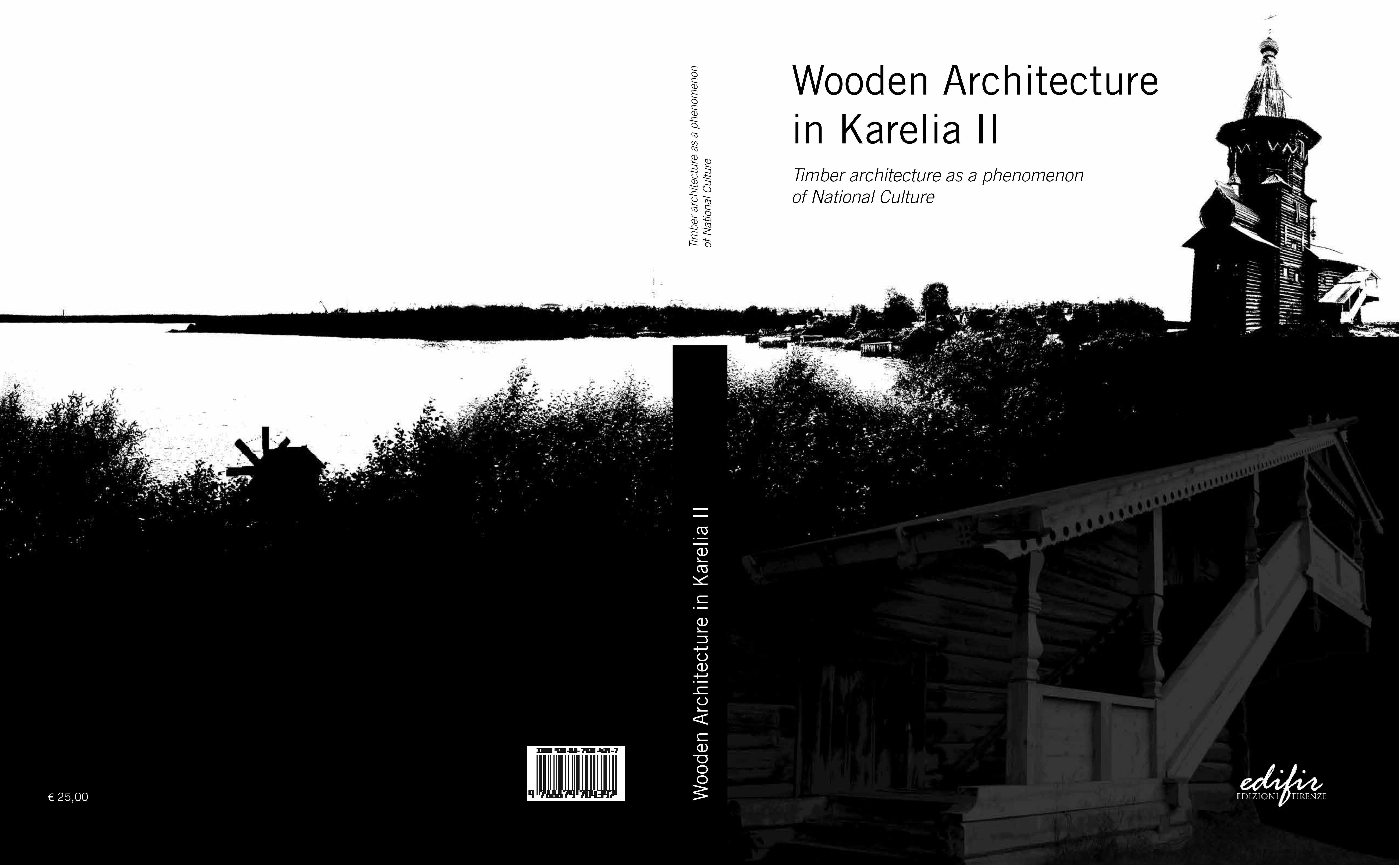

Wooden Architecture in Karelia II

Timber architecture as a phenomenon of National Culture

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II° International Conference
Petrozavodsk, 22-26 June 2009

Wooden Architecture in Karelia II
Timber Architecture as a Phenomenon of National Culture

II международная конференция
Петрозаводский, 22-26 Июнь 2009

Деревянное зодчество в Карелии II
Деревянное зодчество как феномен национальной культуры

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Приложение

Wooden architecture is one of the most ancient and once widely spread revelations of the human construction activities. The use of wood in the past was widespread and the extraordinary history of its use for construction has created original aspects of the wooden architecture in different countries of the world, linked to the different geographic areas, with their issues and formal constructive systems. The constructive forms and details of the national wooden architecture monuments reflect not only peculiarities and different aspects of the constructive systems, realised in this material which can easily be found in nature, but also the most ancient notion of cooperation between nature, society and a human being in different cultural and social environments.
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 living traditions of the wooden architecture and concentration point of the wooden architecture monuments, with its consequent threat of complete disappearance of this most precious part of historical and architectural heritage. Its losses are especially felt at the Russian North, known in the world as a natural territory which preserves numerous examples of important wooden architecture.
Between experts at an international level, the growing awareness of the value of wooden buildings as important architectural and unique document in its kind is becoming particularly important. The wooden monuments also tend to become hubs of cultural interest, as well as for the tourism, in order to revive and develop the local ethnic traditions and the national consciousness and concrete patriotism.
The traditional wooden buildings are also a source of ideas and inspiration for many contemporary architectures that have the aim of achieving a perfect eco-environmental compatibility, according to the modern requirements of environmental sustainability, the national cultural priorities and the preservation of a cultural objects which are integrated with the "genius loci" and the "spirit of place" .
The University of Florence, the Petrozavodsk State University, the Government of the Republic of Karelia and the Kizhi museum have invited experts to take part in the 2nd International Conference on Wooden Architecture in Karelia. The purpose of the conference is to open an international debate on the meaning of traditions and monuments of the wooden architecture in the culture of the contemporary society, to stimulate the exchange experience in research activities, the studies and experimentation of restoration and conservation processes of wooden buildings, in order to identify innovative methods for the management of this great cultural heritage even within a process of economic development.
The 2nd International Conference was held in the Republic of Karelia, widely known for its numerous wooden architecture monuments and well-kept traditional villages, complete fragments of historical architectural and landscape environment.

The contributions in this publication are organised along the following topics

1. Research of traditional wooden architecture in the context of history and culture of the regions
- National schools of studying wooden architecture: methods, approaches, results;
- Regional communities, local peculiarities and specific ethnic character of the wooden architecture;
- Regional and ethno-cultural conditions for constructive systems and their elements in the traditional wooden building;
- Monuments of the wooden architecture: new discoveries.

2. Preservation of the wooden architecture objects
- Inventorying and documentation systems of the architectural heritage;
- Methods and ways to preserve historical wooden buildings: conservation (keeping up repairs), partial and complete restoration with the change of separate elements or complete re-assembles, reconstruction with new materials as newly made models or authentic copies and their historical and cultural conditions;
- Traditional and modern approaches to the restoration works. Reconstruction of historical carpenter technologies, consideration of local building traditions.

The organizers of the conference also present in the appendix to the volume, some results of the activities which have been developed in Karelia in the framework of international cooperation between the University of Florence (Italy) and the Petrozavodsk State University (Karelia) for the documentation and preservation of the wooden architecture.

Stefano Bertocci
Sandro Parrinello
Vyacheslav P. Orphinskij

Деревянное зодчество – одно из самых древних и некогда широко распространенных проявлений строительной деятельности человечества. Длительная история существования привела к сложению в разных частях мира самобытных конструктивных и образных систем деревянной архитектуры. В формах и деталях национальных архитектурных памятников из дерева воплощены не только особенности понимания конструктивной работы этого натурального строительного материала, но и отражены древнейшие представления о взаимодействии природы, общества и человека, сложившиеся в разных культурах.

В настоящее время стремительная деградация сельской среды обитания – последнего оплота живых традиций деревянного строительства и средоточия памятников деревянной архитектуры - несет угрозу полного исчезновения этого ценнейшего пласта историко-архитектурного наследия. Особенно ощутимы его утраты на Русском Севере, всемирно известном как естественный заповедник деревянного зодчества. По мнению специалистов, для сохранения наследия деревянной России необходимо незамедлительное принятие решений на самом высоком административном уровне.

Вместе с тем, в мире растет понимание ценности наследия деревянного зодчества как уникального историко-культурного документа. Памятники деревянной архитектуры все активнее аккумулируют вокруг себя деятельность, которая способствует возрождению и развитию этнических традиций, национального самосознания и конкретного патриотизма. Исторические деревянные постройки служат источником идей и образов для современной архитектуры, нацеленной на экологическую безупречность, акцентирование национальных культурных приоритетов и выявление «духа места» (genius loci).

Целью конференции является обсуждение значения традиций и памятников деревянного зодчества в культуре современного общества, обмен опытом в деле исследования, сохранения и реставрации исторических деревянных построек, управления архитектурным наследием и включения его в туристическое и иное использование.

Место проведения международной конференции - Республика Карелия, широко известная многочисленными памятниками деревянного зодчества и сохранившимися традиционными деревнями – целостными фрагментами исторической архитектурно-ландшафтной среды.

Статьи в настоящем издании организованы по следующим темам:

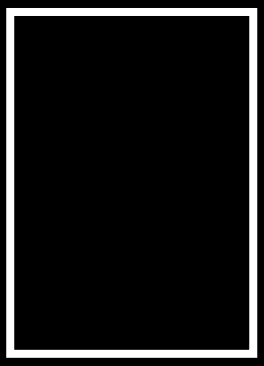
1. Исследования традиционного деревянного зодчества в контексте истории и культуры региона
- Национальные школы изучения традиционного деревянного зодчества: методы, подходы, результаты.
- Региональная общность, локальные особенности и этническая специфика деревянного зодчества.
- Региональная и этнокультурная обусловленность конструктивных систем и их элементов в традиционном деревянном строительстве.
- Памятники деревянного зодчества: новые открытия

2. Сохранение объектов деревянного зодчества
- Инвентаризация и системы документирования архитектурного наследия.
- Методы и способы сохранения исторических деревянных сооружений: консервация (поддерживающий ремонт), фрагментарная и целостная реставрация с заменой отдельных элементов или путем полной переборки, воссоздание из нового материала в виде макетов-новоделов или аутентичных копий. Историко-культурная и технологическая их обусловленность.
- Традиционные и современные подходы к производству реставрационных работ. Воссоздание исторических плотницких технологий, учет особенностей локальных строительных традиций.

Организаторы конференции также представляют в приложении к изданию некоторые результаты деятельности по документированию и сохранению деревянного зодчества, которая предпринималась в Карелии в рамках международного взаимодействия университетов Флоренции и Петрозаводска.

С. Берточчи
С. Паринелло
В. П. Орфинский

Research of traditional wooden architecture in the context of history and culture of the regions



Stefano Bertocci

Professor at Florence University, in Architectural Planning Department, was born in Florence on 1957, and graduated in architecture in 1984.
His activities in the field of architectural relief and survey mapping have continuously involved and take part in the Italian relief projects at Petra, Jordan, as well as conducting the field trips of the Archaeology Specialisation. Directed the projects: 'The Architectural Survey of the Boundary Wall of the ancient town Iasos in Caria, (Turkey)'; the project 'Filing and managinga the Old Town Centre of Montepulciano'(Italy); the project of survey "El reparto de Vista Alegre en Santiago de Cuba" (Cuba); the project "Wooden architecture in Karelia" (Russia).

Wooden architecture and landscape: the survey of the village of Bolshaya Selga in Karelia
The work of the Italian research group of the Architectural Planning Department in collaboration with Prof. Vyacheslav Orfinsky of the University of Petrozavodzk, on the surveying of the village of Bolshaya Selga and its landscape falls within the framework of the international joint projects set up in 2007 between the University of Florence and the University of Petrozavodzk. The work will help to safeguard the heritage of the village of Bolshaya Selga where the Olonets provincial authority means to set up a sort of open-air museum, the initial nucleus of which is the building owned by the town museum and specially restored for the purpose.
The development of integrated procedures for the documentation of artistic and cultural heritage today avails of advanced technology to perform up to date surveys focusing on the mensorie geometric, morphological and material features of the existing heritage permitting the creation of computerised analytical systems.
Experiences in the scientific field performed within our study led to the perfecting of operating methods for surveying the wooden architecture, entailing investigations aimed at its correct interpretation, essential tools for a critical appraisal and careful assessment of the conservation and restoration work done.

Деревянное зодчество и ландшафты: обследование карельской деревни Большая Сельга
В рамках международного сотрудничества между Университетом Флоренции и Петрозаводским государственным университетом в 2007 году итальянской исследовательской группой кафедры архитектурного проектирования совместно с проф. Петрозаводского университета В.П. Орфинским является вкладом в сохранение наследия деревни, где администрация Олонецкого района намеревается создать музей под открытым небом. Его начальное ядро состоит в здании, находящемся в собственности Олонецкого национального музея, специально отреставрированном для этих целей.
Интегрированные подходы к документированию художественного и культурного наследия предусматривают сегодня использование для выполнения исследований пространственных, геометрических, морфологических и материальных характеристик существующего наследия самых современных технологий, позволяющих создавать открытые информационно-аналитические системы. Одним из результатов нашего проекта явилась разработка прикладных методик обследования объектов деревянного зодчества, которые могут с успехом применяться в исследованиях, направленных на изучение и понимание архитектуры, и предоставляют необходимые средства для критического прочтения данных и внимательной оценки действий, направленных на сохранение и реставрацию.

Architettura in legno e paesaggio: il rilievo del villaggio di Bolshaya Selga in Carelia
Nel quadro dei rapporti di cooperazione internazionale istituiti nel 2007 fra l'Università di Firenze e l'Università di Petrozavodzk si colloca il lavoro del gruppo di ricerca italiano del Dipartimento di Progettazione dell'Architettura in collaborazione con il Prof. Vyacheslav Orfinsky dell'Università di Petrozavodzk, relativo al rilievo del villaggio di Bolshaya Selga e del suo paesaggio.Il lavoro contribuirà alla tutela del patrimonio del villaggio di Bolshaya Selga dove l'amministrazione della provincia di Olonets intende realizzare una sorta di museo all'aperto il cui nucleo iniziale è costituito dall'edificio di proprietà del museo cittadino appositamente restaurato a tale scopo. Lo sviluppo di procedure integrate per la documentazione del patrimonio artistico e culturale si avvale oggi di tecnologie avanzate per l'effettuazione di rilievi aggiornati articolati nelle caratteristiche mensorie, geometriche, morfologiche e materiche del patrimonio esistente che permettano la costruzione di apparati informativi analitici Le esperienze condotte, in ambito scientifico, dal nostro studio hanno consentito la messa a punto di metodologie operative per il rilievo delle architetture lignee caratterizzate da indagini finalizzate alla corretta comprensione delle architetture, che costituiscono strumenti essenziali per la lettura critica e la valutazione attenta degli interventi di conservazione e restauro.

Puuarkkitehtuuri ja maisema: Suuri Selän kylän inventointi Karjalassa
Italialaisen Firenzen yliopiston arkkitehtuurin osaston tutkimusryhmän yhteistyö Petroskoin yliopiston professorin Vyacheslav Orfinskin kanssa, Suuri Selän kylän ja maiseman inventointi Karjalassa, kuuluu Firenzen yliopiston ja Petroskoin yliopiston väliseen, vuonna 2007 alkaneeseen yhteistyöprojektiin. Työ auttaa säilyttämään Suuri Selän kylän kulttuuriperintöä. Aunuksen piirihallinnon tavoitteena on perustaa Suuri Selkään eräänlainen ulkomuseo. Sen alkuna on jo Aunuksen museon omistama ja tähän tarkoitukseen restauroima asuinrakennus.
Taiteen ja kulttuurin perinnön yhteisten dokumentointimenetelmien käyttö perustu uuteen teknologiaan. Sen avulla voidaan esittää ajan tasalla olevia inventointeja, tietotekniikkaan ja mittausgeometriaan perustuvien analyysijärjestelmien avulla, keskittyen aineellisen kulttuuriperinnön muotoon ja materiaaliin.
Tutkimuksemme tieteelliset kokemukset auttoivat kehittämään puuarkkitehtuurin inventointiin soveltuvia käytännön menetelmiä, olennaisia välineitä virheettömyyttä tavoittelevaan tulkintaan, kohteiden kriittiseen arvottamiseen ja jo tehdyn suojelun ja restauroinnin huolelliseen arviointiin.

Wooden Architecture and Landscape: the Surveying of the Village of Bolshaya Selga in Karelia

Stefano Bertocci

1. View of the Bolshaya Selga village, Olonets District

A valorisation strategy of cultural heritage which is up to date in the objectives, strategies and policies put into effect cannot fail to be based on a solid and up to date knowledge of the heritage in question; in fact whatever intervention policy is chosen it is clear that a thorough acquisition of the cognitive data plays a key role in any subsequent decision-making and that a strategy of in-depth knowledge is the essential premise for any plans for safeguarding and valorising such assets.

The documentation aspect becomes even more crucial if the conservation policy regards both the physical, of the object, and the intangible, of the memory of historic, artistic and cultural values, which the artefact keeps alive and communicates over time. Decades of experience in the political, scientific and technical definition of the safeguarding of cultural heritage in Italy teach us, in fact, how the phase of cataloguing and identifying artefacts or sites has been superseded, with a leap in quality terms, activating more integrated and technologically advanced measures for the safeguarding of the artistic and cultural heritage.

These considerations and the long-standing collaboration of the Italian research group of the Architectural Planning Department of the University of Florence with Prof. Vyacheslav Orfinsky and the students of the University of Petrozavodzk, began in 2007 with the surveying of the village of Bolshaya Selga and its landscape [1]. Obviously, Prof. Orfinsky with his passion as an expert academic and his technical-scientific staff have provided a wealth of data on the wooden architecture of Karelia [2].

The aim of the Olonets provincial authority is to safeguard the heritage of the village of Bolshaya Selga and set up a sort of open-air museum there, the initial nucleus of which is the building owned by the town museum and specially restored for the purpose. Museums, with their specific function of divulging their contents of knowledge, are actually the custodians of collective memories and above all the means for a community to identify with its surroundings, practical reminders of the relations between men and between man and the territory he lives in.

In this framework other studies were performed, first in the village of Kinerma (2006) and subsequently in the village of Panozero (2008) the results of which will be the subject of a future report.

The development of integrated procedures for the documentation of the artistic and cultural heritage today avails of advanced technology to perform up to date surveys focusing on the mensorie geometric, morphological and material features of the existing heritage to enable the creation of open computerised analytical systems.

A database organised by interrelating the considerable wealth of three dimensional co-ordinates and qualitative data on the surroundings and the architectural or artistic artefacts, can be read at an infinite number of levels which are not necessarily limited to the time aspect but which may be integrated and developed in a multidisciplinary approach over time.

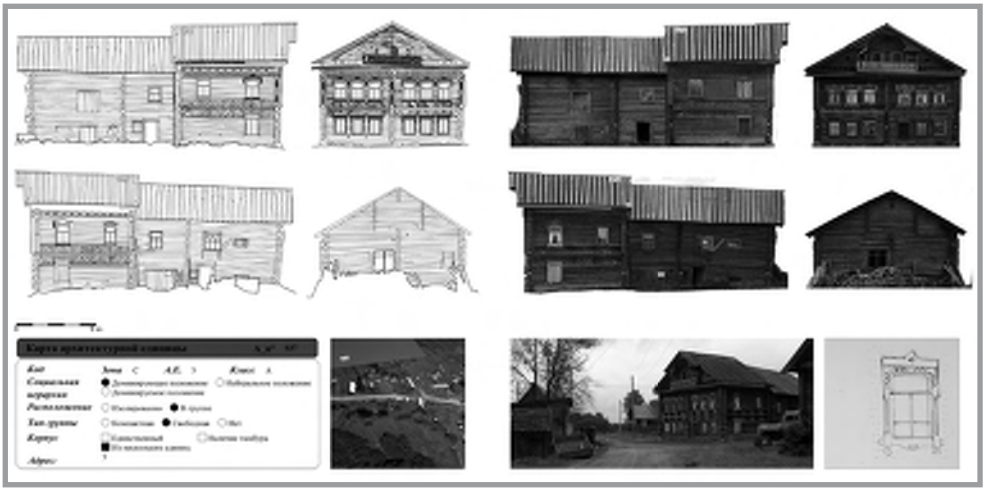
Within this strategy, the results of surveying operations acquire a series a values:

- a value bearing witness to and documenting the physical and material characteristics of the artefact and its context, as well as describing its conservation
- a value as a representative model of the object investigated in which the processing of the basic information plays a key role in the analysis of the artefact.

The higher the technological level of the surveying procedures – including through the use of sophisticated digital instruments and

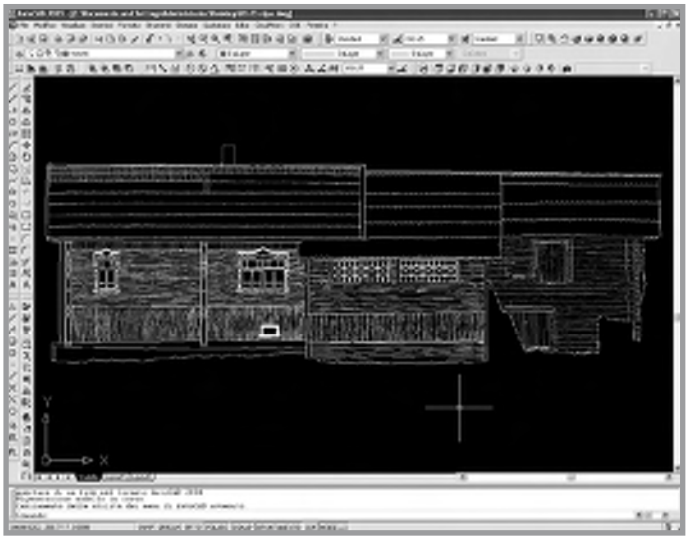
2. The house of Dubrovin in the village of Bolshaya Selga, Olonets District

methods- the greater the need to carefully control the attribution of a meaning to the information acquired, in relation to the formal, functional, constructive and spatial significance of the object surveyed.
In this sense scientific surveying today avails of a wealth of methodological know-how and instruments as well as the description of metric, formal, spatial and material characteristics of the heritage to permit a reconstruction of the historic development of the artefact and the place, reflect the chronological phases, ascertain the formal features, recording any anomalies or static criticality- in brief, capturing its spirit.
Experiences in the scientific field performed within our study led to the perfecting of operating methods for surveying the wooden architecture, entailing investigations aimed at its correct interpretation, essential tools for a critical appraisal and careful assessment of the conservation and restoration work done.
The surveying of architecture is an area of study which has had varying connotations over time, specifically linked to the culture and technical-scientific knowledge of each historic period. Each type of architecture is generally composed of a universe of data, spaces and volumes. Colours, materials, planes, light and shade and is usually a structure having a meaning for those using and living in it, made up of signs which in some way recall other signs; the product of a specific culture suggesting metaphors, analogies, comparisons putting abstract ideas and concepts into concrete form in a certain sense.
A universe of data therefore, which can be read and decoded only by using the right approach and multiple interpretations; surveying thus becomes a critical and highly hermeneutic activity. The product of the surveying operations constitutes an ordered set of data produced by investigation and discretisation, a job requiring knowledge, interpretation, selection and organisation the final product which consists of transmitting descriptive mental models, graphics or whatever else is deemed helpful to transmit the knowledge acquired.
When speaking of surveying in general one is referring to an operation performed so as to asses the spatial-dimensional characteristics of an object and all the data characterising it, starting for example from the material or functional data.
In general the operating methods leading to the performance of the survey divide into two main phases: 1) gathering the data needed for the assessment; 2) reconstructing the data acquired so as to make it comprehensible or in any case transmitting the data acquired.
The operator, surveyor is therefore "mediator" between the actual work, object of study, and the document produced at the end of the interpretation process destined to a specific user.
Gropius defined architecture as the boundary between the outside and the inside, just as Venturi considered it the product of the meeting of both internal and external forces of use and space [3]; between an inside and an outside the identification of the environments is expressed by a sign producing a difference in a specific context. Recognising this difference presupposes the recognition of different types of environment and therefore the identification of a discriminating factor needed for organisation into levels or for the breakdown of two different conditions of status, including through the recognition of function of some elements interposed between the two environments, such as for example the wall separating them. This operation requires the correct definition of the boundary between the parts, that thin line which separates one from the other, it's important to identify where something begins and where it ends.
According to Heidegger «*....not that at which something stops but, as the Greeks recognised, the boundary is that from which something begins...*» [4]. Defining limits at an urban level is not a simple task, especially in a landscape with such variegated signs as Bolshaya Selga where all those elements used to direct the meaningfulness of single environments are overturned, losing their identity in symbols requiring a specific awareness to be interpreted or in others which prove totally unexpected.
The investigations performed in the village of Bolshaya Selga are a perfect example of a surveying project organised by degrees, from making contact with the place to the description of its smallest detail. The project then developed hand in hand with the progress of the research, from the processing of data to a general investigation through every stage of knowledge of the locality; an extremely broad learning process therefore where continual refining of the project methodologies proved the only way of co-ordinating the operations in a reasoned manner so as not to lose the

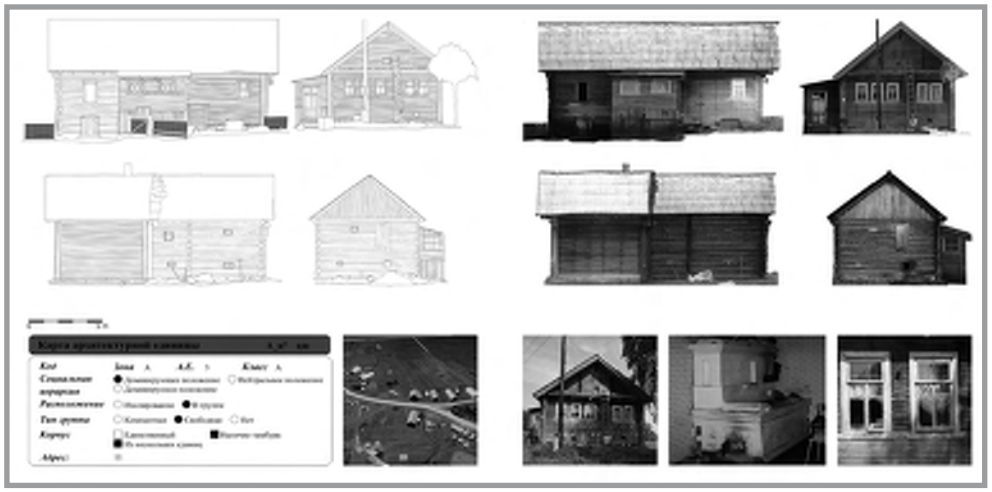


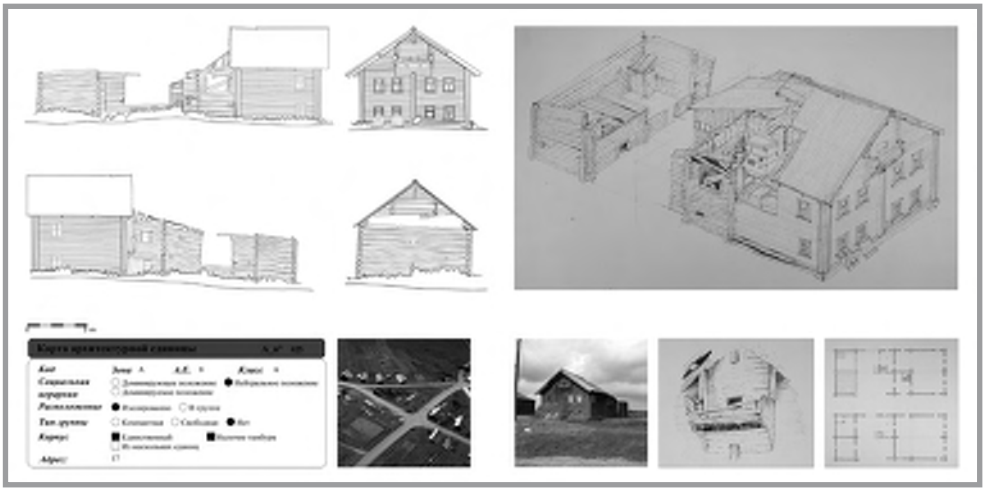
3. Final result of the survey work

thread of the study and be deviated by the many stimuli, sometimes contrasting, present in this specific environment.
A Total *Station* new generation theodolite coupled to a range finder was used to survey and generally place the village of Bolshaya Selga. The laser range finder measures distances without the use of a prism and is very useful when surveying inaccessible points. The latest generation total stations have a small computer able to automatically memorise readings of the horizontal and zenith angles, as well as the distance of each point and feed everything directly into the PC in AUTOCAD 3D files.
A topographical survey of the terrain and the significant points of the constructions was then performed so as to build a highly accurate support base for subsequent point survey operations. The total station was used for the architectural survey of the edifices, where it also proved useful for the reconstruction of the orthophoto maps of the fronts of the buildings. After the point acquisition the data was post-processed (so as to obtain polygonal, vectorial layers, depth quoted points and lines) and georeferenced on the basis of the datum points of the polygonal line.
A base was then built to develop the vectorial cartography, orthophotos and data collected by direct and topographical surveying were processed so as to be georeferenced using the same system of co-ordinates.
The results of the work can be seen in the exhibition organised for the occasion of this international congress and have been systematically published in an edition edited by the Olonets provincial authority with the contribution of the Ministry of Culture of the Republic of Karelia.



4. AutoCAD drawing of one village house





5-6. Final result of the survey work

Notes

[1] The University of Florence's mission directed by the writer (2007-2008) was co-ordinated by Sandro Parrinello; the students Barbara Gasser, Marialisa Basile, Filippo Sani, Antonella Zanni and Fanni Vujevits participated in the surveying of Bolshaya Selga.

[2] Among the many essays I will only mention the most recent: U.B. Alipova-A.A. Bussighina, *The problems of conservation of historic sites - the village of Bolshaya Selga in the Olonets region in the Republic of Karelia,* in *Folk Architecture, Petrozavodsk, Petrozavodsk State University edition*, Petrosavodsk, State University of Petrosavodsk edition, 2007, pp. 135-146; I. E. Griscina-E.V. Liallia, *The scientific potential of large-scale surveys of architectural heritage,* in *Folk Architecture* ... cit., pp. 487-506; S.O. Kuspak, *Regeneration and contemporay use of historical sites (such as the village of Kinerma),* in *Folk Architecture* ... cit., pp. 119-133.

[3] Cfr. W. Gropius, *The New Architecture and the Bauhaus*, Milano, Abscondita, 2004; R. Venturi, *Complexity and contradiction in Architecture*, New York, 1967, p. 88.

[4] M. Heidegger, *Essays and Speeches,* Milan, 1976, p. 103.