Wooden Architecture. Traditional Karelian Timber Architecture and Landscape

Seventh Framework Programme

Marie Curie Actions People
International Research Staff Exchange Scheme
Annex I

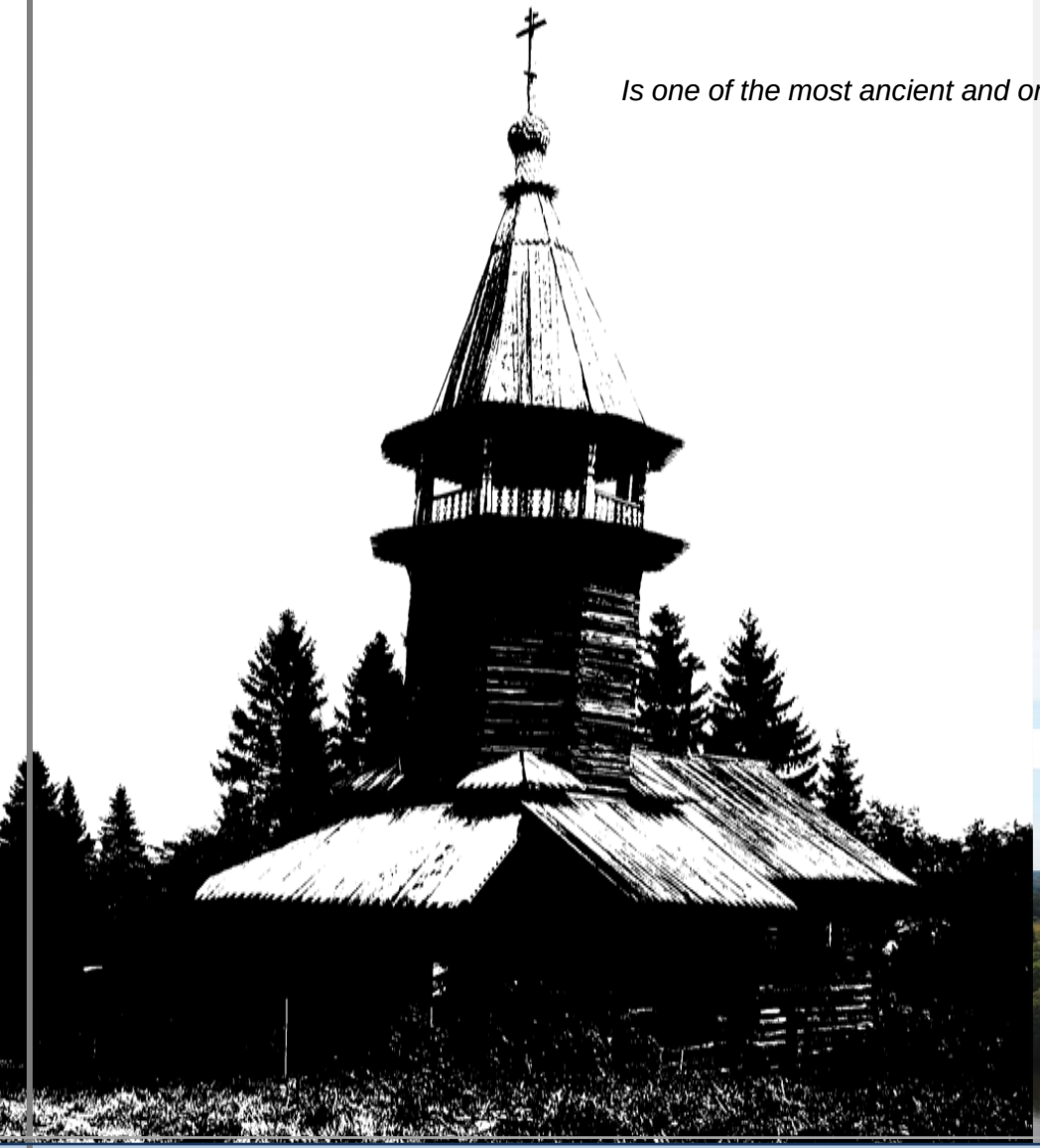
Acronym: Wooden Architecture
Proposal number:269185
Scientific Panel: ENV
Duration of the Project 36 months

Scientific Coordinator _ Prof. Arch. Sandro Parrinello

University of Pavia
University of Florence
Petrozavodsk State University
Univertsity of Oulu

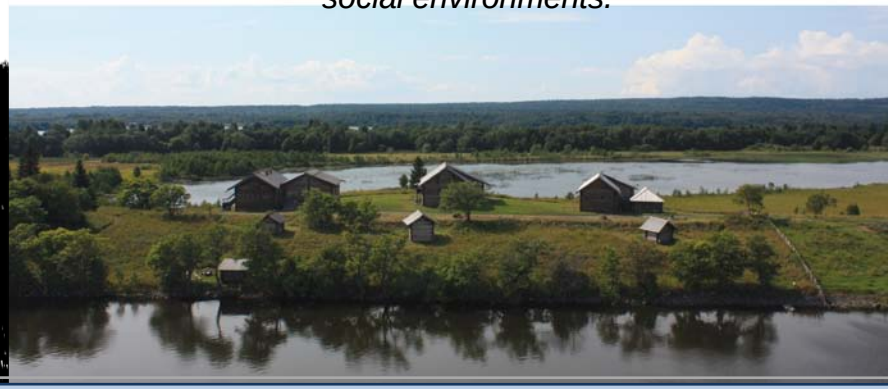
SEVENTH FRAMEWORK PROGRAMME

Project summary



Wooden Architecture
Is one of the most ancient and once widely spread revelations of the human construction activities.

The constructive forms and details of the National Wooden Architecture monuments reflect not only peculiarities and different aspects of the constructive systems realized in this material, but also ***the most ancient notion of cooperation between NATURE, SOCIETY*** *and* ***HUMAN BEINGS*** *in different cultural and social environments.*



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Wooden Architecture. Traditional Karelian Timber Architecture and Landscape

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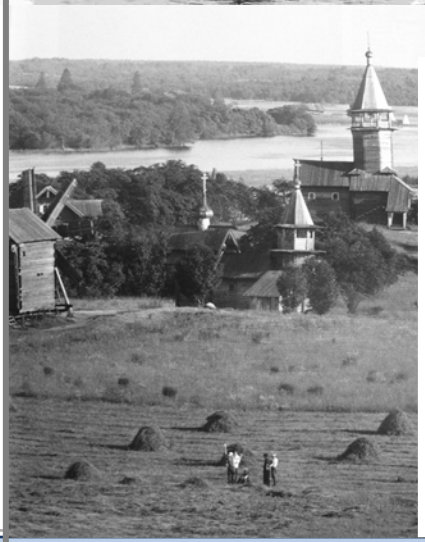
SEVENTH FRAMEWORK PROGRAMME

Project summary

*At the present moment, in some geographical areas, it is possible to notice a **fast degradation** and **abandonment of the rural environment**, which is the last stronghold of the leaving traditions of the wooden architecture and concentration point of the wooden architecture monuments.*

*The historical and cultural value of Karelia (which is the main place where the European Project will be developed) is determined by unique **combination of historical lay out** of old **VILLAGES** and **cities**, **NATURAL LANDSCAPES** and **numerous monuments** of **FOLK ARCHITECTURE, historical and ARCHEOLOGICAL SITES.***



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Wooden Architecture. Traditional Karelian Timber Architecture and Landscape

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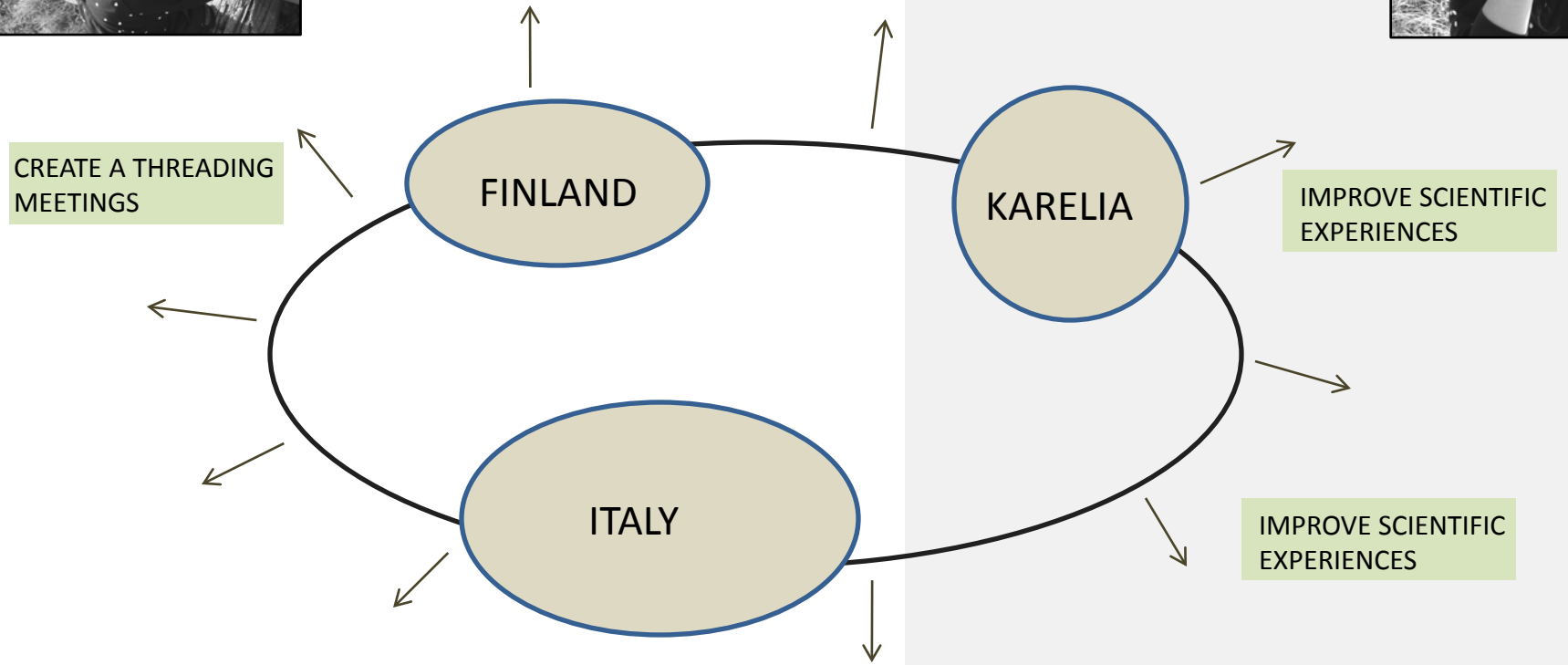
SEVENTH FRAMEWORK PROGRAMME

Project summary

Cooperation between Karelia and Europe *is carried out in the framework of International agreement and Concept of Social and Economic Development of the Republic of Karelia.*

Universities and institutions involved into the project will work together to ***IMPROVE*** *the* ***PROMOTION OF RESEARCH ACTIVITIES*** *launched in this country as a target.*



Project summary

SCIENTIFIC EXPERIENCES

ACTIVITIES OF RESEARCH

ANALYSIS

SPERIMENTATIONS

THEY WILL PRODUCED A KNOW-HOW WHICH IS HIGHLY VALUABLE AT THE PRESENT MOMENT

USING SPECIFIC APPLICATIONS OF THE NEW TECHNOLOGIES

- **monitoring**
- **Data-menagement for restorations**
- **Urban planning**
- **Menagement in sensitive areas like urban centres of historical and enviromental interest**

In particular the Karelian territory is configured as a dense area of elements which need a high attention in order to crease the value of the territory itself and its anthropic activities.

Project summary

Accurate surveying operations *constitute the fundamental basis for critical analysis of the formation and development of an architectural element, vilage, city or territory, as well as for the planning of interventions for the:*

- ***CONSERVATION***
- ***RESTORATION***
- ***EXPLOITATION*** *of an urbanized area*

Project summary

Survey of rural areas, the environment and nature in general is an operation based on:

- **COMPREHENSION**
- **KNOWLEDGE OF MEANINGS**
- **CRITICAL INTERPRETATION**
- **FIND THE SPECIFIC CHARACTER OF THE PLACE**

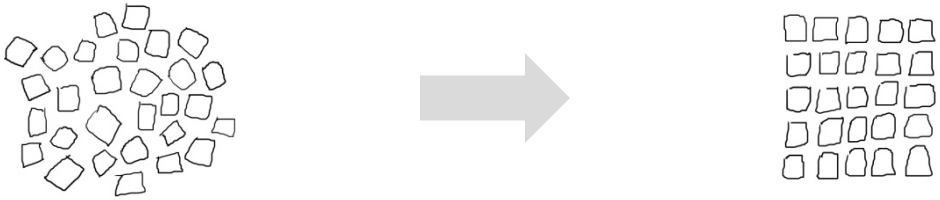
research into understanding the

GENIUS LOCI

-The quality of the space

-The specific character of the place

- The acquisition of the system requires a close CORRELATION BETWEEN:



From the first confused ideas to a precision consciousness of the place

- **INVESTIGATION**
- **COGNITIVE MOMENT**
- **RECOVERY PROGRAM**

Project summary

The **objective of a CENSUS** of the TRADITIONAL WOODEN ARCHITECTURE and NATURAL ENVIRONMENT and landscaping purposes is to determine:

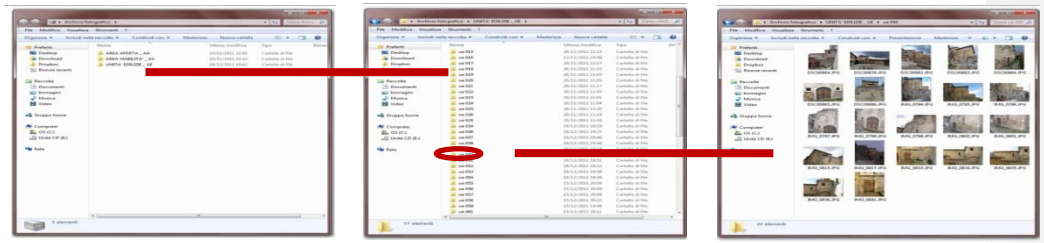
- SPECIES
- APPEARANCE
- ANALYSIS OF DAMAGES
- SOME MORE CONDITIONS THAT
- CAN IDENTIFYING CRITICAL
- MANAGEMENT FACTORS

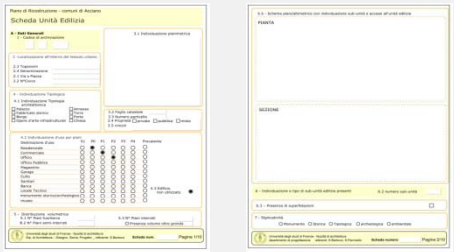
CENSUS

Defines the landscaping and enviromental aspects, as well as the diagnostic picture of each context on the basis of its intrinsic characteristics, possible untraditional elements, and finding the way to restablished the correct structure of the place. In this way we are able to identify and define the intervation priorities.

In this way we are

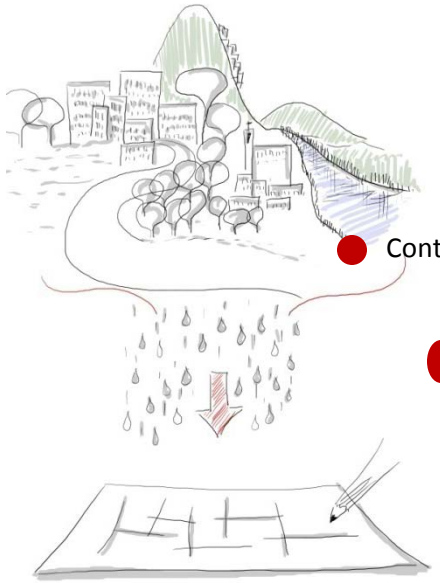
ABLE TO IDENTIFY AND DEFINE THE INTERVENTION PRIORITIES





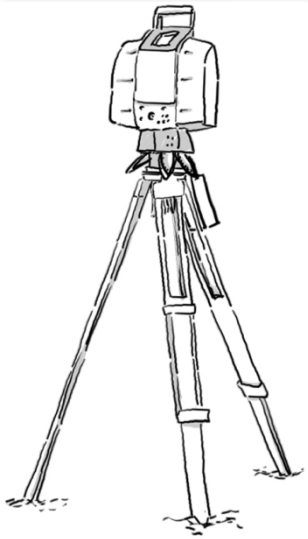
From the census to the digital organization of databases

Project summary



Innovative methods to survey and georeference data on architecture buildings allow us to **ACQUIRE EXACT KNOWLEDGE OF THE CURRENT STATUS OF LOCALITIES.**

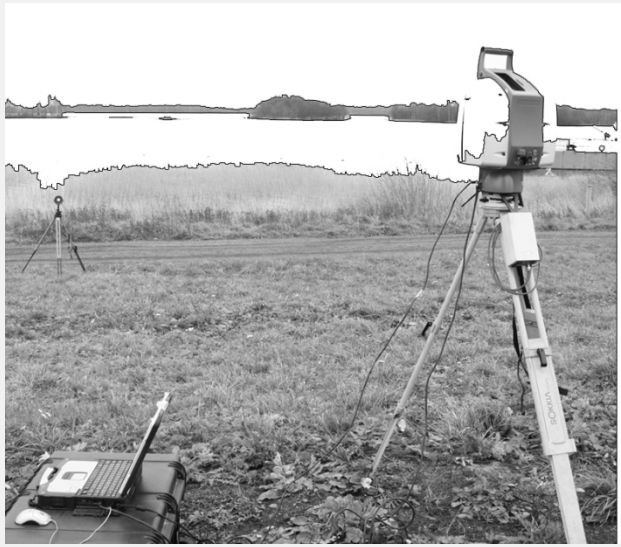
The specific diversity and heterogeneity of the local conditions in which buildings live result in very **complex managerial problems**.
For the programmed management of traditional site, it is advisable to insert the entire system, including interventions, in an organic plan that explicitly **considers aspects related to the monumentality and landscaping importance of each house**, that generally have both landscaping and soil protection functions.



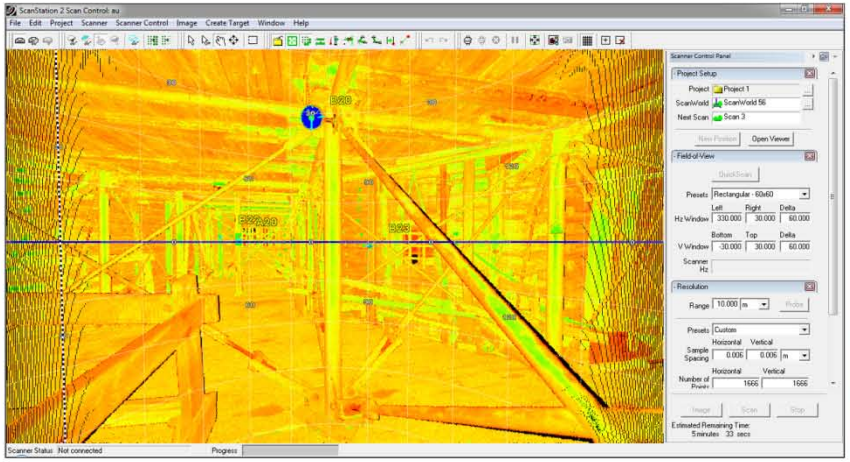
Research on the comprehension of phenomena involves the use of:

G.I.S.

Systems to manage the relevant databases. They use a multiple georeferenced accesses and the creation of integrated systems for menagement of the census data.



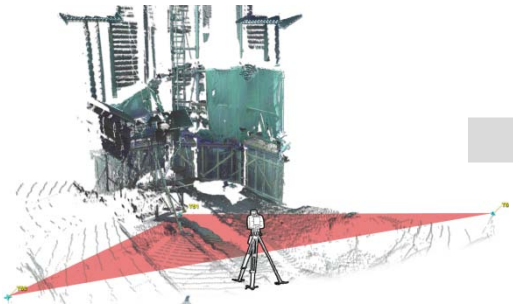
Project summary



TARGETS

Each scan is related to the others by means of **reflecting targets**, recognized automatically by the laser scanner, which form a 3-D **horizontal topographic network** connected at reference points and georeferenced on the cadastral map.

This network will be used as a **support model for the assemblage of all the scans** both inside and outside the site; thus, it constitutes the **ESSENTIAL BASIS OF THE SURVEY** on which are referenced and integrated all the other data collected with other techniques, which will be used to integrate the zones not measured or not measurable by laser scanner or for which further information is required.



Project summary

With the creation of **computerized databases**, it is possible to:

- link the different supports to create a single organic system able to characterise the locality and all its relationships;
- satisfying all the requirements of:
  - Knowledge
    - Description
      - Control
        - Management and planning of interventions relative to the locality.

They should be able to function as **VIRTUAL PROTOTYPES** endowed with behavioural and performance similarity (above all topological, geometric and perceptive), so that we can observe, **simulate** and **analyse** the **behaviours in a much better way than with analogical technologies** (with respect to both the visualization and the database).

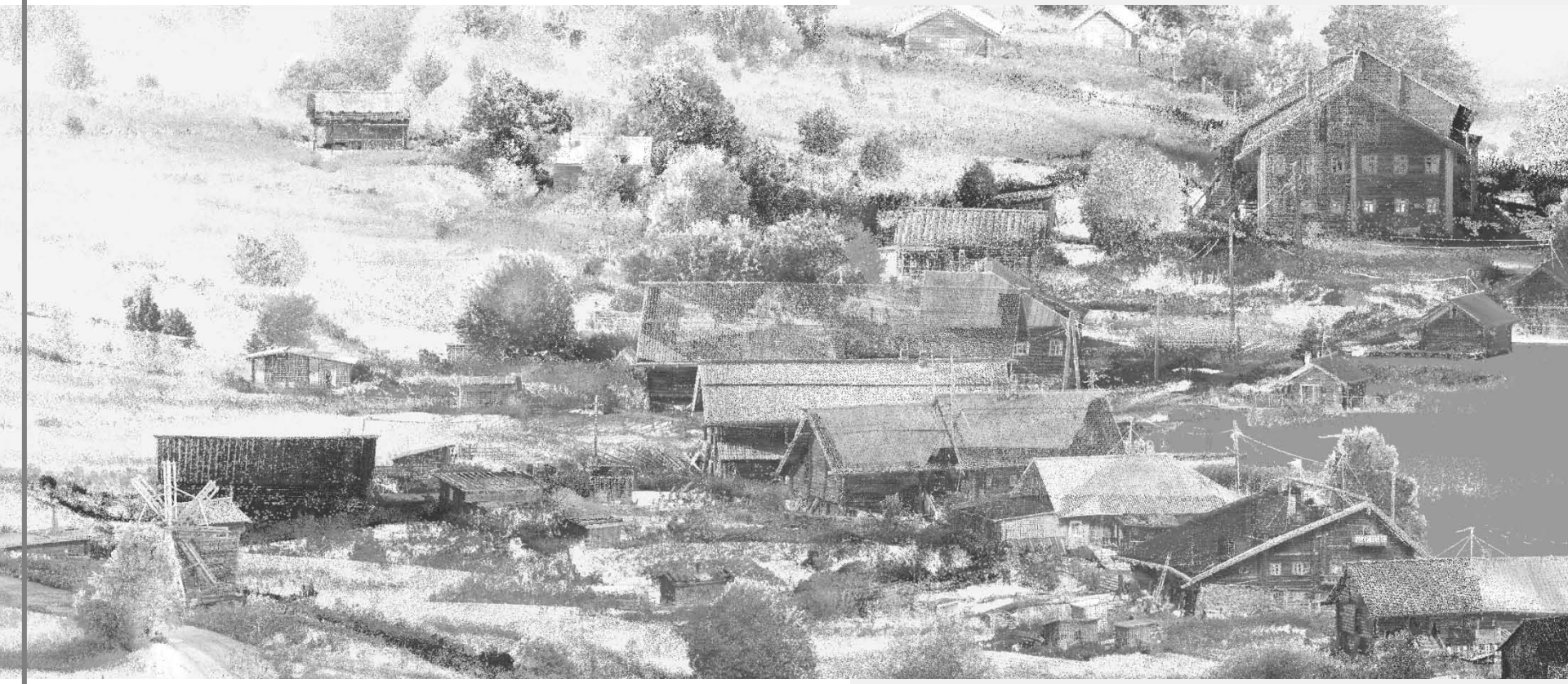
The serial combination of the models then allows the creation of **structures able to illustrate a system by a 3-D representation**.

Restitution of the environment and its complexity in a 3-D form helps with its visualization, or the conservation of information about it, but also in delimiting it, making it more easily organized and clearly restituted.

Project summary

The project therefore plans to experience these monitoring techniques on traditional karelian contexts, analyzing in terms of formal composition and constructive, **integrating skills**, from the contribution of the various countries involved, leading to the drafting of a

DOCUMENTATION METHODOLOGY NOW NECESSARY FOR COUNTERACT THAT NATURAL DECAY WOODEN ARCHITECTURE THAT WOULD SOON LEAD TO THE DISAPPEARANCE OF THIS IMPORTANT HERITAGE.



The area


Yurgilitsa
Veldozero
P21
Kinerma
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Who we are?

UNIVERSITY OF PAVIA
UNIVERSITY OF FLORENCE

ER1	Sandro Parrinello
ESR1	Sara Porzilli
ESR2	Francesca Picchio

PETROZAVODSK STATE UNIVERSITY

ERS1	Alexey Borisov
ERS2	Alexander Kosenkov

UNIVERTSITY OF OULU

ER2	Petri Vuojala
ER3	Anna-Maija Ylimaula
ER4	Kari Niskasaari

ER = EXPERIENCED RESEARCHER
ERS: EARLY STAGE RESEARCHER

Quality of the Exchange Programme

Objectives and relevance of the joint exchange programme

Table 1: List of Work Packages

Work package n°	Work package title	*Beneficiary*/Participant organisation short name	Start month	End month
1	Inspection to frame the issues of the sites	UNIFI/OULU/PETRSU	1	3
2	Campaign with laser scanner instrumentation	UNIFI/OULU/PETRSU	4	15
3	Database construction	UNIFI/OULU/PETRSU	16	20
4	Testing, final results and dissemination	UNIFI/OULU/PETRSU	24	27

Work package number	**1**	**Start date July 2012**
Work package title	Inspection to frame the issues of the sites	
***Beneficiary*/Partner Organisation short names**	University of Florence, University of Oulu, University of Petrozavodsk	

Objectives

The aim of this firs WP is that of **determining on the basis of investigation** of the sites in Karelia, which are the object of the research in order to guide the **design of the more appropriate analysis support**.

The **WP1 shall be divided into SEVEN TASKS**
that detail the flow of activities carry out by the Department of Architectural Planning and University of Oulu. The activity mentioned is focused on the preparation of the Kick Off Meeting (KOM) in Petrozavodsk (Karelia).

- The preliminary activity that will carry out include the **elaboration of documents for meetings reporting**, for the **elaboration of proceedings for managing the surveying activities** with the aim of controlling the flux of the future activities.

Quality of the Exchange Programme

Objectives and relevance of the joint exchange programme

WP 1: Inspection to frame the issues of the sites

RESEARCHERS OF UNIVERSITY OF FLORENCE AND OULU IN KARELIA/RUSSIA

Task 1.1:
Preliminary investigations for defying of "CASE STUDY" IN KARELIA/RUSSIA.

Task 1.2:
Preliminary investigations for the comprehension of management system tool used in Karelia/Russia.

Task 1.3:
Investigation in village areas for the definition of homogeneous descriptor of census support. This activity is aimed to define the general analysis criterion and the guidelines of the landscape structure.

Task 1.4:
Charts realising.

Task 1.5:
Database testing on a defined sample.

Task 1.6:
Control check of census support.

Task 1.7
Control check, calibration of database and management system tool used in Karelia/Russia.

Deliverables

D 1.1: Preliminary KOM; detailed list of planned activities, revision of work session, revision of deliverables;

D 1.1.1: List of homogeneous descriptors of census support;

D 1.2: Charts;

D 1.3: Report on database testing;

D 1.4: Determination of census supports and final report;

D 1.5: Document/Report on “case study” for activity in Karelia;

D 1.6: Document/Report for the comprehension of management system tool used in Karelia;

D 1.7: Final report on control check and calibration of data base;

Work package number	**2**	**Start date or starting event:** June 2013	Month July 2010
Work package title	Campaign with laser scanner instrumentations		
***Beneficiary*/Partner Organisation short names**	University of Florence, University of Oulu, University of Petrozavodsk		

Objectives

This Work Package is aimed to develop a campaign in Italy and Russia **for preparing the basis for the new modality of surveying and develop the skills** and add all the technical information that we need for the **CREATION OF THE NEW DATABASE**.

The equipment that will be use, will be two advanced models of Leica products as “Leica ScanStation 2 – HDS – High Definition Surveying” and Leica HDS 6100, the last evolution of this family of equipment.

Quality of the Exchange Programme

Objectives and relevance of the joint exchange programme

WP 2: Campaign with laser scanner instrumentations

Task 2.1:

Design of the evaluation methods for planning the surveying campaign in village areas. The work is focused on the design criteria for the planning of measurement campaigns in the villages. We identify guidelines for the structuring of the relief, in addition to the list of operational steps for action.

University of Petrozavodsk in Italy

Activities of research into the Laboratory of Landscape, Survey & Design

- Collaborations into Survey procedures
- Instruments and methods of survey
- Partecipation into pratic activities of survey
- System of data post-production of points clouds
- Systems of reverse Engenerring and modeling of points clouds
- Systems of analysis and rapid modeling with low-cost instruments
- Connection with amministrative systems and structures of the University of Florence and University of Petrozavodsk

Quality of the Exchange Programme

Objectives and relevance of the joint exchange programme

WP 2: Campaign with laser scanner instrumentations

Task 2.2:

Testing on different " case study" on different surveying systems defined in WP1 – Task 1.3; In this activity we shall identify and test the different case studies in different systems for surveying as defined in WP1. The deliverables will be: run of the relief, the database of the measure, in practice the taking of the data that will then be processed.

University of Florence and University of Oulu in Karelia/Russia







Quality of the Exchange Programme

Objectives and relevance of the joint exchange programme

WP 2: Campaign with laser scanner instrumentations

Task 2.3:

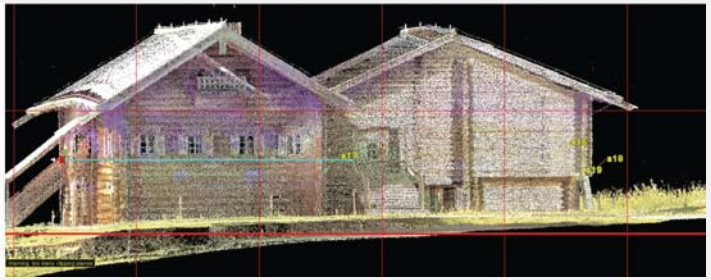
Recording of point cloud of surveying for creating a 3D supports on Karelian Villages and traditional Landscapes.

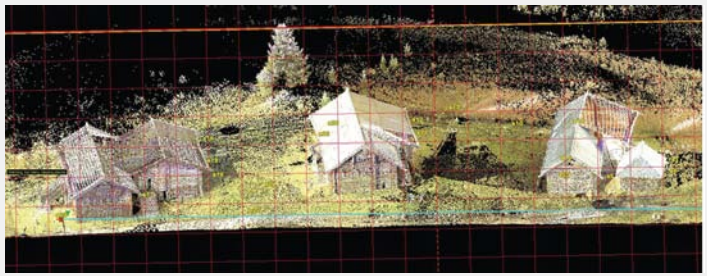
University of Petrozavodsk in Italy

Task 2.4:

Elaboration of model of point cloud and testing on surveying activities on Karelian Villages and Landscapes. At this step, we shall create the designs and deliverables necessary to be operational with the criteria described for Russians, including the analysis and definition of new criteria.

University of Petrozavodsk in Italy





Quality of the Exchange Programme

Objectives and relevance of the joint exchange programme

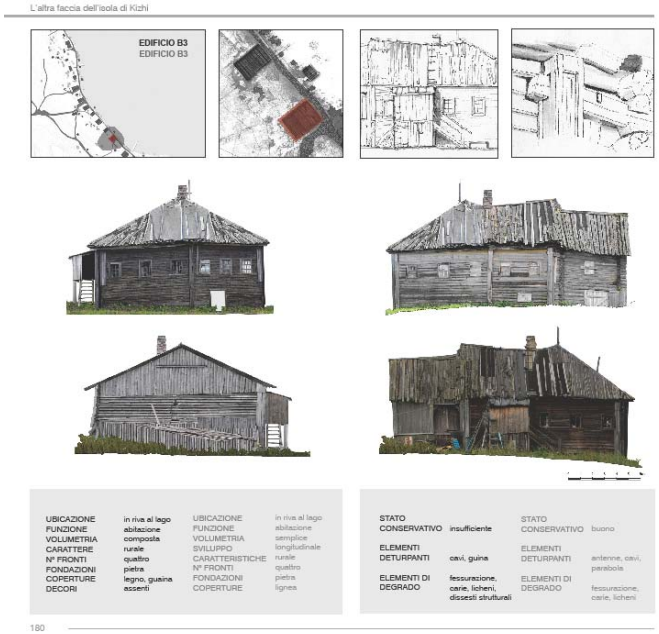
WP 2: Campaign with laser scanner instrumentations

Task 2.5:

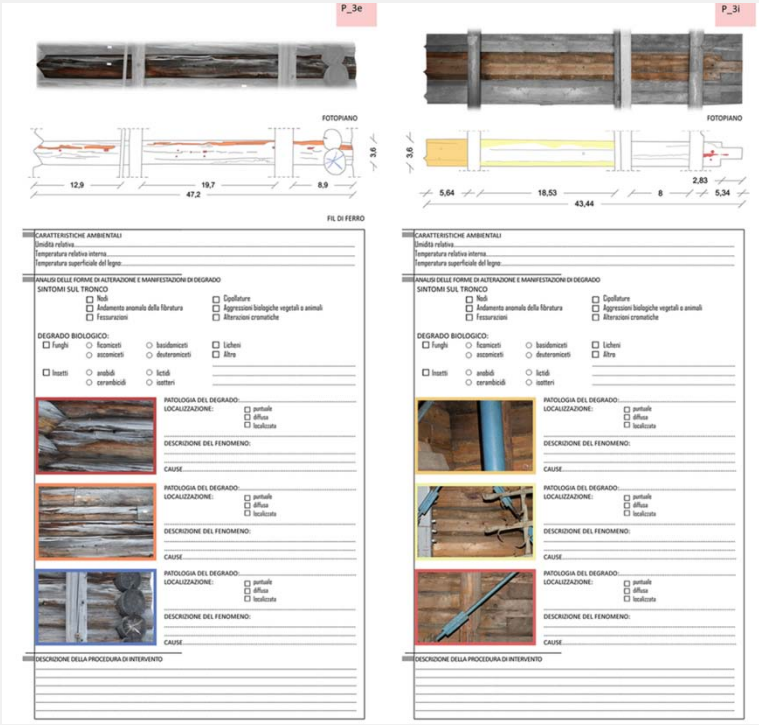
Compilation of descriptive schedules on wooden architecture investigated. This creates a census card and a description of the architecture supporting suspect. The activity is lead only by University of Oulu.

University of Petrozavodsk in Italy

The University of Oulu will processes in their laboratories the information acquired in Karelia. This is a methodological operation without major complications but takes time. The Finnish researchers can then work in their laboratories without having to travel or go by without someone and they will bring the project results to the partners.



From the analysis of the village to the census of the architectures since descreptive schedules of every architettonic elements



Quality of the Exchange Programme

Objectives and relevance of the joint exchange programme

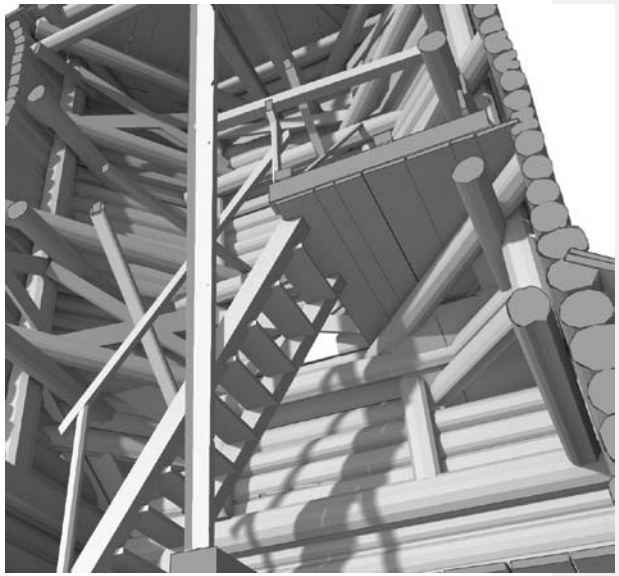
WP 2: Campaign with laser scanner instrumentations

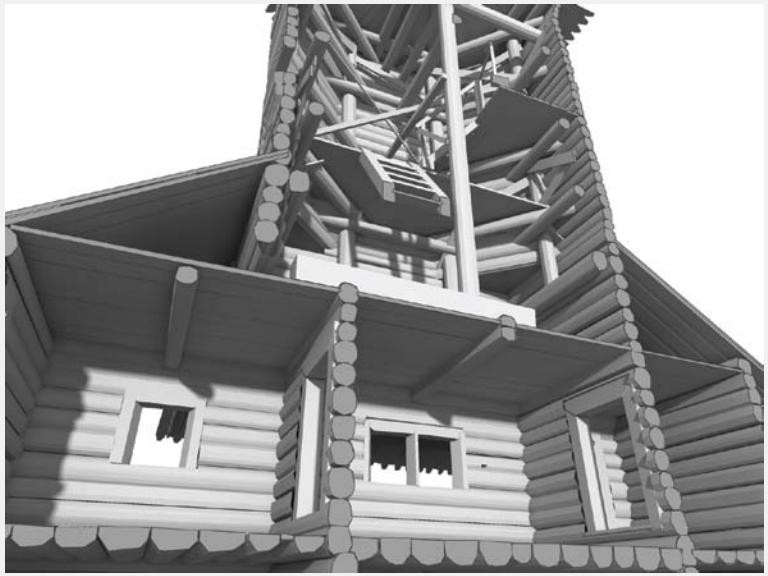
Task 2.6:

Analysis of potential of point cloud in Karelian Villages and landscapes design and planning for implementing integrated grafic systems.
University of Petrozavodsk in Italy
University of Florence and University of Oulu in Karelia/Russia, at the end of Task.

Task 2.7:

Check Point in Oulu
The check point is aimed to verify the correct results of the previous activities planned and to verify and scheduled the remaining part of the investigation.
University of Petrozavodsk in Oulu.





Quality of the Exchange Programme

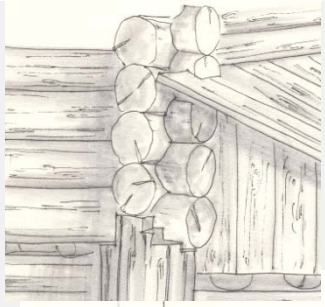
Objectives and relevance of the joint exchange programme

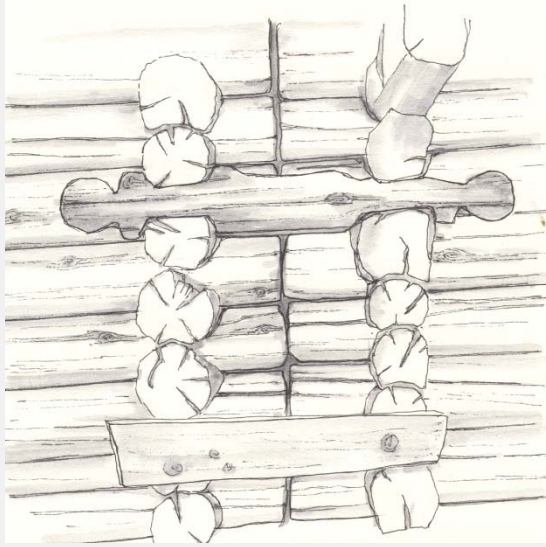
WP 2: Campaign with laser scanner instrumentations

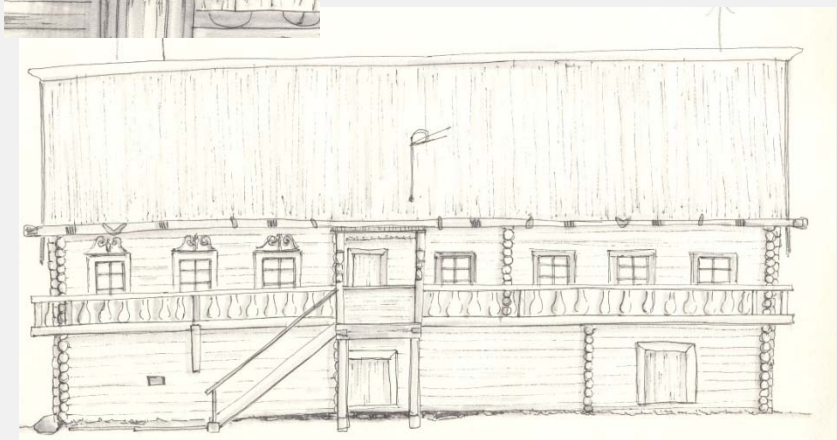
Deliverables

D 2.1: Report on methods used for surveying campaign;

The integration of data from several surveying operations produces, in the synthesis, the **DEVELOPMENT OF A SPECIFIC METHODOLOGY USEFUL IN DEFINING THE CRITERIA OF REPRESENTATIVE-WOODEN ARCHITECTURE**. And the belief 'that this work will be able to' define operational protocols for the definition of appropriate technical drawings can clarify specific aspects of the drawing-wooden architecture. These protocols will facilitate the development of restoration projects as well as provide guidelines for the development of procedures related to the graphic representation of woodworking technology useful for the development of systems analysis.





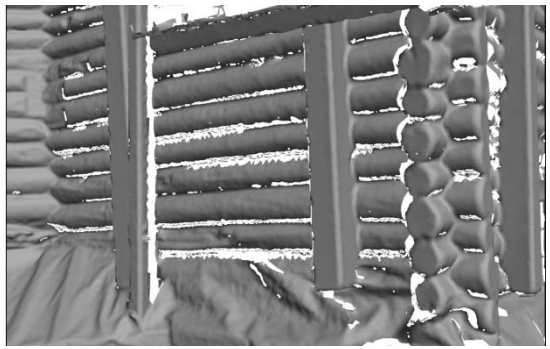
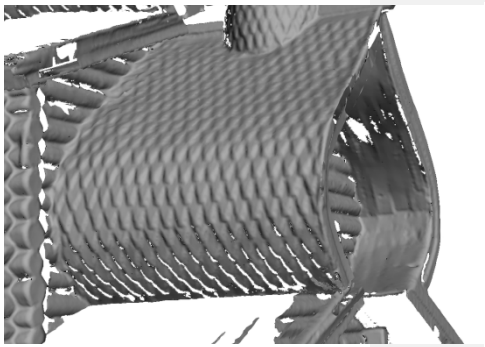


D 2.2: Report on tests with Laser scanner

The laser scanner is configured as the appropriate tool to **collect data on quality 'architectural morphology of the surface**. For the wooden architecture the arthiculated morphology of individual building elements, of individual pieces of wood, seems to encourage this experimentation. **LASER SCANNERS EXPERIMENTATION WILL ALLOW TO ASSESS THE DIFFERENT QUALITY OF THE MACHINE AND THE RESPONSES OF DIFFERENT SYSTEMS USED** (flight time, iterferometro, phase difference, etc..) in the correct definition of building systems.

WP 2: Campaign with laser scanner instrumentations

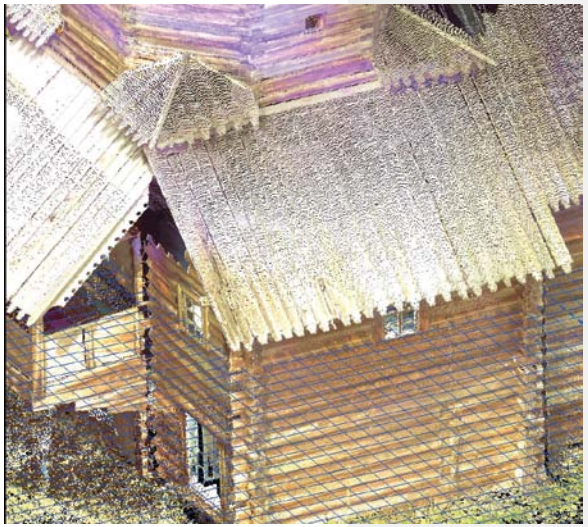
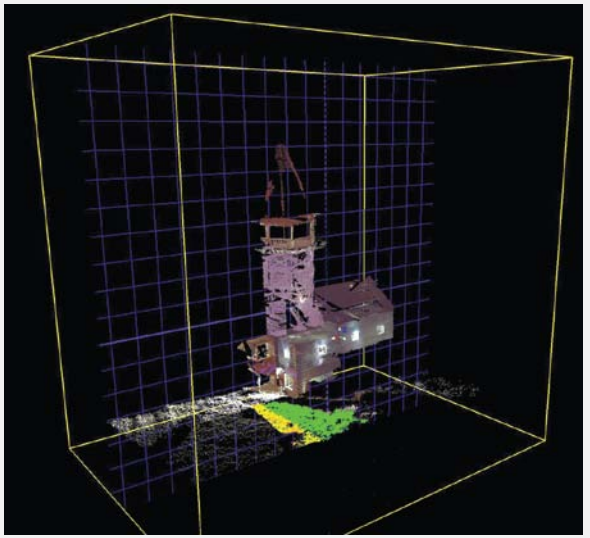
D 2.3: Files of 3-D supports;
Evaluation of automatic **3D modeling made directly from point clouds (REVERSE ENGINEREENG PROGRAMS)** in comparison with traditional modeling systems that use Conventional vector graphics programs. The use of conventional means will also be suitably evaluated as the implementation of the descriptive data accessible by the use of methodological procedures put in place in the project documentation.


D 2.4: Report on testing activities on surveying activities on traditional villages and landscapes;
Will be identified whether one or more villages will be able to meet the ideal conditions for the development of the activities above mentioned. Dilapidated buildings, interesting relationships settlement, traditional compositions, decorative items, etc.. Urban structures that may foreshadow how to correct such archetypes of urban aggregations that these examples will be studied throughprocessing of survey campaigns gain knowledge through the design, surveying, geometry and the constructive-technical analysis, the salient features context.

WP 2: Campaign with laser scanner instrumentations

D 2.5: Document/Report on analysis of potential of point cloud in traditional villages and landscapes;
We will assess the contribution of the point cloud as a database on the extent of the village as a function of opportunity to increase the quantitative data bank with information from other quality graphic design or analysis.

Work package number	**3**	Summer 2014	
Work package title	Database construction		
***Beneficiary*/Partner Organisation short names**	University of Florence, University of Oulu, University of Petrozavodsk		

Objectives

Scope of the WP is:

- Return of gained data in a database accessible and georeferenced in plan;
- Construction of interpretative sections of the traditional timber architecture and its environment and landscape, aimed to
- Produce the evaluation of the intervention on environmental level.

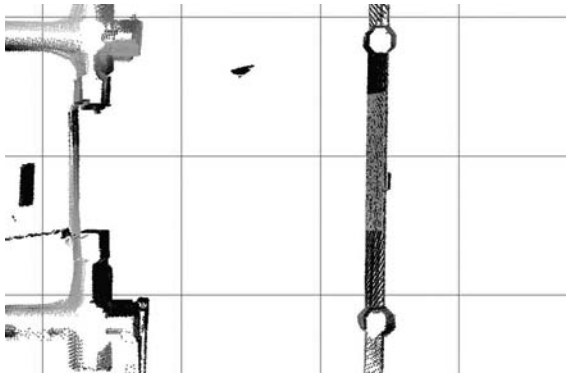
The last four months will be dedicated for preparing the necessary activities for dissemination with a publication and two final scientific meeting in Italy, Finland and Karelia.

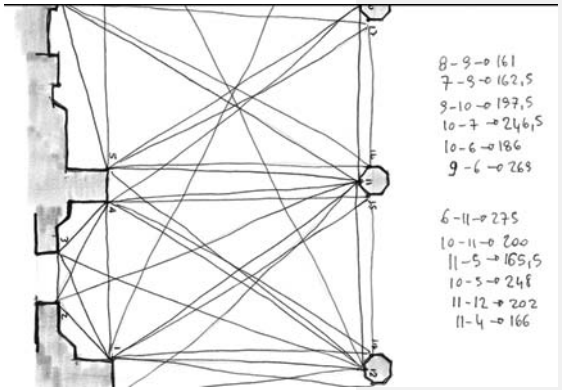
Description of work

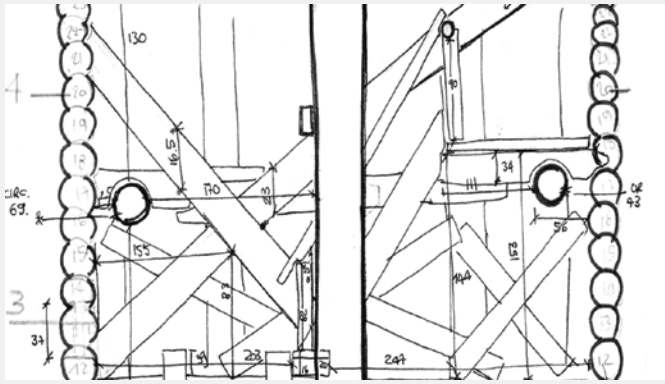
Task 3.1: Integration of survey analysis on the field

The objective is to **examine the imperfections of the laser measurements** and to determine what needs to be recognized in hand. The activity will follow with the examination of the working methods and we will seek to structure a dialogue between the developed scanner and the traditional construction process of standardizing the wooden architecture major.

University of Florence and Oulu in Karelia







Task 3.2: Surveying transformation in GIS modelling

The objective is the establishment of support bases for GIS. The activity consists in the PROCESSING OF THE DATA OF MORPHOMETRIC RELIEF AND THE INTEGRATEION ON A GIS PLATFORM. It involves modifying the parameters of infographic drawings to achieve the establishment of archives directly addresses the three-dimensional point clouds and relief goods.

University of Petrozavodsk in Italy

Quality of the Exchange Programme

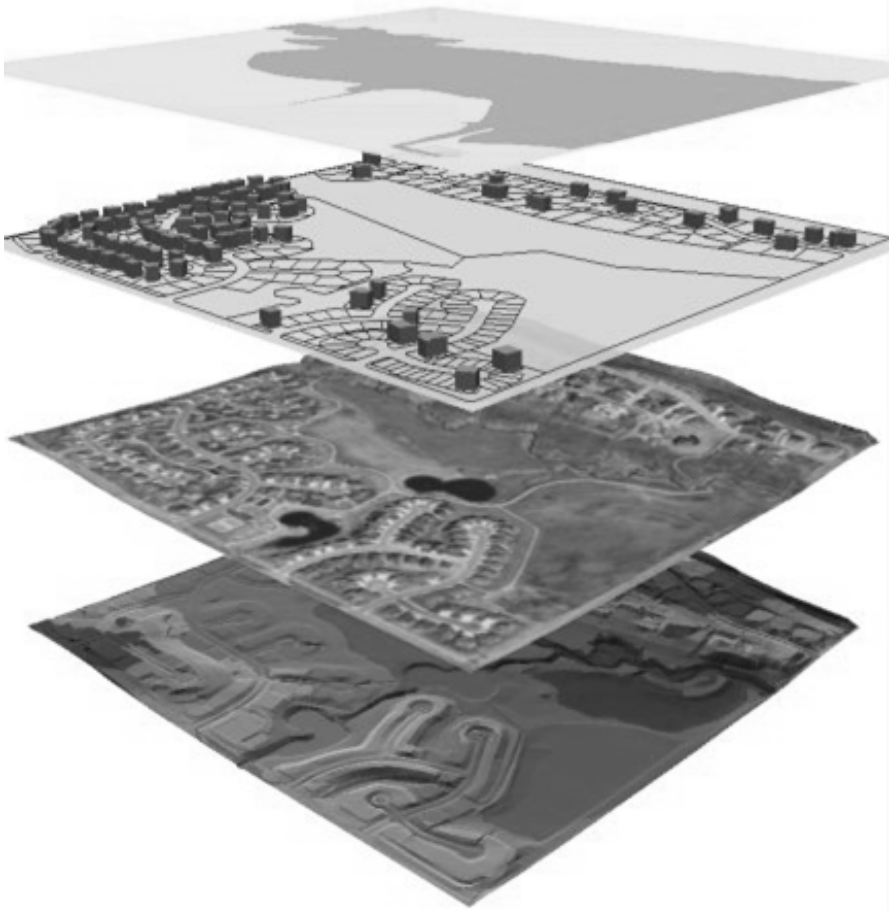
Objectives and relevance of the joint exchange programme

WP 3: Database construction

Task 3.3: Exporting database and compatibily evaluation
The product database, to be integrated into the representative system, must be removed and transformed into the graphics system. This is a procedure that, apparently automatic, always requires a lot of tests and preparation of functional equity instrument that allows you to make it easy to manage your data.
University of Petrozavodsk in Italy

Task 3.4: Transformation of point cloud in files for databases use through exportation of each single landscaping element
This is to export the general registration of laser scans processed in a GIS environment. This involves a series of computer procedures where the point cloud is calibrated and fragmented, to link the information from the database and finally reassembled in a GIS environment.
University of Petrozavodsk in Italy

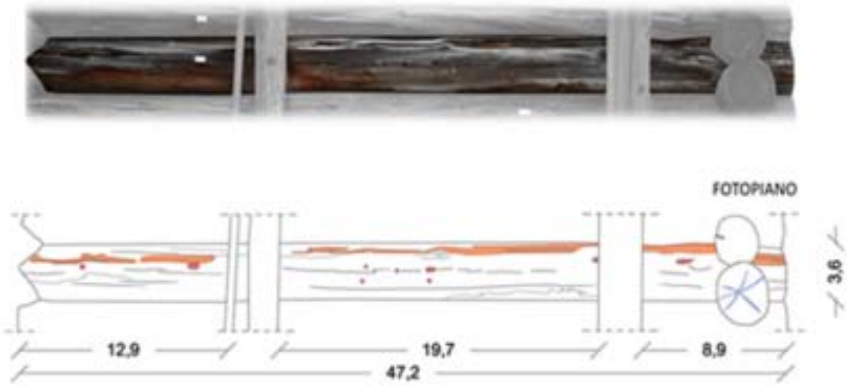
Task 3.5: Integration of database with point cloud
Here, we shall integrate this creation of GIS on the cloud of points and to develop a descriptive system integrated between census and survey. Represents the most innovative and experimental research, seen from a technological point of view, subject to the interest in landscape and culture combined with the research.
University of Petrozavodsk in Italy

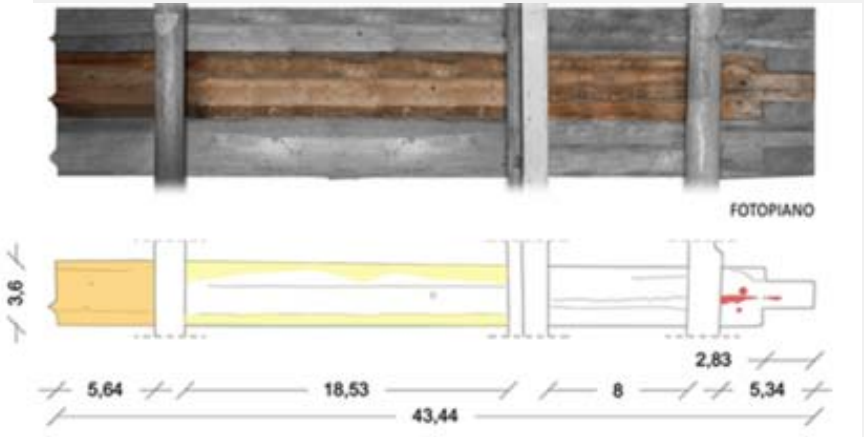


Deliverables

D 3.1: Realization of final database

THE FINAL DATABASE will be **THE DEFINITION OF FUNCTIONAL RESTORATION**, which can then be provided on the Karelian wooden architecture. Looking at different samples of architecture from various villages and analyzing the diagnostic point of view, proceeding to develop assumptions including the **restoration of solutions**, we will define the narrative useful descriptors of the condition of the property by delivering a census sheet that will be able to be adopted for the census total of all the Karelian traditional houses The cards in addition to describing the condition of the property-framing and context analysis, physical condition of degradation and analysis of the systems, will provide guidelines and preliminary indications for the restoration, to provide useful systems for the redevelopment of the overall development traditional Karelian context.





Work package number	4	Autumn 2014	
Work package title	Testing, final results, dissemination		
Beneficiary/Partner Organisation short names	University of Florence, University of Oulu, University of Petrozavodsk		

Objectives

Objective of this last Work Package is the **DISSEMINATION OF RESULTS AND INVOLVEMENT OF ALL MANAGERS OF PUBLIC INSTITUTIONS THAT ADMINISTER THE KARELIAN TERRITORY**, as well as academics interested in this research in the countries covered by the agreement. Innovation system related to the documentation systems and the establishment of a new methodological approach can provide guidance on potential conceptual knowledge of an analysis system based on major architectural wooden pipe with laser systems. Moreover, the research will provide a documentary corpus that will be useful to further research on additional experimentation in other case studies, and may constitute support for the sharing of the learning process with experts from around the world.

Quality of the Exchange Programme

Objectives and relevance of the joint exchange programme

WP 4: Testing, final results, dissemination

Description of work

Task 4.1: Final test and final results.
The activity is aimed to realize the final test and to produce a definitive documentation tool, with a final publication.
University of Florence in Karelia

Task 4.2: Dissemination – Italy
Final workshop in Italy, University of Florence
University of Petrozavodsk in Italy

Task 4.3: Dissemination – Oulu
Final workshop in Finland, University of Oulu
University of Petrozavodsk in Finland

Task 4.4: Dissemination – Petrozavodsk – Karelia
Final workshop in Karelia, University of Petrozavodsk
University of Florence and Oulu in Karelia

Deliverables

D4.1: Publication
In order to promote this experience is expected to achieve a scientific publication that collects the experiences of the European project where you will be able to understand the methods, experiences, where they will be addressed in detail all the procedures which will be explained concretely and methodological issues related to the bank data, documentation of processes and image-restoration. It is also expected to make the conferences at the universities concerned, which will also involve the public and government bodies of Karelia in which you present the results of their work.

Table 4: Gantt chart of secondments

The Gantt chart shall illustrate the secondments of exchanged staff towards all the participant organisations for the whole duration of the *project*. See attached excel file to fill up the Gantt chart.

PARTICIPANT NUMBER	ORIGIN PARTNER	ORIGIN COUNTRY	HOST PARTNER	HOST COUNTRY	SECONDED TYPE	DURATION (MONTHS)	STARTING MONTH
1	UNIFI	ITALY	P3	RUSSIA	ER1	3	7
1	UNIFI	ITALY	P3	RUSSIA	ER1	1	11
1	UNIFI	ITALY	P3	RUSSIA	ER1	1	20
1	UNIFI	ITALY	P3	RUSSIA	ER1	3	22
1	UNIFI	ITALY	P3	RUSSIA	ER1	1	30
1	UNIFI	ITALY	P3	RUSSIA	ER1	1	33
2	UNIFI	ITALY	P3	RUSSIA	ESR1	3	7
2	UNIFI	ITALY	P3	RUSSIA	ESR1	1	11
2	UNIFI	ITALY	P3	RUSSIA	ESR1	1	20
2	UNIFI	ITALY	P3	RUSSIA	ESR1	3	22
2	UNIFI	ITALY	P3	RUSSIA	ESR1	1	30
2	UNIFI	ITALY	P3	RUSSIA	ESR2	1	33
3	UNIFI	ITALY	P3	RUSSIA	ESR1	3	7
3	UNIFI	ITALY	P3	RUSSIA	ESR1	1	11
3	UNIFI	ITALY	P3	RUSSIA	ESR1	1	20
3	UNIFI	ITALY	P3	RUSSIA	ESR1	3	22
3	UNIFI	ITALY	P3	RUSSIA	ESR1	1	30
3	UNIFI	ITALY	P3	RUSSIA	ESR2	1	33
4	OULU	FINLAND	P3	RUSSIA	ER2	3	7
4	OULU	FINLAND	P3	RUSSIA	ER2	1	11
4	OULU	FINLAND	P3	RUSSIA	ER2	1	20
4	OULU	FINLAND	P3	RUSSIA	ER2	3	22
4	OULU	FINLAND	P3	RUSSIA	ER2	1	33
5	OULU	FINLAND	P3	RUSSIA	ER3	3	7
5	OULU	FINLAND	P3	RUSSIA	ER3	1	11
5	OULU	FINLAND	P3	RUSSIA	ER3	1	20
5	OULU	FINLAND	P3	RUSSIA	ER3	3	22
5	OULU	FINLAND	P3	RUSSIA	ER3	1	33
6	OULU	FINLAND	P3	RUSSIA	ER4	3	7
6	OULU	FINLAND	P3	RUSSIA	ER4	1	11
6	OULU	FINLAND	P3	RUSSIA	ER4	1	20
6	OULU	FINLAND	P3	RUSSIA	ER4	3	22
6	OULU	FINLAND	P3	RUSSIA	ER4	1	33
7	PetrSu	RUSSIA	P1	ITALY	ERS2	1	10
7	PetrSu	RUSSIA	P1	ITALY	ERS2	6	12
7	PetrSu	RUSSIA	P2	FINLAND	ERS2	1	21
7	PetrSu	RUSSIA	P1	ITALY	ERS2	2	25
7	PetrSu	RUSSIA	P1	ITALY	ERS2	1	31
7	PetrSu	RUSSIA	P2	FINLAND	ERS2	1	32
7	PetrSu	RUSSIA	P1	ITALY	ERS3	1	10
7	PetrSu	RUSSIA	P1	ITALY	ERS3	6	12
7	PetrSu	RUSSIA	P2	FINLAND	ERS3	1	21
7	PetrSu	RUSSIA	P1	ITALY	ERS3	2	25
7	PetrSu	RUSSIA	P1	ITALY	ERS3	1	31
7	PetrSu	RUSSIA	P2	FINLAND	ERS3	1	32

SPASIBA