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Tailored Improvement of  
Brownfield Regeneration  
in Europe



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**This package contains information on the TIMBRE project funded by the European Union. The seven work packages included in the project are each described on a separate page. Each work package is, in turn, managed by a team of TIMBRE specialists, whose contact data can be found at the bottom of each page.**



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# Work Package 1: Expert system as information platform for innovative and widely applicable strategies, technologies and solutions

## 1. Objective of WP1

The main objective of WP1 is the development of an expert system for the collection, analysis and classification of available data and information on previous projects, programs, and other activities focused on the regeneration of brownfields. In order to support the information collection and analysis, a *framework* describing the main phases of the brownfield regeneration process has been developed. On the basis of the identified brownfield remediation process phases, the available methods, tools, strategies, best practices, as well as technologies, expressly developed for brownfield rehabilitation will be collected and classified. The information analysis and classification will be performed by means of suitable criteria in order to generate a ranking which will identify the most suitable and useful information according to the point of view of the timbre case-studies stakeholders.

## 2. Expected output for the Hunedoara Workshop

The main expected output of the Hunedoara Workshop is to present the developed brownfield remediation framework to the local stakeholders in order to collect their opinions, comments, and suggestions on the consistency, completeness, and effectiveness of the proposed framework. Moreover, the instauration of a good relationship with the local stakeholders will facilitate the application of the WP1 expert system to the timbre case studies which is foreseen in a second stage of the project. The expert system application will involve the local stakeholders in the prioritization of the information collected in the expert system database.

## 3. Stakeholder involvement procedure

The Hunedoara stakeholders will be involved in two meetings, the first meeting in October 2011, and a second meeting in December 2011. On the basis of the results of the first meeting, WP1 partners will select, in collaboration with WP2, a sub-group of suitable stakeholders which will be asked to evaluate the proposed framework for brownfield regeneration. The stakeholders indications will be collected through the fulfillment of a brief questionnaire of about 5-6 questions which will be provided one month before the meeting of December 2011. The stakeholder answers will be collected and analyzed and the obtained results will be presented at the meeting in December 2011.

## 4. Stakeholder role

The role of the selected sub-group of local stakeholders is to provide their opinions, comments, and suggestions about the brownfield regeneration framework in order to achieve an agreed and useful framework that will be the basis of the TIMBRE expert system.

## 5. Contact person



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## Work Package 2: Decision structures and local culture: Investigation of administrative possibilities and site specific attitudes of stakeholders

### 1. Objective of WP2

The work of WP2 aims to gain a better understanding of the perceived usefulness and acceptance of different types of revitalisation tools for brownfield regeneration. This involves gaining knowledge about culturally specific understandings of risk in brownfield revitalisation processes and specific administrative and legal frameworks. This knowledge set will form a basis for the tailoring of TIMBRE tools and methods to the context in which they will be applied as well as for the adaptation/implementation of technological development.

### 2. Expected output for the Hunedoara Workshop

Activities within this WP have two main outcomes, which will be beneficial for local, regional and national actors and for the neighbours of the ECO SID site. First, the organisation of this workshop (October 11<sup>th</sup> – 12<sup>th</sup>, 2011) will bring together local and national stakeholders with a diverse group of experts in brownfield regeneration to foster a dialogue regarding the most appropriate solutions for brownfield regeneration in Hunedoara. Subsequent meetings of the members of WP2 with Romanian stakeholders will continue and expand this dialogue through interviews and focus groups. Second, the data and analyses of the WP – which will also include the input of the local stakeholders – will be used by other work packages in the project (WP 1, 3, 6 and 7) to tailor tools and methods to the revitalisation of the ECO SID site.

### 3. Stakeholder involvement procedure

Local, regional and national actors will be involved by the workshop on 11<sup>th</sup> of October to learn about TIMBRE objectives and to voice their opinions and expectations with regard to it. Through in depth interviewing and focus group meetings, stakeholders will provide important information on local needs and on the social and economic context in which the TIMBRE project will take place. In some of the interviews, we will discuss with stakeholders about specific tools and methods for revitalisation, which will be applied in Hunedoara.

### 4. Stakeholder role

Stakeholders will be expected to actively participate in the workshop and in subsequent meetings. We encourage all stakeholders to ask questions about TIMBRE tools and methodologies, share experiences and information on brownfield regeneration in Hunedoara or at other sites and help in the process of tailoring TIMBRE technologies to the social, cultural and economic context of the ECO SID site.

### 5. Contact persons



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# Work Package 3: Success metrics and prioritisation tool

## 1. Objective of WP3

WP 3 has the following objectives:

- Success metrics: Identification and definition of major characteristics (framework of indicators) to determine successful and sustainable brownfield re-developments;
- Success factors: Identification of site parameters and factors (political-institutional, environmental, social, economic, communicative, etc.) governing a potential success;
- Prioritisation tool: Development of a web based prioritisation tool based on multi-criteria-decision-analysis (MCDA) techniques for classifying and ranking brownfields (according to environmental, economic, social, financial, health, and legal criteria) and proposing the related „best-practice“ strategies that stakeholders involved in brownfield regeneration may use to more easily manage and assess success in their projects.

## 2. Expected output for the Hunedoara Workshop

The outputs of WP3 will be tailored directly according to the requirements of local stakeholders associated with brownfield regeneration in Romania. Naturally, the workshop in Hunedoara is the first good opportunity to exchange information between researchers and stakeholders. Moreover, using the focus group interviews with local stakeholders we can specify the concrete forms in which the final product (the prioritization tool for different stakeholders involved in brownfields regeneration) should look like and should be operating in the future. The results could facilitate the regeneration process not only in Hunedoara but in the other brownfield sites both in Romania and in the other EU member countries.

## 3. Stakeholder involvement procedure

Hunedoara is the front running in a series of workshops in the other Timbre countries. Stakeholders concerned with the site in Hunedoara will show us how the local respondents associated with brownfield redevelopment perceive successful brownfield regeneration from their point of view. Moreover, we would like to know what their ideas are about the benefits the new research project can bring for them. And how the final product, the prioritization tool, should look like - to be useful for the purposes of the local stakeholders?

## 4. Stakeholder role

We hope for an active participation of local stakeholders in the general discussions during the workshop and in several subsequent interviews. Moreover, we would like to collect the information about the stakeholders' time availability and willingness to cooperate in the next stages of the Timbre project: Can we contact them to answer our questionnaires in the future? Also, we need to know about the language competencies: Are stakeholders able to communicate in English or is translation needed?

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# Work Package 4: Strategies and technologies for integrated site characterisation and remediation

## 1. Objective of WP4

In WP4, emerging strategies and technologies for effective site characterisation and remediation will be adapted, further developed and tested, addressing: (i) feasibility testing of phytoremediation and specific soil washing with recycled solutions (SSWRS), (ii) novel strategies for effective site characterisation and monitoring of subsurface contamination and remediation, (iii) evaluation of remedial options using site models, based on adaptive site characterisation.

Feasibility testing of phytoremediation will comprise laboratory studies on plant uptake and phytotoxicity of common soil and groundwater pollutants as well as mathematical modelling to quantify and simulate phytoremediation. Feasibility testing of SSWRS will include field (in situ and on-site) and laboratory experiments on process robustness, performance and suitable target compounds. Pollutant transfer by SSWRS will be assessed by mathematical modelling. Tree core sampling and direct push/shallow soil probing will be applied adaptively at selected sites and assisted by numerical modelling in order to test feasibility, limitations and effectiveness of these technologies for site characterisation.



Studies on potentials, costs and associated risks of in situ remediation techniques will point out which measures may, or may not, be successful and appropriate at a site. The evaluated set of methodologies will provide tools for integrated planning and assessment of regeneration options.

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# Work Package 5: Deconstruction and re-use of structures and materials

## 1. Objective of WP5

Within TIMBRE a standard technology implementation procedure for investors for the reuse of existing buildings or strategies for the environmentally friendly destruction of buildings will be developed under respect of the existing different national laws. Because the deconstruction and re-use of buildings and structures is not set down in an EU-wide law or directives, within TIMBRE a proposal shall be developed to standardise such procedures. The major tasks of WP5 are defined as follows:

- Status quo: EU-wide evaluation of methods, laws and regulations related to dealing with buildings and structures on brownfields e.g. decontamination, deconstruction, working safety, re-use or disposal of building materials and implementation of this information into an expert system.
- Cost and impact assessment: Development of an estimator to calculate the costs and environmental impact of re-use or deconstruction of existing buildings on a brownfield.
- Recycling: Development of cost and environmentally friendly strategies to recycle building rubble.
- Technical guidelines: Recommendations concerning minimization of emissions and improvement of working safety e.g. protection of workers against building contaminants.

## 2. Expected output for the Hunedoara Workshop

Especially for Hunedoara approaches should be developed, in a close cooperation with stakeholders, for:

- investigations on remaining structures and building rubble on the site, sampling and chemical analysis regarding possible contaminants (e.g. PAH, Asbestos);
- handling and sorting of the large amounts of rubble concerning its further utilisation (e.g. road construction, soil improvement) considering existing laws and regulations;
- enhancement of environmental protection and work safety.

The experience with the activities in Hunedoara will show approaches for tailoring re-use or deconstruction of buildings and further utilisation of building materials within brownfield projects to the specific requirements of stakeholders in Romania and EU-wide.

## 3. Contact persons



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# Work Package 6: Web based tool for integrated planning and assessment of revitalisation options for brownfields

## 1. Objective of WP6

- Providing support to the revitalisation of contaminated brownfields in the screening stage
- Exploration and clarification of possibilities with regard to future use of the site
- Development of a software tool to help and inform decision makers and stakeholders

## 2. Expected output for the ECO SID site in Hunedoara

- Integrated planning and assessment: analysis of possible redevelopment options taking into account
  - Risk assessment and prevention
  - Sustainability
  - Clean-up costs
  - Market value
  - Suitability for renewable energy production
- Information and Communication: potentials and consequences, benefits and costs of possible redevelopment options are highlighted in order to provide the basis for balanced decisions and acceptance among the stakeholders' different interests.

## 3. Stakeholder participation

- Integrated planning and assessment: Local stakeholders will be involved in defining the local goals of sustainability
- Site owner / responsible consultant need to provide all data relevant to the description of the site's current situation: type, level and spatial distribution of contamination in soil and groundwater, existing buildings and infrastructure, etc.
- Site owners, site developers, investors, municipalities will benefit from TIMBRE-results at ECO-SID Hunedoara, which will be provided via Internet in an easy-to-use and easy-to-understand format. Risk assessment and prevention

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# Work Package 7: Web platform, outreach, dissemination, and transition

## 1. Objective of WP7

WP7 will develop an end-user oriented web based internet information platform and specific training opportunities and events on [www.timbre-project.eu](http://www.timbre-project.eu).

The usage and implementation of environmental technologies for brownfield regeneration so far can be summarised as “good results, helpful tools but bad PR and integration of both social/cultural and technical aspects”. In general, this type of information is very difficult to access for regional/local actors from a technical point of view alone. TIMBRE thus will provide an unique information centre for brownfield development strategies including the description and a range of novel technologies and tools developed in the TIMBRE project.

In order to ensure a targeted dissemination of the TIMBRE outcomes, end-user specific training courses will be provided accompanied by appropriate publication formats that fulfil the requirements and demands of brownfield site owners, developers, regulators and other stakeholders involved in regeneration projects.

## 2. Expected output for the Hunedoara Workshop

The main goal of WP7 is to raise awareness and interest of experts and stakeholders both in general in Romania and in particular in Hunedoara for the activities of the TIMBRE project.

The project is intended to benefit a variety of stakeholders involved in or affected by the planning, assessment and management of a brownfield’s revitalisation. WP7 organises the workshop in Hunedoara together with WP2 to enable a mutually beneficial collaboration of the TIMBRE partners and all potentially interested experts and stakeholders in Romania.

## 3. Stakeholder involvement in the TIMBRE project

TIMBRE does highly appreciate local experts and stakeholders interest and involvement, commends and support in the further development, application and dissemination of approaches, tools and technologies for a more sustainable and efficient brownfield regeneration. There are lots of opportunities stakeholders can get involved with the TIMBRE project! Stakeholders are invited to find out more about:

- TIMBRE events and trainings – A series of workshop and dissemination events, which will be open for practitioners and researchers beyond the boundaries of TIMBRE. These events include training activities for practitioners and researchers at all levels.
- E-mail Alert – For updates on events and latest results sign the email alert on the website.
- Collaborations – Learn more about companies, projects and institutions that are collaborating with TIMBRE and their reasons for doing so on [www.timbre-project.eu](http://www.timbre-project.eu).
- Sharing experiences and opinions – Experts and stakeholders are invited to share their experiences and opinions regarding a brownfield regeneration.

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