefits of BFs

☐ Rural redevelopment of BFs

☐ Ecological issues related to BF management (e.g., presence of biotope, type of biotope, value of biotope, protected species, red-list species)

☐ Residential redevelopment of BFs

☐ (Land regeneration) Sustainable BF regeneration

☐ Planning (land use information, regional/urban land use plans)

☐ Risk assessment

☐ Characterization of soil and groundwater

☐ Remediation

☐ Reuse of building rubble

☐ Waste management and control

☐ Monitoring

☐ Funds for BF regeneration

☐ BF database (lists of BFs with related data, e.g. localization, area, typology, former/historical utilization, contamination, limitations in use, etc.)

☐ Best practices and successful case studies of BF regeneration

☐ The adoption of Public Private Partnership strategies in BF management

☐ Other:

\*i.e.: regulations/technical manuals/tools/case studies.**In which country (if any) are you going to apply the needed information?**

Skip

Proceed

Figure 3. Definition of the search aim and selection of the country where to apply the needed information.

## 3.2 Selection of information categories

After indicating his search aim and his country of interest, the user can visualise the framework for the collection of information on brownfield regeneration that is composed of 13 “information categories” corresponding to the different idealised phases of the brownfield regeneration process (see Figure 4). The definition of each information category can be visualised passing the cursor on the boxes. Furthermore, detailed instructions for this step are available in English by clicking on the button “Show Instructions” (indicated by a red circle in Figure 4).

The above mentioned framework consists in a scheme where the main phases of the risk-based brownfield regeneration process correspond to “information categories” used to guide the collection/organisation and the consultation of the available information, in the form of web links. The user can select the information categories of interest for his search by clicking on the green checkmark close to each category. Selected categories turn to green (as shown in Figure 4). If the user wants to deactivate the already selected information categories, he can click on the red cross close to each category.

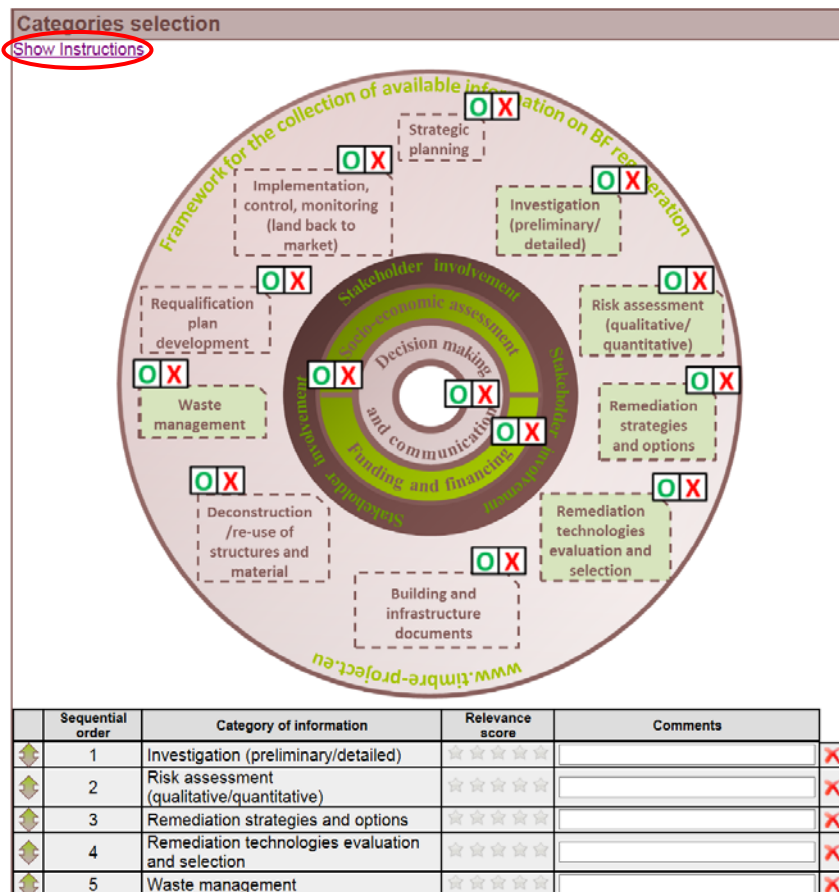


Figure 4. Selection of Information categories.

After selecting the information categories of interest, the system automatically lists them in the table below the framework. At this point the user can add or remove rows and the related information categories, and can change the sequential order of the selected information categories by dragging the rows. The selected order of categories will be reflected in the order of visualization of results.

Moreover, the user can give a relevance score to each category (from 1 to 5, by selecting the corresponding stars), according to the relevance that each category has in his search (see Figure 5). This information is used in the ranking methodology to tailor the ranking of provided results according to user's preferences. The user can also add, if needed, some comments to each information category.

Please note that this step is not compulsory, so the user can skip it by clicking on the button "Skip".











	Sequential order	Category of information	Relevance score	Comments	
	1	Investigation (preliminary/detailed)	★★★★☆	<input type="text"/>	
	2	Risk assessment (qualitative/quantitative)	★★★★☆	<input type="text"/>	
	3	Remediation strategies and options	★★★★☆	<input type="text"/>	
	4	Remediation technologies evaluation and selection	★★★★☆	<input type="text"/>	
	5	Waste management	★★★☆☆	<input type="text"/>	

Figure 5. Definition of Information categories – table details: example of selected information categories with relative Sequential order and Relevance score.

### 3.3 Visualisation of results

Stakeholders may have different specific needs when using the Information System, according to their work tasks, their experience, the regulatory context they are operating in, etc. The distinctive objective of the Information System is to provide each end-user with the most suitable information about regulation, approaches, methodologies, and tools for each of the main phases of the brownfield regeneration process, meeting his/her specific characteristics, requirements and needs in the most tailored way.

According to this objective, the Information System is meant to be not only a database, but rather a user-friendly search tool that provides the users with tailored lists of web links




ordered by relevance on the basis of specific criteria set by the user when performing his/her search.

This paragraph illustrates how the Information System provides the results of a search session (i.e., a ranked list of web links) and how the user can explore these results. Moreover the Artificial Neural Networks (ANN) methodology implemented in the system for ranking the search results is briefly explained (see Box 1).

After clicking the “Proceed” button in the page for selecting the categories, the user can access the page with the list of the web links provided as outputs of his search session, ranked according to the criteria used in the Artificial Neural Networks (ANN) methodology (see Figure 6). These web links belong to the information categories selected in the previous stage and are listed according to the sequential order indicated by the user. The selected information categories are also listed on the left side of the web page and appear in a darker brown colour, while other categories appear in a lighter colour.


Timbre > explore > All - Regulation



timbre information system

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admin - Logout

Help

Search

Links Control Panel

Insert new item

Start new search

All Regulation Technical manuals Tools Case studies

Country of reference:

All	Category: Investigation (preliminary/detailed)								
	Subcategory	Country of reference	Application scale	Title of the document (english)	Description of the document (english)	Original language link	English Version link	Other languages link	Rating
Investigation (preliminary/detailed)									
Risk assessment (qualitative/quantitative)	Preliminary and Detailed	Germany	European	Federal Soil Protection Act of 17 March 1998	German federal law for soil protection and contaminated sites	<a href="#">German version</a>	<a href="#">English version</a>	-	<div>★★★★★</div> <div>Evaluations: 1 Inappropriate: 1 Total visits: 1</div>
Remediation strategies and options	Preliminary and Detailed	Italy	National	Legislative Decree nr. 152 of 3rd of April 2006.	Italian national legislative decree for environment protection.	<a href="#">Italian version</a>	-	-	<div>★★★★★</div> <div>Evaluations: 1 Inappropriate: 0 Total visits: 1</div>
Remediation technologies evaluation and selection									
Waste management									
Strategic planning									
Building and infrastructure documents	Preliminary and Detailed	Austria	National	Federal Law on Remediation of Contaminated Sites of 7 June 1989	Legal basis for the registration of contaminated sites and the funding for their containment / remediation. Regulates the definition of terms, the contribution to the Fund for Contaminated Sites, the standard procedures for the registration and assessment of suspected contaminated sites, the basic conditions for clean-up and the responsibilities.	<a href="#">German version</a>	-	-	<div>★★★★★</div> <div>Evaluations: 1 Inappropriate: 0 Total visits: 1</div>
Deconstruction/re-use of structures materials									
Requalification plan development									
Implementation, control, monitoring (land back to market)	Preliminary and Detailed	Austria	National	ÖNORM S 2090: Sampling of soil gas	Norm for the sampling of soil gas regarding volatile and gaseous organic and inorganic matter. Requirements for sampling procedure, conservation and transport of the samples, as well as for sample preparation, analytical method and documentation. (purchase required)	<a href="#">German version</a>	-	-	<div>★★★★★</div> <div>Evaluations: 1 Inappropriate: 0 Total visits: 0</div>
Socio-economic assessment									
Funding and financing									
Decision-making and communication	Preliminary and Detailed	Austria	National	ÖNORM S 2091: Contaminated sites - Sampling of solids - Sampling of solids from waste deposits and industrial sites	Requirements for solid sampling (e.g. soil, subsoil) in connection with the investigation or remediation of contaminated sites. (purchase required)	<a href="#">German version</a>	-	-	<div>★★★★★</div> <div>Evaluations: 1 Inappropriate: 0 Total visits: 0</div>

Figure 6. Results of a search session: list of web links to relevant documents on brownfield regeneration selected and ranked according to the ANN methodology.

Within each information category, the web links are further subdivided according to the typology of documents in “Regulation”, “Technical manuals”, “Tools” and “Case-studies”. The search results in the category “Regulation” are shown on the top by default, then the user can move to another typology by clicking on the corresponding button on the bar.

For each document, the following information are visible in the output table:

- *Country of reference,*
- *application scale* (“European”, “National”, “Regional”, “Local” or “Not applicable”),
- *title of the document in English;*
- *description with key words in English;*
- *link to the original version of the document;*
- *link to the English version (if present);*
- *link to other versions (if present).*

Finally, on the right side of the web links, it is possible to visualise the average of the ratings attributed by previous users to the document, the number of evaluations obtained by the web link, the number of times that a web link has been considered not appropriate and the total number of visits. Even one judgement of inappropriateness, given to one web link, is visualised in red (Fig 7). For further information about the evaluation of documents, see paragraph 4.

Figure 7. Example of a web link that has been considerate inappropriate by one user.

If the user wants to visualise links to documents specifically developed in/for a particular country, he can refine his search using the functionality “Country of reference” on the top right corner of the screen that works like a filter on the provided search outputs (see the red circle in Figure 8).

**Box 1. Concise explanation of the Artificial Neural Networks (ANN) ranking methodology implemented in the system.**

An Artificial Neural Network (ANN) is a mathematical model inspired by biological neural networks and consists of an interconnected group of artificial neurons (i.e., mathematical functions). The ANN model processes information using prior knowledge of the modelled event which is collected during the so called “learning phases” (in the case at hand, special user sessions which provide the system with information on how to evaluate and rank the collected information). In addition to the “learning sessions”, the ANN model implemented in the Information System can “learn” from each search session performed by individual users. In this way, the ANN methodology for ranking the web links included in the Information System database allows to have a system with the ability to continuously learn from past search sessions in order to improve and refine the ranking of new results.

The methodology uses a set of information collected during each user search session as reported in Table 1. The description of each input is reported in the next paragraph.

**Table 1. Inputs for the ANN methodology**

User related	Session related	Scores	Statistics
Preferred language	Aim of search	Pertinence to user's search aim	Number of clicks from same stakeholder category
Stakeholder categories	Country of reference	Appropriateness for category of information	Total number of clicks
	Selected information categories	Usefulness	
	Scores of information categories	Clarity	
	Typology of information	Reliability and accuracy	

		Updating	
--	--	----------	--

### ***Description of input data, when they are acquired and used***

“User related” inputs are data provided by the users during registration to the Information System. They refer to specific user’ characteristics stored on his/her profile page (which can be updated/modified as needed). More specifically these inputs are:

- “Preferred language”: the user is asked to indicate the preferred language when searching for information. According to this selection the system provides a list of web links where documents are written in the user’s preferred language. The subsequent links refer to material written in English, and afterwards in other languages.
- “Stakeholder category/ies the user belongs to”: this information is used by the system in order to provide the user with the most visualized web links by previous users belonging to the same typology of stakeholders.

“Session related” inputs are provided by the user during each search session, thus they can change for the same user from session to session and depend on the specific tasks he/she is using the Information System for. These inputs are the following:

- “Aim of search”: for each session the user is asked to indicate his/her search aim when using the Information System. This information is used to provide tailored information to the user. A list of search aims will be provided and the users can choose one option from the list or indicate a new particular search aim.
- “Country of reference”: for each session, the user is asked to indicate the country where the needed information is intended to be applied. This information will affect the results (ranking of web links), which will be provided in the following order: first the links related to the selected country (including links to documents/materials written in the selected country’s language), then web links referring to the language indicate by the user as the preferred one, then links to material written in English, and finally in other languages.
- “Selected information categories”: in each session, the user is asked to select the information categories of the framework which are related to his/her main search aim.
- “Scores of information categories”: after selecting the information categories, the user is asked to evaluate them, assigning a score from 1 to 5 (where 1 is associated to the worst evaluation and 5 to the best evaluation) according to his/her personal preferences and expertise.
- “Typology of information”: after the selection of the information categories the user can select also the typology of information of interest, choosing among “Regulation”, “Technical manuals”, “Tools” and “Case studies”.

“Scores” inputs refer to the evaluation of the web links contents (i.e., associated documents) provided by each user at the end of a search session according to the following criteria:

- “Pertinence”: the user is asked to specify if a specific web link’s information is

pertinent and related with his/her previously defined aim of search (yes/no answer);

- “Appropriateness”: the user is asked to indicate if a specific web link’s information is appropriate for the previously indicated information category/ies (yes/no answer);
- “Usefulness”: the user is asked to evaluate the level of usefulness of the web link information in achieving the specific aim of search (score: from 1 to 5, where 1 is associated to the worst evaluation and 5 to the best evaluation);
- “Clarity”: the user is asked to evaluate the level of clarity of the web link information, considering the description of concepts and the use of specific vocabulary (score: from 1 to 5, where 1 is associated to the worst evaluation and 5 to the best evaluation);
- “Reliability and accuracy”: the user is asked to evaluate the level of reliability and, consequently, accuracy of the information that can be evaluated considering the quality and the trustworthiness of the source of information (score: from 1 to 5, where 1 is associated to the worst evaluation and 5 to the best evaluation);
- “Updating”: the user is asked to evaluate the level of topicality of the information and the compliance with the latest regulatory frameworks (score: from 1 to 5, where 1 is associated to the worst evaluation and 5 to the best evaluation).

These evaluation scores are stored by the system and used to refine the ranking in search sessions performed by following users.

Finally, the last inputs are referred to “Statistics”:

- Number of clicks received by a web link from users belonging to the same stakeholder category: it indicates the level of interest from the same stakeholder category for that web link.
- Total number of clicks: it indicates the level of interest for a particular web link.

Timbre > explore > All - Regulation admin - Logout

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search into the database Search

Links Control Panel Insert new item

Start new search Country of reference: All

Category: Investigation (preliminary/detailed)	Subcategory	Country of reference	Application scale	Title of the document (english)	Description of the document (english)	Original language link	English Version link	Other languages link	Rating
Investigation (preliminary/detailed)	Preliminary and Detailed	Germany	European	Federal Soil Protection Act of 17 March 1998	German federal law for soil protection and contaminated sites	<a href="#">German version</a>	<a href="#">English version</a>	-	★★★★★ Evaluations: 1 Inappropriate: 1 Total visits: 1
Risk assessment (qualitative/quantitative)	Preliminary and Detailed	Italy	National	Legislative Decree nr. 152 of 3rd of April 2006.	Italian national legislative decree for environment protection.	<a href="#">Italian version</a>	-	-	★★★★★ Evaluations: 1 Inappropriate: 0 Total visits: 1
Remediation strategies and options	Preliminary and Detailed	Austria	National	Federal Law on Remediation of Contaminated Sites of 7 June 1989	Legal basis for the registration of contaminated sites and the funding for their containment / remediation. Regulates the definition of terms, the contribution to the Fund for Contaminated Sites, the standard procedures for the registration and assessment of suspected contaminated sites, the basic conditions for clean-up and the responsibilities.	<a href="#">German version</a>	-	-	★★★★★ Evaluations: 1 Inappropriate: 0 Total visits: 1
Remediation technologies evaluation and selection	Preliminary and Detailed	Austria	National	ÖNORM S 2090: Sampling of soil gas	Norm for the sampling of soil gas regarding volatile and gaseous organic and inorganic matter. Requirements for sampling procedure, conservation and transport of the samples, as well as for sample preparation, analytical method and documentation. (purchase required)	<a href="#">German version</a>	-	-	★★★★★ Evaluations: 1 Inappropriate: 0 Total visits: 0
Waste management	Preliminary and Detailed	Austria	National	ÖNORM S 2091: Contaminated sites - Sampling of solids - Sampling of solids from waste deposits and industrial sites	Requirements for solid sampling (e.g. soil, subsoil) in connection with the investigation or remediation of contaminated sites. (purchase required)	<a href="#">German version</a>	-	-	★★★★★ Evaluations: 1 Inappropriate: 0 Total visits: 0
Strategic planning									
Building and infrastructure documents									
Deconstruction/re-use of structures materials									
Requalification plan development									
Implementation, control, monitoring (land back to market)									
Socio-economic assessment									
Funding and financing									
Decision-making and communication									

Figure 8. Functionalities for exploring the provided results: “Search by keyword” (blue circle) and “selection by Country of reference” (red circle).

The user can perform a search by keywords among the provided results. To this purpose, it is possible to type the word of interest in the box “Search into the database” and then click the button “Search” (see the blue circle in Figure 8).

Finally, if the user wants to extend his search to another information category, besides the already selected information categories, he can click on the category of interest from the list on the left side. At this point, a pop up asking if the “search aim” has been changed is visualised (see Figure 9).

If the user selects “No”, the web links included in the new information category are visualised; if he wants to include these results into the previous list, he has to click on the “All” button (at the top of the categories).

If, the user selects “Yes” in the pop up, the system redirects the user to the “Search aim” web page, where he can indicate the new search aim (see Figure 3).



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search into the database **Search**

Links Control Panel **Insert new item**

Country of reference: **All**

**Start new search** **All** **Regulation** Technical manuals Tools Case Studies

**Category: Deconstruction/re-use of structures materials**

Subcategory	Country of reference	Application scale	Title of the document (english)	Description of the document (english)	Original language link	English version link	Other languages link	Rating
Investigation (preliminary/detailed)								
Risk assessment (qualitative/quantitative)	None	Italy	National	Legislative Decree nr. 152 of 3rd of April 2006.	Italian version			★★★★★ Evaluations: 1 Inappropriate: 1 Total visits: 1
Remediation strategies and options	None	Germany	National	Act against Harmful Change and on Rehabilitation of Co Sites (Federal Soil Protection BBodSchG) of 17 March 1990, Version of 24 February 2012	German version	English version		★★★★★ Evaluations: 2 Inappropriate: 1 Total visits: 3
Remediation technologies evaluation and selection	None	Italy	National	Ministerial Decree nr. 161 of August 2012.	Italian version			★★★★★ Evaluations: 1 Inappropriate: 0 Total visits: 0
Waste management	None	Germany	National	Act on the Order of the Waste (WHG) of 31 July 2009, Last version of 24 February 2012	German version			★★★★★ Evaluations: 2 Inappropriate: 0 Total visits: 1
Strategic planning	None	Germany	European	European List of Wastes Ordinance of 10. 12.2001 (AVV)	German version			★★★★★ Evaluations: 1 Inappropriate: 0 Total visits: 1
Building and infrastructure documents	None	Germany	National	Waste Oil Ordinance of 27.10.1987 (AltöIV)	German version			★★★★★ Evaluations: 2 Inappropriate: 1 Total visits: 2
Deconstruction/re-use of structures materials	None	Poland	National	The construction Law of 7 th of July 1994	Polish version			★★★★★ Evaluations: 1 Inappropriate: 0 Total visits: 1
Requalification plan development	None	Poland	National	Act on waste	Polish version			★★★★★ Evaluations: 1 Inappropriate: 0 Total visits: 1
Implementation, control, monitoring (land back to market)	None	Poland	National	Regulation on the levels of recycling, preparation for re-use and recovery in other methods of some fraction of municipal waste	Polish version			★★★★★ Evaluations: 1 Inappropriate: 0 Total visits: 1
Socio-economic assessment	None	Switzerland	National	Technical Ordinance of Waste	German version	French version		★★★★★ Evaluations: 2 Inappropriate: 0 Total visits: 1
Funding and financing	None	Czech Republic	National	Act No. 157/1998 Sb., on chemical matters and chemical formulations.	Czech version			★★★★★ Evaluations: 1 Inappropriate: 0 Total visits: 2
Decision-making and communication	None	Italy	Regional	Operative procedures defining how to use soil and rocks obtained from excavation activities.	Italian version			★★★★★ Evaluations: 1 Inappropriate: 0 Total visits: 1

**Start new search?**  
 Do you want to change your search aims?  
 Yes No No, do not ask again

Figure 9. "Start new search?" pop up.

## 4 Evaluation of information

After selecting a specific web link, a window for the evaluation of the document related to this link appears (Figure 10). The evaluation provided by the user will be saved into the system and appropriately elaborated to support the ranking of the results of future search sessions .

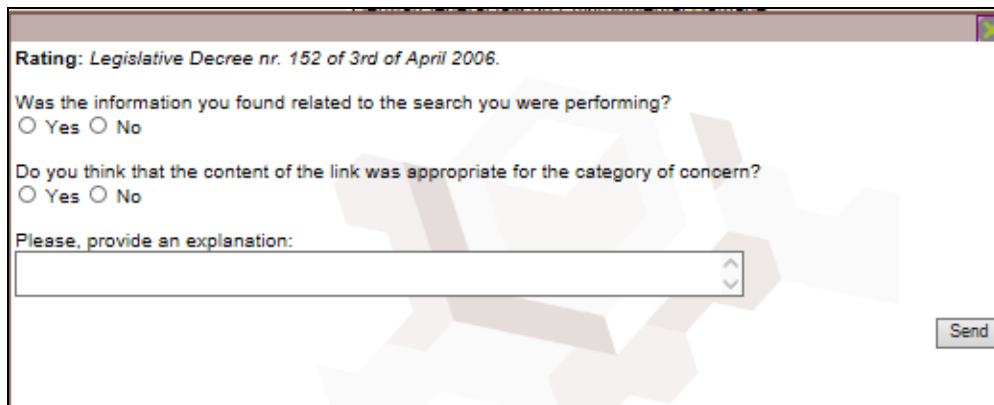
The screenshot shows a web-based evaluation form. At the top, it displays 'Rating: Legislative Decree nr. 152 of 3rd of April 2006.' Below this, there are two questions. The first question is 'Was the information you found related to the search you were performing?' with radio buttons for 'Yes' and 'No'. The second question is 'Do you think that the content of the link was appropriate for the category of concern?' also with radio buttons for 'Yes' and 'No'. Below the questions is a text input field with the placeholder text 'Please, provide an explanation:'. To the right of the input field is a 'Send' button. The background of the form has a faint watermark of a gear.

Figure 10. Information System window for the evaluation of the information.

The first two questions asked to users are the following ones:

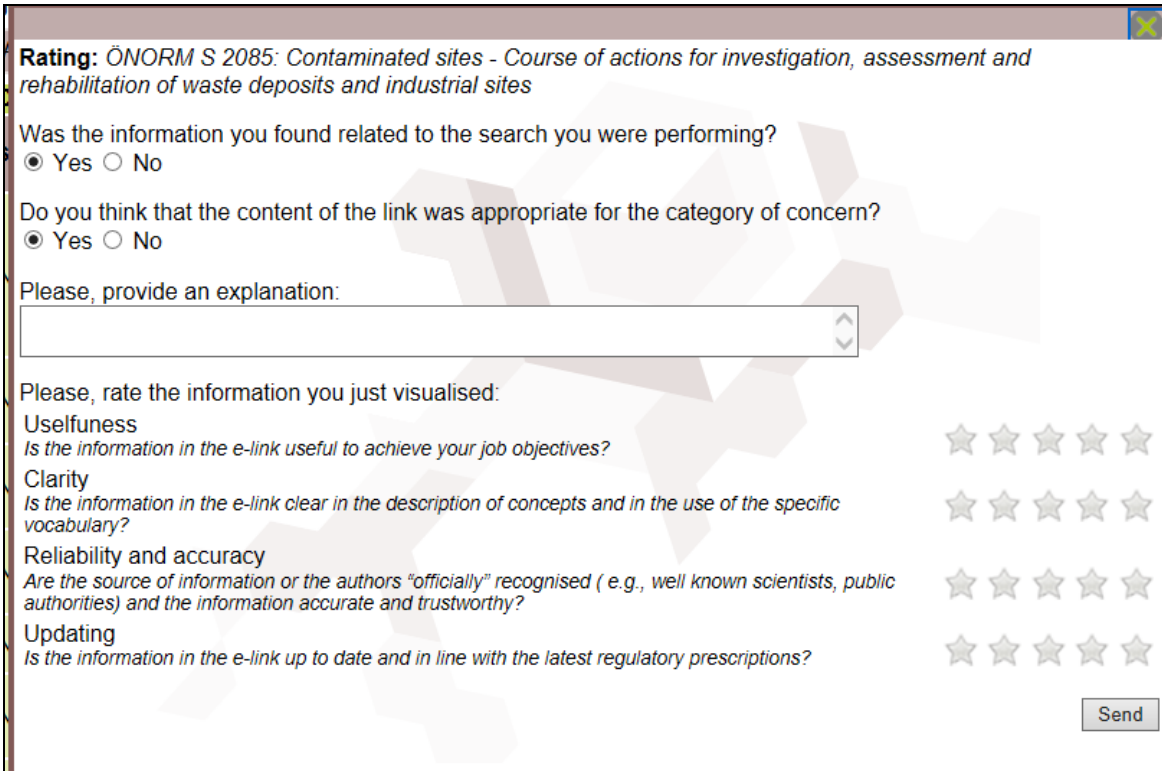
- *Was the information you found related to the search you were performing?*
- *Do you think that the content of the link was appropriate for the category of concern?*

If the user answers “No” to the second question, a notification will be associated to the web-link underling that the web-link has been evaluated as inappropriate (See Fig. 7).

If users answer “Yes” to both of the question, the system asks the user to evaluate the information according to the following criteria (see Box 1 for definitions):

- Usefulness;
- Clarity;
- Reliability and accuracy”;
- Updating.

For each criteria, the user can indicate a score from 1 to 5 (by selecting the stars), where 1 is associated to the worst evaluation and 5 to the best evaluation.



**Rating:** *ÖNORM S 2085: Contaminated sites - Course of actions for investigation, assessment and rehabilitation of waste deposits and industrial sites*

Was the information you found related to the search you were performing?  
☒ Yes ☐ No

Do you think that the content of the link was appropriate for the category of concern?  
☒ Yes ☐ No

Please, provide an explanation:

Please, rate the information you just visualised:

<b>Usefulness</b> <i>Is the information in the e-link useful to achieve your job objectives?</i>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
<b>Clarity</b> <i>Is the information in the e-link clear in the description of concepts and in the use of the specific vocabulary?</i>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
<b>Reliability and accuracy</b> <i>Are the source of information or the authors "officially" recognised ( e.g., well known scientists, public authorities) and the information accurate and trustworthy?</i>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
<b>Updating</b> <i>Is the information in the e-link up to date and in line with the latest regulatory prescriptions?</i>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>

Figure 11. Information System window for the evaluation of information (in the figure, an example of evaluation of a regulation).

## 5 Add new information

A registered user can upload his own web links with related information into the Information System, categorising them according to the information categories and documents types available in the tool. To this end, the button “Insert new item” can be used (Figure 12).

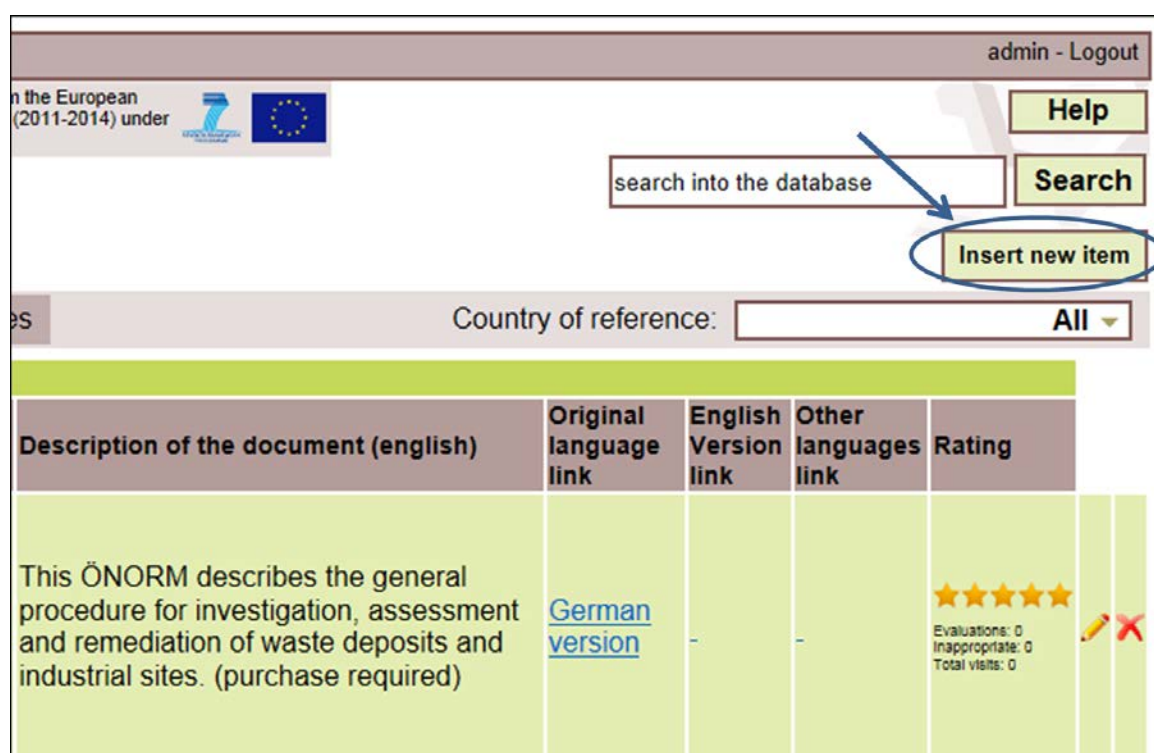


Figure 12. Functionality to add new information.

By clicking on the button “Insert new item”, a window for including new information is popping-up, as displayed in Figure 13. This Information System functionality allows the user to include new web links as well as to provide an evaluation of the provided document/information.

At this stage, the evaluation is based on three of the four criteria already mentioned in Paragraph 4 (specifically: “Clarity”, “Reliability and accuracy” and “Updating”). The “Usefulness” criteria is not considered at this point, because only a general evaluation of the provided information is required, which is not related to a specific “search aim”.

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The screenshot shows the 'timbre information system' web interface. At the top, there is a navigation bar with 'Timbre > explore > All - Regulation' and a user status 'admin - Logout'. A banner at the top right mentions funding from the European Community's Seventh Framework Programme (2011-2014) under grant agreement no. 265364, accompanied by the European Union flag. Below the banner, the system name 'timbre information system' is displayed, along with the URL 'the timbre project: http://www.timbre-project.eu/'. A search bar with the placeholder 'search into the database' and a 'Search' button is present. To the right of the search bar are buttons for 'Links Control Panel' and 'Insert new item'. The main form area is titled 'Select the category of information to be updated:' and contains several dropdown menus: 'Strategic planning' (selected), 'Regulation' (selected), 'Sub-category: None', 'Country of reference: Austria', and 'Application scale: European'. Below these are text input fields for 'Title in English:', 'Description with key words in English:', 'Original version language: Bulgarian', 'Original version link:', 'English version link:', and 'Other version link:'. At the bottom of the form, there is an 'Evaluation of the provided information' section with three criteria: 'Clarity' (Is the information in the e-link clear in the description of concepts and in the use of the specific vocabulary?), 'Reliability and accuracy' (Are the source of information or the authors "officially" recognised (e.g., well known scientists, public authorities) and the information accurate and trustworthy?), and 'Updating' (Is the information in the e-link up to date and in line with the latest regulatory prescriptions?). Each criterion has a five-star rating system. At the bottom right of the form are 'Cancel' and 'Insert' buttons.

Figure 13. Window for entering new information within the Information System.

Figure 13 shows the information that the user is asked to include for each of the document/item he wants to add to the web database:

- category of information;
- typology of information;
- sub-category of information (available only for some categories: for “Investigation” it is possible to select “Preliminary”, “Detailed” or “Preliminary and Detailed”; for “Risk assessment” it is possible to select “Qualitative”, “Quantitative” or “Qualitative and Quantitative”);
- Country of reference;
- application scale (the following options can be selected: “European”, “National”, “Regional”, “Local” or “Not applicable” according to the applicability of the information/documents/regulations/tools to different contexts);
- title in English;
- description with key words in English;
- language of the original version of the document;
- link to the original version;
- link to the English version (if present);
- link to other version(s) (if present).



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For some fields (e.g., Country of reference), a list of alternatives is available through a drop-down menu. For other fields (e.g., description with key word in English), users can type the required information in the windows (Figure 14).

Once all fields have been filled in and the evaluation is completed, it is necessary to click “Insert” in order to complete the procedure and upload the information in the Information System (Figure 14).

The screenshot shows the 'timbre information system' web interface. At the top, there is a header with the project name, a funding notice from the European Community's Seventh Framework Programme, and a user login area (admin - Logout). Below the header, there is a search bar and buttons for 'Help', 'Search', 'Links Control Panel', and 'Insert new item'. The main form area is titled 'Select the category of information to be updated:' and contains several fields: 'Strategic planning' (dropdown), 'Regulation' (dropdown), 'Sub-category' (dropdown with 'None' selected), 'Country of reference' (dropdown with 'Austria' selected), 'Application scale' (dropdown with 'European' selected), 'Title in English' (text input), 'Description with key words in English' (text input), 'Original version language' (dropdown with 'Bulgarian' selected), 'Original version link' (text input), 'English version link' (text input), and 'Other version link' (text input). There are also two 'Type' labels next to the description and original version link fields. Below the form, there is an 'Evaluation of the provided information' section with three criteria: 'Clarity' (5 stars), 'Reliability and accuracy' (5 stars), and 'Updating' (5 stars). At the bottom right, there are 'Cancel' and 'Insert' buttons, with the 'Insert' button highlighted by a green circle and an arrow.

Figure 14. Window for entering and evaluating new information within the Information System with the different input options.

If the internet link is referred to a tool/technology within the category of information “Remediation strategies and options”, it is necessary to add “Additional information” in order to provide to end-users with more specific and detailed technical information on that particular remediation tool/technology. In Figure 15, the set of additional data required by the Information System is displayed. Also in this case, at the end of the process it is necessary to evaluate the information and to click “Insert” in order to complete the procedure and upload the information in the tool.

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<b>Additional Information</b>	
Technology name:	<input type="text"/>
Technology type:	<input type="checkbox"/> In situ <input type="checkbox"/> Ex situ <input type="checkbox"/> Ex situ – On site <input type="checkbox"/> Ex situ – Off site
Environmental medium	<input type="checkbox"/> Soil <input type="checkbox"/> Sediments <input type="checkbox"/> Groundwater
<b>Target contaminants and performance (%)</b>	
NHVOC Nonhalogenated volatile organic compounds:	<input type="text"/>
HVOC Halogenated volatile organic compounds:	<input type="text"/>
NHSVOC Nonhalogenated semivolatile organic compounds:	<input type="text"/>
HSVOC Halogenated semivolatile organic compounds:	<input type="text"/>
Inorganics (e.g. cyanide, sulfur, asbestos):	<input type="text"/>
Metals / metalloids (e.g. Copper 25%, Iron 40%, etc.):	<input type="text"/>
Fuels:	<input type="text"/>
Radionuclides:	<input type="text"/>
Explosives:	<input type="text"/>
<b>Technology applicability conditions</b>	
Annual average temperature (°C):	<input type="text"/>
Remediation technology time scale:	<input type="text"/> Weeks <input type="button" value="v"/>
Max achievable soil depth (m):	<input type="text"/>
Nature of soil:	<input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt <input type="checkbox"/> Clay
Range of suitable organic carbon (e.g. 10 – 30 %; < 30%; > 10 %):	<input type="text"/>
Costs:	<input type="text"/> €/m3 <input type="button" value="v"/>

Figure 15. Additional information required for inserting documents related to a tool/technology in the category of information “Remediation strategies and options”.

## 6 Modify or delete information

If users need to modify some details referred to the internet links already inserted into the Information System, it is possible to use the icon “pencil” on the right side of the record line (Figure 16).

If, instead, it is necessary to delete an internet link with the associated information, it possible to click on the “red cross” on the right side to erase the link from the system.

The revision and removal of information collected in the Information System can be performed by the user who uploaded the information, by the administrator of the system, as well as by some users identified as “Expert users” (see Paragraph 8).

The screenshot shows the 'timbre information system' interface. At the top, there is a 'Modify information' button with a pencil icon. Below the header, there is a search bar and a 'Search' button. The main content area displays a table of records under the 'Regulation' category. The table has columns for Subcategory, Country of reference, Application scale, Title of the document (english), Description of the document (english), Original language link, English Version link, Other languages link, and Rating. Each record has a 'pencil' icon for modification and a 'red cross' icon for deletion. A red arrow points to the 'Delete e-link' icon.

Subcategory	Country of reference	Application scale	Title of the document (english)	Description of the document (english)	Original language link	English Version link	Other languages link	Rating	Modify	Delete
Strategic planning	None	Austria	National	ONORM S 2005 Contaminated sites - Course of actions for investigation, assessment and rehabilitation of waste deposits and industrial sites	This ONORM describes the general procedure for investigation, assessment and remediation of waste deposits and industrial sites. (purchase required)	German version		★★★★★ Evaluations: 0 Proposals: 0 Total votes: 0		
Risk assessment (qualitative/quantitative)	None	Germany	National	Federal Act on Environmental Impact Assessment of 12.02.1990 (UVPG)	Act for Environmental Impact Assessment, contains general regulations, steps for Environmental Impact Assessment and strategic Environmental Impact Assessment	German version		★★★★★ Evaluations: 0 Proposals: 0 Total votes: 0		
Waste management	None	Germany	National	Federal Spatial Planning Act of 22.12.2008 (ROG)	German federal law for Spatial Planning, cross-section for urban planning and conservation	German version		★★★★★ Evaluations: 0 Proposals: 0 Total votes: 0		

Figure 16. Icons to modify and delete information.

## 7 Password recovery and modification

In the log-in window, a functionality for the recovery of the forgotten password is included (see red circle in Figure 17).

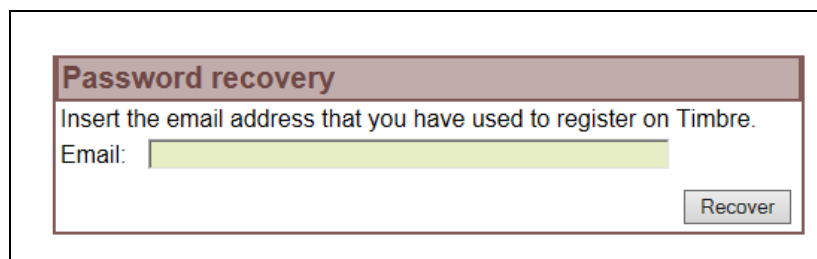




The image shows a login form titled "Login". It contains two input fields: "Email:" and "Password:". Below the "Password:" field, there is a blue hyperlink labeled "Forgot password?" which is circled in red. To the right of the "Forgot password?" link is a "Login" button. Below the "Forgot password?" link and the "Login" button, there is a "New user?" label and a "Register" button.

Figure 17. Link for the password recovery.

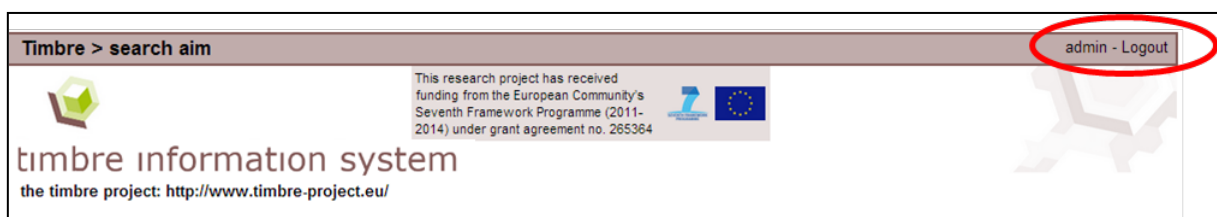
Clicking on the “Forgot password” link, a window for the insertion of the e-mail address for the password recovery will be displayed, as reported in Figure 18.



The image shows a form titled "Password recovery". It contains a text input field labeled "Email:" with a light green background. Below the input field is a "Recover" button.

Figure 18. Password recovery.

The “Recover” button in Figure 18 will send an e-mail with a temporary password. The temporary password need to be changed as soon as possible. The functionality to change the password can be found clicking on the user-related link which is present on the upper right side of each Information System window (see red circle in Figure 19).



The image shows the top header of the Timbre Information System. It includes a navigation bar with "Timbre > search aim" on the left and "admin - Logout" on the right, which is circled in red. Below the navigation bar is a logo for "timbre information system" and a text box stating: "This research project has received funding from the European Community's Seventh Framework Programme (2011-2014) under grant agreement no. 265364".

Figure 19. User related link to be clicked to change the password and user-related information.

Clicking on the user-related link reported in Figure 19 (i.e., the “admin” link), the user profile will be displayed as reported in Figure 20.

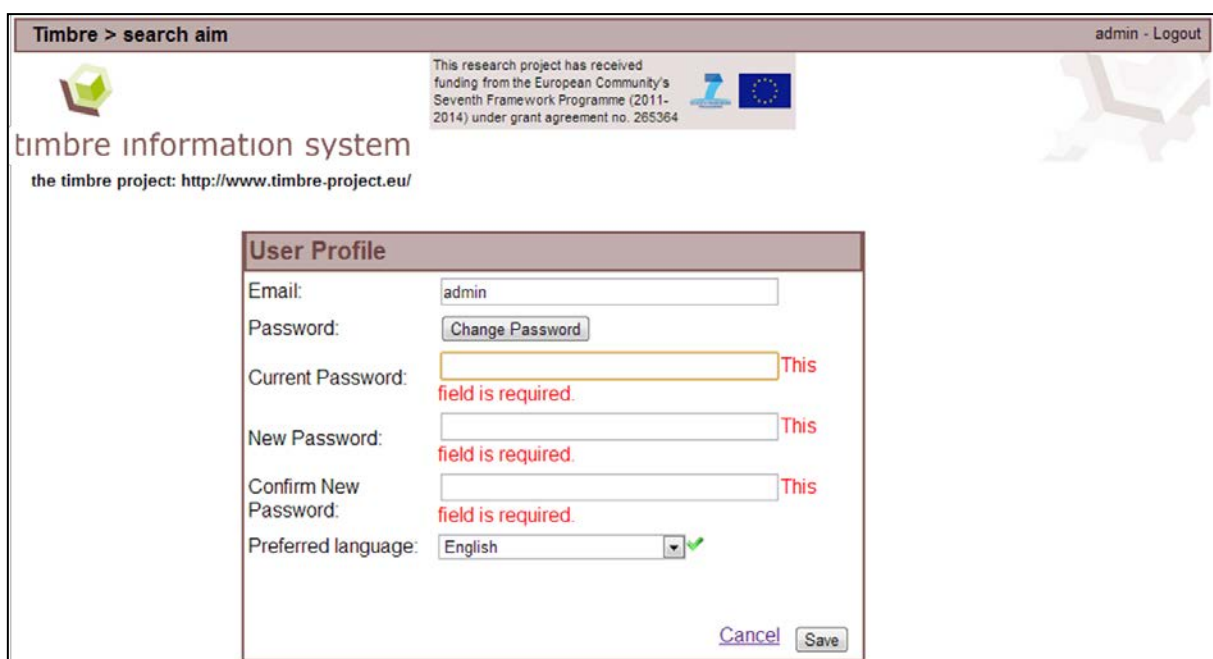


The screenshot shows the 'User Profile' window in the Timbre Information System. The window has a title bar 'Timbre > search aim' and a user/logout indicator 'admin - Logout'. The main content area includes the Timbre logo, the text 'timbre information system', and the URL 'the timbre project: http://www.timbre-project.eu/'. A banner at the top right states: 'This research project has received funding from the European Community's Seventh Framework Programme (2011-2014) under grant agreement no. 265364'. The 'User Profile' form contains the following fields and controls:

- Email:
- Password:
- Preferred language:  (dropdown menu)
- Buttons:  and

Figure 20. User profile.

Clicking on the “Change Password” button reported in Figure 20, the window for the password change will be displayed as reported in Figure 21.



The screenshot shows the 'Change Password' window in the Timbre Information System. The window has a title bar 'Timbre > search aim' and a user/logout indicator 'admin - Logout'. The main content area includes the Timbre logo, the text 'timbre information system', and the URL 'the timbre project: http://www.timbre-project.eu/'. A banner at the top right states: 'This research project has received funding from the European Community's Seventh Framework Programme (2011-2014) under grant agreement no. 265364'. The 'User Profile' form contains the following fields and controls:

- Email:
- Password:
- Current Password:  This field is required.
- New Password:  This field is required.
- Confirm New Password:  This field is required.
- Preferred language:  (dropdown menu) with a green checkmark icon.
- Buttons:  and

Figure 21. Change password window.

## 8 Expert users

Users can delete or modify only the information they have uploaded in the system, while the administrator can delete or modify any information collected in the system. However, in the perspective of developing an Information System which will be a “living” system relying on

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the active participation of an international network of experts and stakeholders, the intention is to reduce as much as possible the need for intervention by the system administrator. To this end a different typology of users has been created, called “Expert users” category. Expert users have system rights to modify and delete not updated information and web links. There are two stages where a user becomes aware that he/she can become an expert user:

1. In the “Email Validation” page, where he/she can visualise the question: “Would you like to become an Expert User?” (Fig. 22):

### Email Validation


The email **example.user@mail.it** has been validated.  
[Log in](#) with your credentials to use the Information System.

**Would you like to become Expert User?**  
If yes, please click [here](#).

**Expert User definition:**  
Expert Users will have system rights to modify and delete not updated information and web links. Users who wish to modify old or inappropriate information can ask to become Expert Users by providing information about their competences in the field and explaining why they require to become Expert User. The administrator of the system will evaluate the requests.

Figure 22. “Email Validation” page.

2. When he/she tries to modify or delete a web link. Indeed, if the user clicks on the pencil or on the red cross a pop-up is immediately displayed (Fig. 23).


**timbre information system**  
the timbre project: <http://www.timbre-project.eu/>

Start new search

All Regulation T

Category: Investigation	Subcategory	Country reference
Investigation (preliminary/detailed)	Preliminary and Detailed	Italy
Risk assessment (qualitative/quantitative)	Preliminary and Detailed	Germany
Remediation strategies and options	Preliminary and Detailed	Germany
Remediation technologies: evaluation and selection	Preliminary and Detailed	Germany
Waste management	Preliminary and Detailed	Germany
Strategic planning	Preliminary and Detailed	Italy
Building and infrastructure documents	Preliminary and Detailed	Italy
Deconstruction/re-use of structures materials	Preliminary and Detailed	Italy
Requalification plan development	Preliminary and Detailed	Italy
Implementation, control, monitoring (land back to market)	Preliminary and Detailed	Austria
Socio-economic assessment	Preliminary and Detailed	Austria
Funding and financing	Preliminary and Detailed	Austria
Decision-making and	Preliminary and Detailed	Austria

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Help

search into the database

Search

Links Control Panel

Insert new item

Country of reference:

All

Document	Original language link	English version link	Other languages link	Rating
Decision on...	<a href="#">Italian version</a>	-	-	★★★★★ Evaluations: 1 Inappropriate: 0 Total visits: 1
soil...	<a href="#">German version</a>	<a href="#">English version</a>	-	★★★★★ Evaluations: 1 Inappropriate: 1 Total visits: 1
protection definition	<a href="#">Italian version</a>	-	-	★★★★★ Evaluations: 1 Inappropriate: 0 Total visits: 2
background concentrations in groundwater.	-	-	-	★★★★★ Evaluations: 1 Inappropriate: 0 Total visits: 1
Legal basis for the registration of contaminated sites and the funding for their containment / remediation. Regulates the definition of terms, the contribution to the Fund for Contaminated Sites, the standard procedures for the registration and assessment of suspected contaminated sites, the basic conditions for clean-up	<a href="#">German version</a>	-	-	★★★★★ Evaluations: 1 Inappropriate: 0 Total visits: 1

Expert User credentials required

You are not allowed to modify/delete the web link.  
If you need to modify/delete the web link, first you must be authorised by the IS administrator and get specific credentials. If you want these credentials please submit a request!

Cancel

Submit Request

Figure 23. Pop-up notifying that Expert User credentials are required to modify or delete information collected in the system.

Clicking on the button “Submit Request” of the pop up, the user is redirected to the page where he/she can ask to the Information System administrator to become an expert user after providing information about his/her competences in the field of brownfield regeneration and explaining why he/she requires to become an expert user, as showed in Fig. 24.

The list of the required mandatory data includes:

- 1) Name and Surname:
- 2) Organisation you work for:
- 3) Position in the organisation you work for:
- 4) Field of activity:
- 5) Years of experience:
- 6) Reasons why you want to become a TIMBRE Information System expert user:



**Expert User Request**

Name and Surname:

Organisation you work for:

Position in the organisation you work for:

Field of activity:

Years of experience:

Reasons why you want to become a TIMBRE Information System Expert User:

[Cancel](#)

Figure 24. Window where the user can apply to become an expert user.

After filling in all the required information, the user can click on a button “Submit” to complete the procedure.

Then an e-mail with the user’s request will automatically be sent to the Information System Administrator mail box. The Administrator will evaluate the user’s request and send a feedback to user by e-mail.

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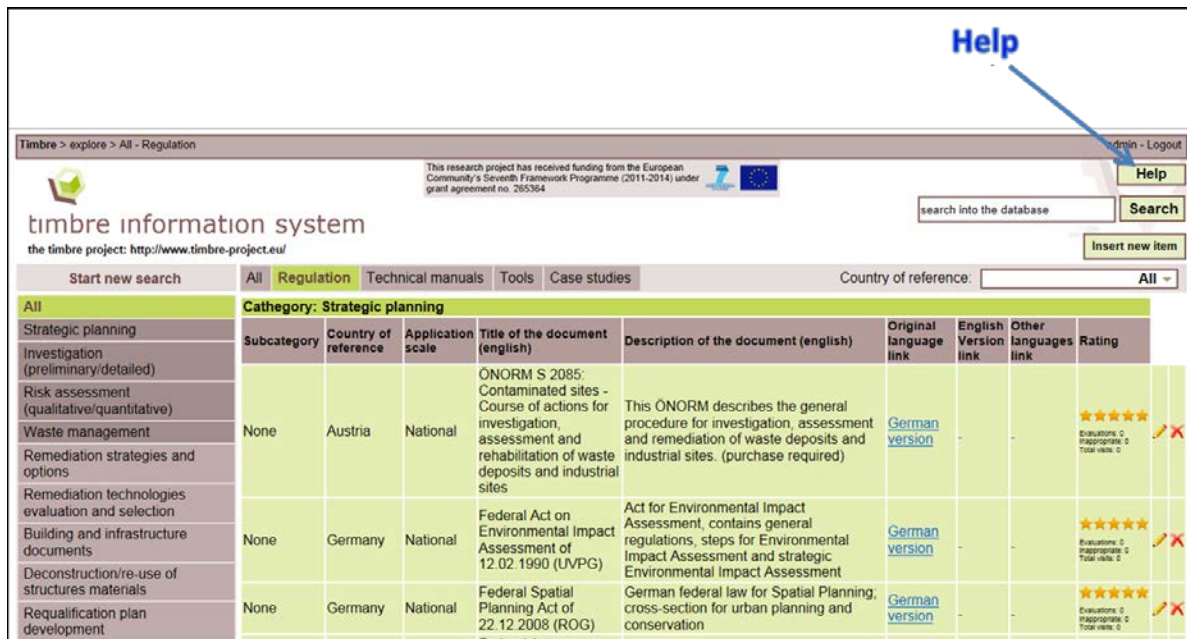
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## 9 Help

If users need information about how to consult the Information System and how to upload new data, they can click on the button „Help” in the top corner of the screen (Figure 25). By clicking on this button, the present „User Manual” will be downloaded as a pdf file.



The screenshot shows the 'timbre information system' interface. At the top right, there is a 'Help' button with a blue arrow pointing to it. Below the header, there is a navigation bar with tabs: 'All', 'Regulation', 'Technical manuals', 'Tools', and 'Case studies'. The 'Regulation' tab is selected. Below the navigation bar, there is a table with columns: 'Subcategory', 'Country of reference', 'Application scale', 'Title of the document (english)', 'Description of the document (english)', 'Original language link', 'English Version link', 'Other languages link', and 'Rating'. The table contains three rows of data. The first row is for 'Strategic planning' with a rating of 5 stars. The second row is for 'Investigation (preliminary/detailed)' with a rating of 5 stars. The third row is for 'Risk assessment (qualitative/quantitative)' with a rating of 5 stars. The table also includes a 'Country of reference' dropdown menu set to 'All'.

Subcategory	Country of reference	Application scale	Title of the document (english)	Description of the document (english)	Original language link	English Version link	Other languages link	Rating
Strategic planning	None	Austria	National	ONORM S 2085: Contaminated sites - Course of actions for investigation, assessment and rehabilitation of waste deposits and industrial sites.	<a href="#">German version</a>			★★★★★ Evaluations: 0 Inappropriate: 0 Total votes: 0
Investigation (preliminary/detailed)	None	Germany	National	Federal Act on Environmental Impact Assessment of 12.02.1990 (UVPG)	<a href="#">German version</a>			★★★★★ Evaluations: 0 Inappropriate: 0 Total votes: 0
Risk assessment (qualitative/quantitative)	None	Germany	National	Federal Spatial Planning Act of 22.12.2008 (ROG)	<a href="#">German version</a>			★★★★★ Evaluations: 0 Inappropriate: 0 Total votes: 0

Figure 25. “Help” button.

## 10 Log out

For security reasons, when the user decides to leave the Information System, he has to click on the “Logout” button on the top right corner of the screen (on the brown bar) (Figure 26).



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**Logout**

Timbre > explore > All - Regulation admin - Logout

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**timbre information system**  
the timbre project: <http://www.timbre-project.eu/>

search into the database Help

Search

Insert new item

Start new search All Regulation Technical manuals Tools Case studies Country of reference:  All

Category: Strategic planning									
	Subcategory	Country of reference	Application scale	Title of the document (english)	Description of the document (english)	Original language link	English Version link	Other languages link	Rating
Strategic planning									
Investigation (preliminary/detailed)									
Risk assessment (qualitative/quantitative)									
Waste management	None	Austria	National	ONORM S 2085: Contaminated sites - Course of actions for investigation, assessment and rehabilitation of waste deposits and industrial sites	This ONORM describes the general procedure for investigation, assessment and remediation of waste deposits and industrial sites. (purchase required)	<a href="#">German version</a>	-	-	★★★★★ Evaluations: 0 Inappropriate: 0 Total votes: 0
Remediation strategies and options									
Remediation technologies evaluation and selection									
Building and infrastructure documents	None	Germany	National	Federal Act on Environmental Impact Assessment of 12.02.1990 (UVPG)	Act for Environmental Impact Assessment, contains general regulations, steps for Environmental Impact Assessment and strategic Environmental Impact Assessment	<a href="#">German version</a>	-	-	★★★★★ Evaluations: 0 Inappropriate: 0 Total votes: 0
Deconstruction/re-use of structures materials									
Requalification plan development	None	Germany	National	Federal Spatial Planning Act of 22.12.2008 (ROG)	German federal law for Spatial Planning, cross-section for urban planning and conservation	<a href="#">German version</a>	-	-	★★★★★ Evaluations: 0 Inappropriate: 0 Total votes: 0

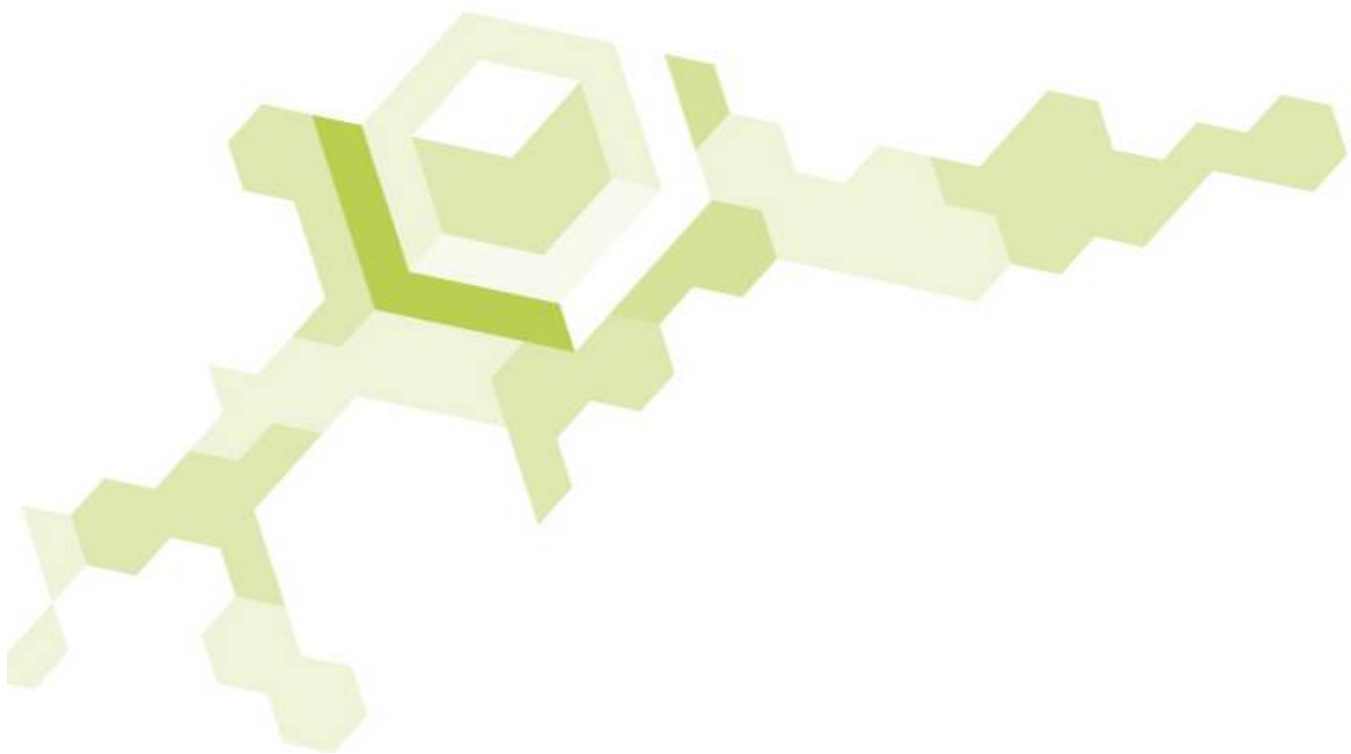
Figure 26. "Logout" button.

## Disclaimer

This document is aimed at assisting brownfield regeneration stakeholders. It is provided for information purposes only and its contents are not intended to replace consultation of any applicable legal sources or the necessary advice of a legal expert, where appropriate.

This document has been produced in the context of the Timbre Project. The research leading to these results has received funding from the European Community's Seventh Framework Programme (FP7 2011-2014) under grant agreement no 265364.

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