



ICOMOS

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ICOMOS ISCES+CC

International Scientific Committee on Energy, Sustainability and Climate Change

Editorial

Iran will be the site for the next CIAV Conference and Meeting. In this issue we are glad to reproduce the letter that have been sent from Mohammadreza Rahimzadeh President of Iran ICOMOS to Gisle Jakhell, CIAV President.

As you may read the Iran-ICOMOS have decided to create the Scientific Committee on Vernacular Architecture of Iran.

You will also find news about the Work Group which is studying the impact of the climate change in cultural heritage, and it will be of general interest to people related with vernacular architecture in the text about structural analysis of monumental and historical constructions which it is also related with the Structural World Congress.

Valeria Prieto

News from Iran

Dear President Gisle Jakhelln

I would like to thank you for your letter and apologize for the late response which was partly due to our New Year holidays and partly due to organizing for April 18 event and our general assembly in a couple of weeks later.

I would like to thank you again on behalf of Iran-ICOMOS members for your kind letter on Nowruz.

I am pleased to let you know that in our last board session, after the presentation made by the Vernacular Architecture Workgroup, we came to the final decision to create Scientific Committee on Vernacular Architecture in ICOMOS-Iran as our 10th scientific committee. The first president of the committee will be Dr. Siavosh Saberi.

After completing the registration of the founding members we will announce call for membership.

We hope that you and other interested CIAV members can arrange a meeting with the founding members of Scientific Committee on Vernacular Architecture of ICOMOS-Iran in your trip to Iran for organizing future cooperation.

Best regards,
Mohammadreza Rahimzadeh

Mohammadreza Rahimzadeh [<mailto:mrz.rahimzadeh@gmail.com>]

Sendt: 14. april 2018 20:38

Til: Gisle Jakhelln

Climate change and heritage working group

ADCOM Circ n° 9, 18 May 2018

Climate Change and Heritage Working Group: Soliciting contributions from committees.

CIAV have not had any activities concerning climate change as such last year and we don't have any particular project on this matter for 2018, not having used the headline of Climate Change.

However, it should be stressed that CIAV's work focuses on the use of energy within the built environment. CIAV works and analyses examples of traditional designs and methods to preserve climate within the buildings and its environment. Rural architecture use nature and traditional architecture to get a better climate inside the house as well as in courtyards. Vernacular architecture is one of the elements that strongly contribute to the preservation of the natural climate.

As CIAV works for the understanding of the values of the traditional settlements, this gives better shelter to the climate, and in this way helps people in front of climate change.

As to CIAV's activities I shall add that the CIAV Scientific Conference in Tabriz 1st – 5th October 2018 is focusing on "Cultural Heritage and Sustainable Development" with the following sub-themes:

- Theme 1: Conservation of cultural heritage as a driver for sustainable development.
- Theme 2: Vernacular built heritage of Tabriz, Iran and the Middle East;
- Theme 3: Vernacular built heritage and sustainability.
- Theme 4: Case studies

Theme 3 is as close as it gets to the topic of climate change. Overall all topics go well with Theme 3. "Mitigation and Energy Efficiency" of the CCHWG Outline Project Concept Note (p. 5).

The initiatives of your working group on climate change and heritage is very interesting and closely related to vernacular heritage - mainly due to the direct link between sustainability and the vernacular (e.g.: sustainable ways of construction and living; traditional knowledge, which is generally 'green' by design; migration patterns and traditional / customary management systems/practices concerning the use of natural resources; adequate response to climatic/seismic/environmental conditions and resilience to natural disasters, etc.).

We think that the vernacular category of heritage (alongside adaptive reuse, perhaps) is most relevant when it comes to “[...] the basic idea that heritage is both impacted by Climate Change and also a source of resilience for heritage sites and the communities they “anchor”, as you write in your report.

Best regards

Gisle Jakhell
President CIAV

Careggi: The history of a hospital to be rediscovered

Beatrice Messeri

M.Arch, PhD Technology and Management of Cultural Heritage

The Azienda Ospedaliero-Universitaria Careggi (AOUC), currently called Careggi hospital, is one of the largest in central Italy with about 60 hospital/ university/administrative pavilions, 6000 employees and 1,400 beds, a sort of citadel within the city of Florence, center of excellence for avant-garde medical care, but also holder of a rich cultural heritage consisting of architectural, artistic, scientific, book, archive and demo-ethnic-anthropological assets.

In 2010, thanks to the jointed contribution of the AOUCareggi and the Department of Medicine and Surgery of the University of Florence, the *Oltre la cura. Health and culture in the Florentine area* project was launched. To discover and enhance the heritage of the AOUC and June 11, 2010, on the occasion of the inauguration of the new hospital entrance, in the *OSA Osservatorio dei saperi e delle arti* (Observatory of Knowledge and Arts) was inaugurated the exhibition *Art and Science in the Cultural Heritage of AOUC*, followed in November by the exhibition *Beyond the body. The man*. The event involved a selection of pathological anatomy waxes and the stories of the patients to which they are related. In June 2013, thanks to the contribution of the Health Department of the Tuscany Region, the operational part of the project began with the aim of cataloging, enhancing and protecting the cultural heritage of the Hospital-University as a whole. With the campaign of cataloging the immense heritage, at the same time a series of protection works have begun for the safeguarding of heritage and enhancement events. Between 2014 and 2015, during the Centenary celebrations, various initiatives were organized in which the working group joined with conferences, video reconstructions of the history of the hospital (*Tempus Fugit, One Hundred Years of Our History*) and also an exhibition *Saluti da Careggi. The history of Careggi through vintage postcards*, which traces the history, architecture, and life of the hospital through historical postcards, which were sent by the patients to their relatives.



Florence, Dintorni di Rifredi, Villa Medicea, Facade and loggetta, (Michelozzo XV sec), old postcard traveled in 1929, De Cesaris's card collection

It is emblematic to retrace the events of the creation of the hospital and its heritage. The hilly area of Careggi has long been considered a particularly healthy place, so much that it was chosen as the site of important noble residences, such as Villa La Quiete and Villa Medicea (registered in the list of world heritage in June 2013 along with the other Medici villas). The Medicean villa was famous for housing the Neoplatonic Academy, founded by Cosimo de' Medici, where leading figures of the Italian Humanism used to meet. Even today the *Loggetta Platonica* is owned by the hospital.



Careggi. Via delle Masse. Loggia dell'Accademia Platonica, old postcard, Edit. Brunner & C. Como and Zürich-Stab. Eliografico, Manetti's card collection

Precisely in this area, at the beginning of the twentieth century, the *Arcispedale of Santa Maria Nuova*, located in the historic center, decided to build a new hospital, in consideration of the impossibility to readjust the century-old city hospital to the renewed hygienic-sanitary, social, economic, demographic, construction and technology needs of that time.

As per resolution of June 14, 1902¹, the Arcispedale approved the construction of the new structure, but only in 1907², a first general project was drawn up that involved the area between the Romito and Rifredi, east of the Terzolle torrent, consisting of ten small estates belonged to the Boutorline-Misciatelli family. It was then in 1912³ that the Ing. Italo Guidi, adopting the pavilions system established in the hospital building since the mid-nineteenth century, completed the regulatory plan of the future area, so that on March 24th of the same year, thanks to a donation from the Cassa di Risparmio di Firenze, the first stone of the Autonomous Section for Tuberculosis was placed previously Villa Ognissanti and current Meyer Pediatric Hospital.



Careggi, Surgical Clinic, old postcard traveled in 1943, Stabilimento grafico Cesare Capello Milan, De Cesaris's card collection



Careggi,, Medical Clinic, old postcard traveled in 1940, Cesare Mapello Milan, De Cesaris's card collection

Finally, the collaboration between the University and the Arcispedale began with the Convention stipulated in 1913⁴ to bring together the proposals concerning the new health facilities, which with the renewed agreements of 1933⁵ saw in these years its maximum development of building and organization. The plan included a clear division of the areas between Florence University and the Arcispedale di Santa Maria Nuova for the construction of university clinics and hospital pavilions. Planning followed new precepts: no longer a series of identical pavilions, but facilities purpose-built for specific branches of medicine. In the 1930s, competitions were announced for many of the buildings and others were completed. In 1930 Villa Medicea was purchased, thereby reuniting the properties that were to house the new hospital's administrative offices. It is interesting to note how the Careggi estate had kept its role and was an integral part of the economy of the hospital, this has happened until recent years.



*Old Careggi view with the Ophthalmology Clinic, old postcard Stabilimento grafico Cesare Capello
Milan, De Cesaris's card collection*



Careggi- la Fattoria (The farm), The convent of the Oblates, old postcard, De Cesaris' s card collection

The assistance to the sick was improved thanks to the establishment in 1931⁶ of a nursing school for nurses at Villa Pepi and then transferred in 1936⁷ to the ancient Careggi Tower of the *Oblate ospitaliere*, where a community of pious women totally dedicated since 1301 used to operate. They became nuns only in 1953. In 1935⁸ moreover, a new convent was built to house the Capuchin friars, who had been involved since the 1920s in religious and spiritual assistance to the sick in the Careggi area.

After the sale in 2007 to the Tuscany Region of the Villa Medicea and its heritage, the most interesting areas are: the convent of the Oblates, Villa Pepi and the convent of the Capuchin friars. This last collection, almost entirely from the Arcispedale of Santa Maria Nuova, includes masterpieces made from the mid-thirteenth century onwards by the most famous Tuscan and non-Tuscan artists (Giotto, Bernardo Daddi, Dello Delli, Jacopo del Sellaio, Giuliano da Sangallo etc ...); in addition to paintings and sculptures, it is made up of the most different types of movable goods, among which the sacred and profane furnishings, the goldsmiths and liturgical vestments deserve special mention.



Careggi, Convent of the Capuchin friars, old traveled postcard, Stab. Grafico Cesare Capello-Milan, Manetti's card collection

As for Villa Pepi, during the activity of the Professional Boarding School for Nursing, a large number of mobile goods of various types have converged here, built between the fifteenth and the twentieth centuries. Only a small part of them was born within the context of the School, for example, the drawings that the well-known Florentine illustrator Ezio Anichini published in 1937 on *Il libro dell'Infermiera* (The Book of the Nurse) edited by Carlo Bifulco. The most substantial part of the assets of the School, however, came from the *Arcispedale of Santa Maria Nuova*, to which belonged the fifteenth-century copy of the *Madonna dei candelabri* or the seventeenth-century paintings by Francesco Curradi, as well as many other works of sacred and profane subjects.

To not underestimate the rich patrimony of the Capuchin friars in the church of the rationalist era, like most of the contemporary collection consisting of works of art, fixed furniture, stained glass windows up to the sacred vestments that have remained intact to this day. It is however in the collection of the Oblates, today almost completely belonging to the AOUC, that the greatest number of works of historical-artistic value is preserved.

Among the numerous buildings that emerged in recent years, the General Surgery Pavilion, a spider-like structure started in 1932 and finished in the spring of 1934⁹, deserves special attention due to its planimetric structure: the original building has now been completely replaced.

The slowdown of all the activities marked by the Second World War was followed by the conclusion, also thanks to the compensation for the damages suffered, of some of the most important buildings in the area, including that of the Anatomical Institutes. Here are still the important museum collections of Anatomy, Pathological Anatomy and Legal Medicine, where anatomical and dried preparations,

scientific instruments, anatomical waxes, photographs, as well as ancient library and archival collections are kept. Still, in the late fifties and early sixties, the hospital area continued to expand: among the most significant structures, the *CTO Centro Traumatologico Ortopedico* (Orthopedic Traumatology Center) promoted by Prof. Scaglietti, designed by architect PL Spadolini and financed by INAIL, a very avant-garde building for the time, started in 1955 and finished in 1962.



Florence, Centro Traumatologico Ortopedico INAIL, old postcard traveled in 1966, Alterocca Terni, Manetti's card collection

Following the health reforms of the late seventies, in 1982¹⁰ the new hospital was built in Careggi, with all its assets, separated from Santa Maria Nuova, then became Azienda Ospedaliero-Universitaria Careggi (AOUC) in 2003.

In that occasion when the City Council approved the Unitary Plan, today still the plan (constantly updated), for modernizing the Careggi area, that the destiny of the new hospital was finally settled.

The Careggi hospital complex should remain and be completely renovated, rather than creating another one from scratch, as has happened in numerous other cases over the last few years. It was a key decision for the organization of the city. Work has been done and is still on-going, while all the hospital's healthcare and administrative activities have been unaffected and continue to function. The works underway throughout the area are designed to guarantee greater usability of new spaces over time. More specifically, two separate levels of service will be provided: on the one hand, accident & emergency and intensive care, and on the other, specialist medicine. To achieve this, services will be organized in concentric circles. The main aims of this latest plan are modernization,

a reduction in the number of beds and more people -friendly spaces, with a special focus on accessibility, sustainability, state - of - the - art technology and relations with green areas and the general context.



*Careggi, NIC (New Entrance Careggi), CSPE e Ipostudio Architetti Associati
2010, Beatrice Messeri's picture*

Between the 1990s and 2000s, new buildings were constructed, including the most emblematic N.I.C. Nuovo Ingresso Careggi (*New Entrance Careggi*), the trigeneration central and the redevelopment of many historic buildings e.g maternity and surgery, which thanks to the recent restructuring are home to a state-of-the-art emergency room, the *DEAS Dipartimento Emergenza ed Accettazione Sanitaria* (Emergency Department and Health Acceptance), which due to its central role in today's hospital activity has also become the site of a new Catholic cult chapel (Binini partners project), where it was possible to valorise two works belonging to the Oblate collection: the *Crucifix* of XVIII-XIX sec. and the *Adoration of the Child and God the Benedictory Father* of the workshop of Jacopo del Sellaio of the fifteenth century, not only was a new space dedicated to the other religious cults also used and therefore enhancing the existing mobile heritage.

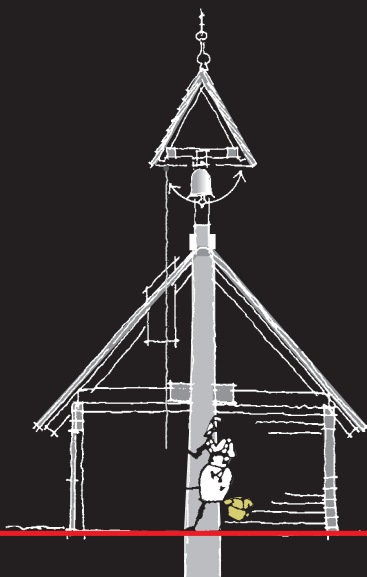
The project is still in existence and regional initiatives aimed at activating other cultural projects based on the *Oltre la cura* model have made it possible to raise awareness and rediscover an incredible Tuscan cultural heritage, an integral part of the cities, which has managed to interest and reach both citizenship and a wider public due to its importance and the peculiarity of its characteristics.

Exhibition of oldest visible records of the living world

Borut Juvanec have sent to CIAV Newsletter, an extremely interesting article about an exhibition of very ancient bell towers wooden constructions in Slovenia, a part of Austria and central part of Hungary.

CHART No.1

CHART No.2



borut juvanec

zvonice belfry, glockenturm, harangláb, zvonik

andreja benko

výstava, exhibition, razstava, ausstellung, kiállítás

Ljubljana University, Faculty of Architecture
Ljubljana

Institute of Vernacular Architecture, Ljubljana
ČVUT

Fakulta stavební v Praze



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the high patronage:
His Excellency Mr Leon Marc, ambassador of Slovenia in Prague

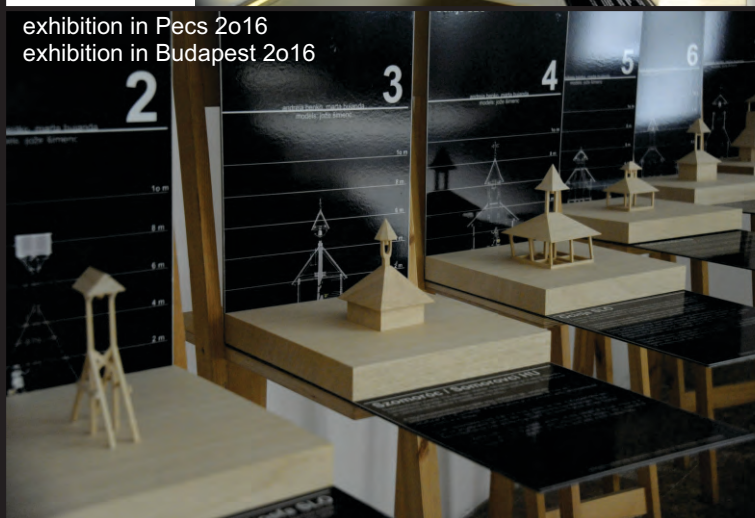
Marking is one of the oldest visible records of the living world. Signs give stress to a space: marking, guiding, reminding or honouring. They are two-dimensional reminders and spatial constructions and a belfry inserts a new dimension: sound.

The original belfries were constructions of wooden pillars, which raise the bell and enable maximum efficiency, audibility. Wooden belfries are simple, the pillars are supported by stays and they thus open the possibility of closure, which brings a new quality: an enclosed space. And it is illogical that a simple foundation of beams defines an octagonal and a more demanding basic construction a square.

Belfries in the northeast of Slovenia, a part of Austria and central part of Hungary typify mostly the Evangelical culture, as is confirmed by their modest construction. These belfries are not church architecture; they are village property managed by the owners of the land on which they stand. They marked morning and the completion of work, noon and evening. The setting up of village belfries independent of the church and managed by the laity in Pannonia is a unique phenomenon of the development of the primary form of society and the common life of the village community in this part of Europe. This is also the most important element, which unify Slovenia, Austria and Hungary.



exhibition in Pecs 2016
exhibition in Budapest 2016



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andreja@ymail.com



belfry holzglockenturm zvonik
145 objects in inventarization (2018):

89 HU, 38 SI, 14 AT



ver. 1806

Institute of Vernacular Architecture Ljubljana

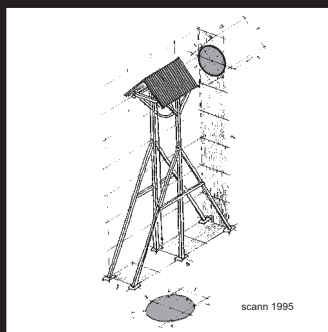
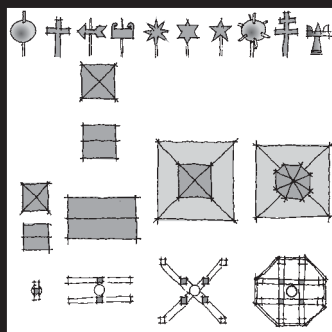
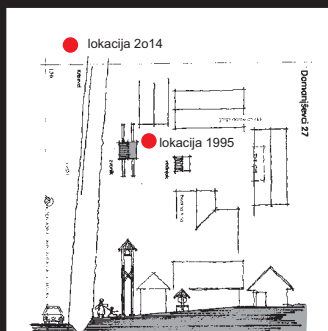
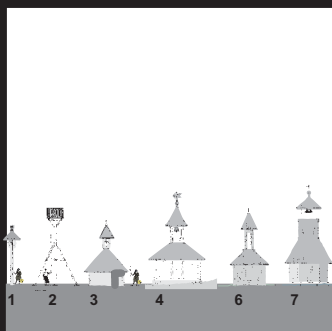
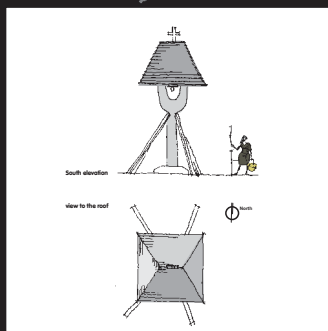
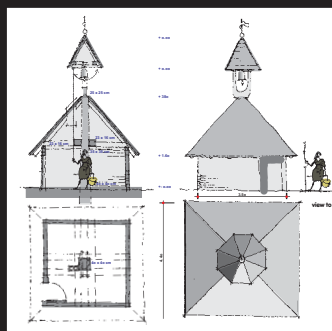
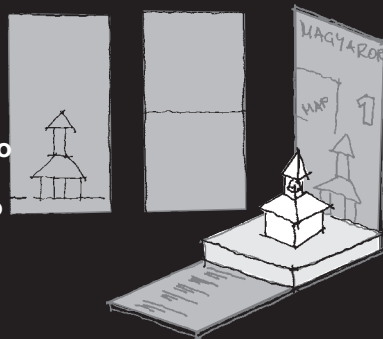
EXHIBITION

contents:

8 models 1:50
15 techn. plans 50x50
65 photos 50x50
in total 80 plates 50x100
and 16 plates 30x60
15 photos details 10x10

text in :

HU / SLO / GER / ENG



Szentgotthard / Monošter HU 2015 - Pecs 2016



Budapest 2016



Novi Sad 2017

Borut Juvanec

Professor, PhD, architect on Ljubljana University. His main fields are theory of architecture, origins, and vernacular architecture. Author of 15 books on vernacular architecture, and scientific articles wide the world. Member of ISIS – Symmetry Melbourne, CIAV Paris, ARTE Caceres, Pedra seca Barcelona, ICOMOS (expert member of International scientific Committee for Vernacular Architecture) Paris.

Andreja Benko

PhD, architect, she studied at Faculty of Architecture in Ljubljana (2001-2008). In the years 2005, 2006 and 2010 she studied at with a scholarship of Dr. Otto and Karla Likar Foundation. Between 2011 and 2015 she was young researcher in University of Ljubljana. In 2013 she visited the University of Technology and Economics of Budapest. Since 2008 she works, with focus on single-family houses and hotel design. As researcher, she is mainly dealing with the responsibility during the whole construction process and with the architectural heritage. Her work was published in several scientific and professional magazines in Europe.

the bell in Szentpéterföldre HU, working
Felsőszenterzsébet HU



KOZOLEC (Hayrack)

Borut Juvanec is a distinguished member of CIAV ICOMOS which have been very enthusiastic collaborator of the works undertaken by our International Committee of Vernacular Architecture.

Kozolec is a permanent, freestanding, vertical, predominantly wooden, open and covered object for drying and for storage.

It is an optimal combination of natural possibilities and the needs of man. Natural possibilities here refer primarily to the environment and the materials available to man and which he masters, works; and man's capacity to use and combine all these possibilities. Man's needs are for survival. This means being able to preserve things for the entire year.

The word 'kozolec' is used as singular, and 'kozolci' is plural.

A kozolec at one time provided mankind with bread, today it ensures food for livestock.

The form and type of kozolec depend on all the aforementioned possibilities and needs: in hilly parts, kozolci are smaller, dispersed, in wetter places they are more protected than elsewhere, on plains they are elongated, far from the farm they have additional protection from sudden showers. Close to the house they are larger, double, with space for a wagon and for tools.

The single elongated kozolec is found from North (Austrian and Italian borders) right across Slovenia to the South and the border with Croatia. At the beginning, they are smaller, in wide plains extremely long, as many as ten or twelve "windows" or bays. There is often a lean-to 'apron' (birtah) as protection for a wagon and people against sudden showers.

Two elongated, interconnected and so more stable kozolci are characteristic of the edge of Ljubljansko barje.

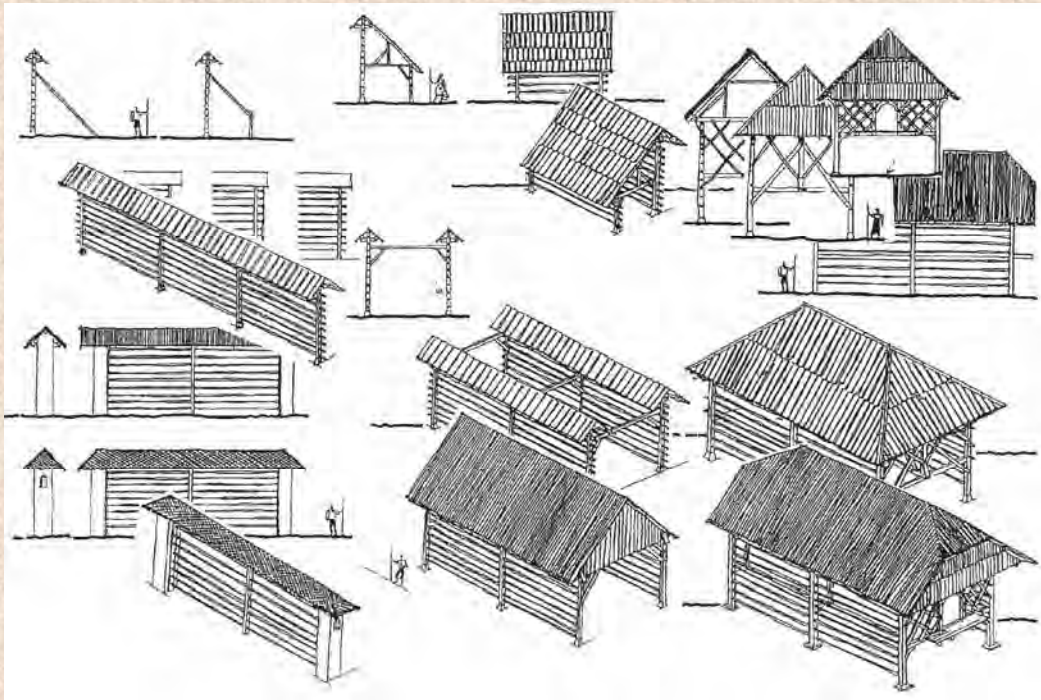
The most important is 'double kozolec/hayrack', which can be more than 8 meters high and 40 meters long.

There are two types of double kozolec: above the Sava river and below it. They are distinguished primarily by the mass of the gable, the elements are identical. The construction of such a kozolec consists of uprights with horizontals and a roof: transverse bracing is provided in the gable with a "transom" and longitudinal bracing is provided by the core, which can be flat or three-dimensional.

The first, flat execution is called "in a single tree" and the three-dimensional "in two trees", exceptionally 'in three'. While the stretched kozolec is flat construction, double kozolec is a real 'building', a 'barn'.

A kozolec in two trees is of course more functional, since it has more protected space in the interior. The roofs also differ: from a normal gable roof with an open gable, with a closed gable, to a hipped roof (generally with a closed gable) or a broach roof, which appears to be the oldest execution. In the Alps, where it tends to rain, kozolci are also fitted with additional roof spaces, which protect individual exposed elements. In some places kozolci also have an extension in the form of a single elongation, called a "tail"; there are sometimes two tails, which can be connected. Below the Sava river, stockier kozolci are more usual, which generally have "two trees", a loading platform and a more elaborate gable. The loading platform may be fenced, it may be open or simply without side protection. Steps or a ladder are normally integral parts and the gable is generally more closed, with dense crosspieces or with boards. The most recent kozolci are normally a bit more decorated but only in the planks of the cladding and not on the construction parts. Kozolec is typical carpenter construction, made of hand trimmed logs, of course in rectangle beams.

prof dr Borut Juvanec
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p 01: Types of 'kozolec', from the stretched one to the double.

The form of elongated kozolec with masonry pillars can be found in West and in the North only.

A kozolec with a lean-to is called 'na kozla' (goat) or 'na psa' (dog) by analogy of the shape (direction of the back, fall of the roof).

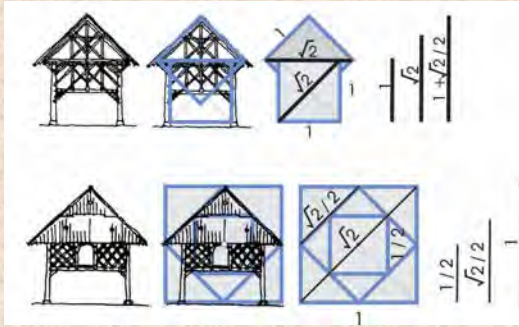
In the Alps, kozolci with one or two 'trees' (they are also found with three 'trees'), normally have a gable roof without hips: exceptionally there are broach roofs in Studor (near the Bohinj lake). The gable can be open or closed: the more recent ones are normally closed.

The material for covering is wood in the Alps: shingles, or later boards (also large shingles, they are composed with an overlap on two levels like boards) but in Northeast the shingles are smaller and composed in two rows at an angle: kozolci also always have a hip and open gable. Thatch is also often used, though later tiles. The edges of thatched roofs are not generally decoratively braided as with the houses, and the ridge is never braided.

Towards West, because of the Adriatic sea, kozolci have masonry pillars, a hipped roof and closed gable, sometimes the boards extend to the middle of the horizontal crosspiece, at the back often right to the ground. The roof material is ever more often stone: normally rhomboid slates. In Italy, but in the ethnic area of Slovenes, kozolci can be found covered with barrel tiles, so they also have a gentler inclination.

The southern kozolec, found below the Sava river is stocky, generally a hipped roof overhangs the closed gable. This is closed with boards which are often cut in real patterns and, similarly, fences from slats. The gable is almost always on a number of levels, which enables ventilation with the maximum possible protection from rainfall: the artistic stress of such an execution is also particularly important, although the stress is in the construction.

The economical execution (after the First World War) of a low kozolec extends east of Ljubljana, beside the Sava river only. They are almost never decorated, merely 'functional'.



p 02: Kozolec and the square root of two. The height of the kozolec between the foundations and the tie beam is the same as the width between the pillars. The diagonal of this square is the distance within the construction between the eaves, and the side of the square is the same as the construction of the roof (not the roof material, its construction). Within this square (below and above) run other elements that use increase and decrease by the square root of two, so that a kozolec has only two measurements: 'one' and half the 'square root of two'. The height is composed of the measurement 'one' and half the 'square root of two' but this is only a few percentage less than the 'square root of three'. Essentially this does not make the composition more demanding, it simplifies it. The result is exceptional harmony and simplicity, or put more simply: beauty (Juvanec 2007).

Kozolci stand outside the Slovene borders today – but still within the framework of the ethnic boundary – mainly on the both sides of the border Slovenia / Italy, where they are rarely covered with thatch; more usually they have a more gently inclined barrel tile roof. In the Zilje/Gail valley and on the fringes of Tyrolia (but not far from the Slovene ethnic boundary, and at the ancient ways to religious and tax centres), they are very slender, extremely thin in the construction and with gently sloping roof, also of wood.

According to sources, there are devices for drying, similar to a kozolec, in Switzerland (Graubünden), single elongated and much higher than ours. There are no kozolci elsewhere: there are similar devices for drying – but not for storage – in Sweden, but the slender construction does not allow permanent use. They are not kozolci. Elsewhere in the world, devices for drying, although similar to ours, do not generally have a roof. They are not meant for permanent use and are erected according to need: so by definition not a kozolec.

In design terms, the gable is most important in a kozolec: with rare exceptions there are two executions: slender above the Sava and stocky below it.

The point is use of a square and its diagonal.

The stocky execution is outlined in a square: the diagonal from half the side to the other half is $1/\sqrt{2}$; key points rest on a network that can be characterised thus:

$$1/\sqrt{2} \quad 1 \quad \sqrt{2} \quad 2 \quad 2\sqrt{2} \quad \dots \quad f1$$

The slender execution uses only three measurements:

$$1, \sqrt{2}, \sqrt{3} \quad f2$$

and the root of three can be simplified:

$$\sqrt{3} = 1 + \sqrt{2}/2 \quad f3$$

The error is only a few percent or a little more and the construction is simplified to the utmost.

Another type, stocky, are drawn as a square into the square. Principle is the same and the row of numbers appears increasingly as

$$1, \sqrt{2}, 2, 2\sqrt{2} \dots \quad f4$$

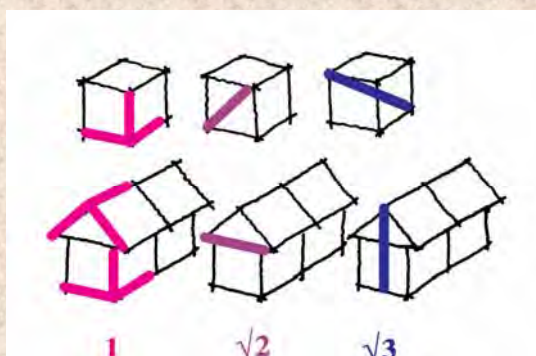
and decreasingly as

$$1, 1/\sqrt{2} \quad f5$$

where $1/\sqrt{2}$ is the same as $\sqrt{2}/2$

It is very important data that the square, composing the cube, is equal to '1'. Consequently are diagonals, concerning the Pythagoras theorem, as follows:

diagonal of the square =	$\sqrt{2}$	f 6
diagonal of the cube =	$\sqrt{3}$	f 7



p 03: A kozolec and its system of proportion: the use of only three lengths (one, the root of two and the root of three) simplifies the composition and reduces the possibility of mistakes (Juvanec 2007).

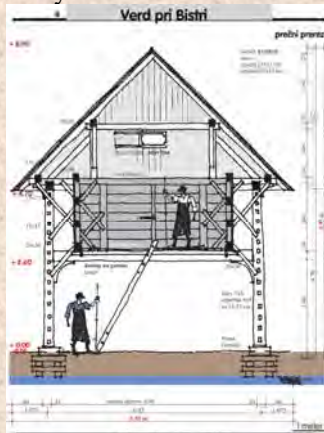
All three of these measurements are primary elements of a cube: side, diagonal of a square and the three-dimensional diagonal of a cube. Order in this case means simplification, without a theoretical knowledge of mathematics and proportion, building without plans, with rough, simple (carpentry) tools: a measuring tape, a right angle, a spike (for the centre for drawing a circle) and string (for the arc). Proof of this is the fact that no two kozolci are the same and that there are almost no 'incorrect', deformed kozolci.

The order that appears in a kozolec enables essential simplification in erection, since the measurements of the gable, when interpreted in the field (carpentry practice) are already the starting point for further erection.

Insertion of the core as longitudinal braces is merely routine.

The kozolec is the only ethnic architecture known (May 2010:66). The design of space normally conforms to the environment, the needs and possibilities of the user and, of course, depends on the capacities of the builder. Architecture is therefore not building. Not that it wants to be worth more: it is just more complex.

A kozolec, therefore, irrespective of whether it was created within the space of a single nation or has only been retained within that space is a characteristic of the Slovenes and stands and functions within the framework of the ethnic boundary. The ethnic boundary of the Slovenes once stretched much further to the north and west than the borders of Slovenia today.



p 04: Documentation consists of groundplan, cross sections, elevations and details, with GPS data with a map, as well as with a text (Documentation: B. Juvanec 1995).

A kozolec is a typical functional object: the simplest serves mainly for drying, more demanding executions for storage. The Slovene farmer valued the kozolec because of its role in providing sustenance: so it is not just a functional device - its construction has extremely powerful artistic qualities; whether this is the construction itself or its dressing, the wooden cladding of the gable (the first the transom in totality and in detail, the crosspieces, entrance and other wooden cladding of the gable and the fence of the loading platform).

A kozolec is erected in a proportion that man most easily masters: with increase of the square root of two. Poor knowledge of mathematics is no obstacle in this: with a simple grasp of a single equilateral triangle, which creates a square (and thus draws, outlines a circle and a square), the erection of kozolec is simplified to the maximum possible extent.

The technology of the combine has dispossessed the kozolec of cereals; silos and vacuum packing have taken over fodder. Silos do not replace in the sense of quality. The kozolec still functions: that is essential.



p 05: Four examples: stretched kozolec and three double kozolci. The first double is the slim object from the Alps; kozolec with columns, built in stone from West; and finally kozolec from the South of Slovenia.

Man erected the kozolec, the centuries dressed it: functionally, constructionally, in terms of design. These three elements, which compose architecture as the design of space, are in this case developed to the full. So the kozolec is not just a functional, technical and aesthetic device; the kozolec is a cultural category of human work; it is thus complete architecture and the most important vernacular architecture of Slovenia.

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* * * * *

Yours sincerely,

Paulo B. Lourenco

Course Coordinator

Editor of the International Journal of Architectural Heritage: Conservation, Analysis, and Restoration

Energy efficiency in vernacular and traditional buildings



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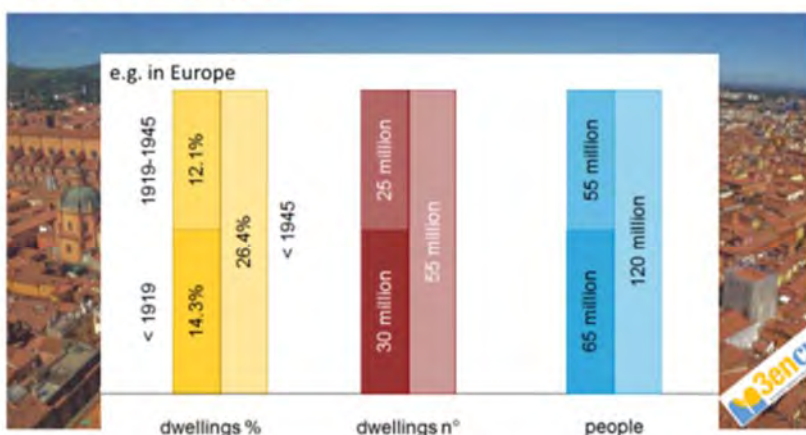
July 2018

With the international drive to reduce the world's carbon footprint, CO² emissions, primary energy produced by fossil fuels and the advent of Nzeb (Near Zero Energy Buildings) much pressure is going to come on our vernacular and traditional buildings. The United Nations Sustainable Development Goals (SDGs) as it gains traction across the globe will bring added pressure on our older and existing building stock.

We as a race, national and international communities and in particular the professional heritage sector need to embrace this concept whilst being cognisant of the importance of protecting our built heritage and understanding the challenges that these initiatives may bring.

In the 28 Countries of Europe there are over 55 million dwellings built prior to 1945, this represents an average of 28% of our built housing stock, add in government buildings, educational buildings and early industrial buildings we get to close to 50% of our built environment – all pre-1945 – mostly vernacular and/or traditionally built. This is a serious proportion of the heritage sector and all of the above needs to be energy retro-fitted to improve their energy efficiency, reduce nations demand on fossil fuel, greatly reduce green house gas emissions and the sympathetic and correct energy upgrade will help many nations meet the targets and commitments of the Paris Agreement.

There is a need



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How do ensure the right course of action?

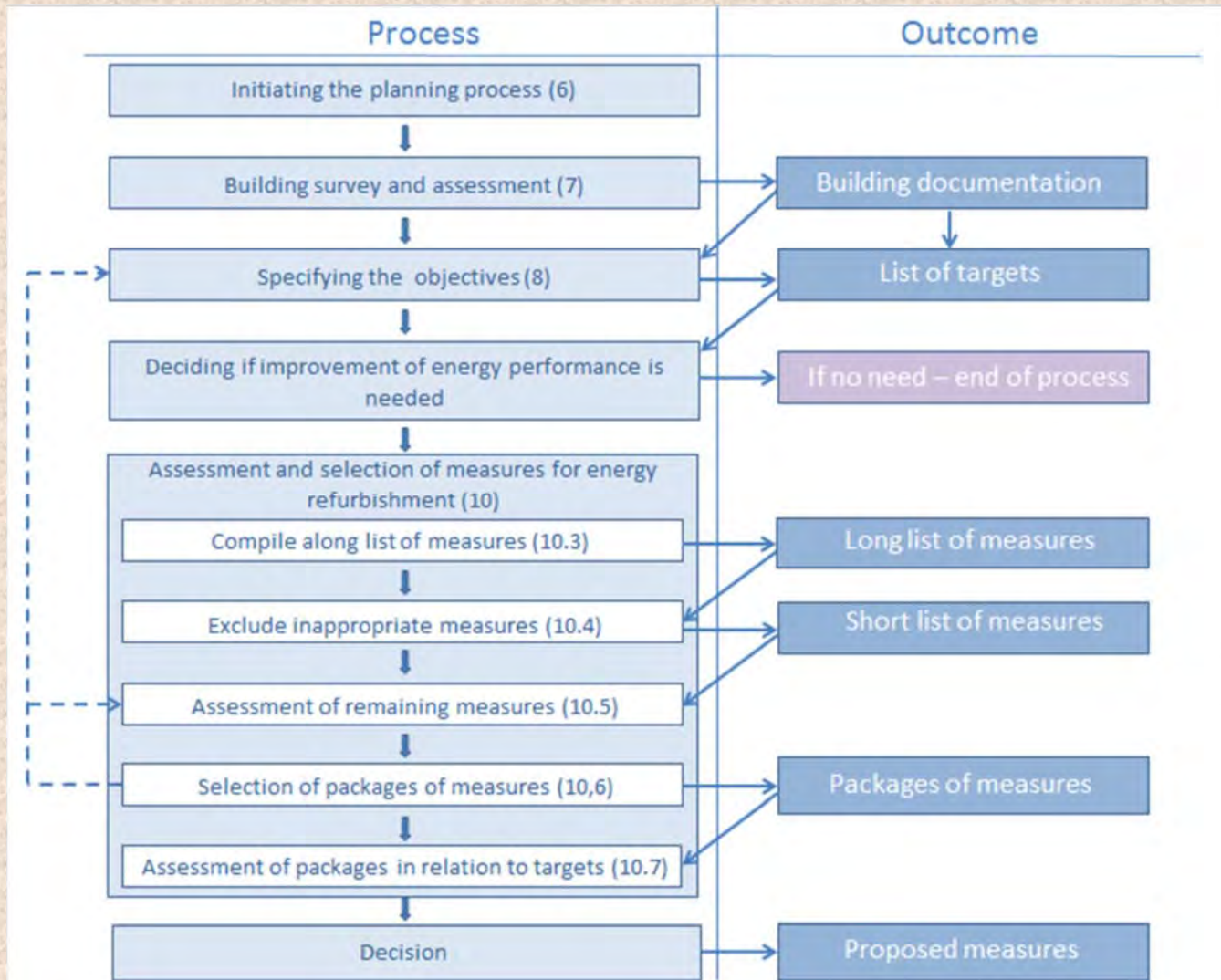
All of the above-mentioned buildings can be deemed breathable and of single leaf construction although a few may have early cavity wall construction with no insulation. All will have varying degrees of U Value, be in a wide range of condition and many would automatically be disregarded or worse still smothered in external unbreathable insulation which will result in the building being unsuitable for habitation in a very short period. Much research has and is being carried out in this sector, there is a brand new European Standard and there are some excellent examples of best practice but very few owners, professionals and/or planners know how to deal with implementing best practice in this sector.

Primary Aim

The ISCES+CC and its mirror NSCES+CC's intend to go on the offensive in training, upskilling and educating all – other ISC's such as CIAV, ISC20C, CIVVIH, ISCARAGH, ISCEAH, CIF, CIPA, ISCSBH, PRERICO and many more can assist in spreading the word and creating a positive movement to inform all of how to approach Best practice when considering the energy upgrade of a vernacular or traditional building. ISC's and NSC's should come together to organise joint conferences, skills training, technical papers and Continual Professional Development Courses (CPDs) in the "Energy Efficiency Retro-Fit of Vernacular & Traditional Buildings".

Simple Facts

The simple facts are that when dealing with a breathable building one must consider breathable materials and one of the most important factors is to fully allow moisture to move freely and not entrap moisture anywhere within the envelope – if you entrap moisture one creates a haven for mould, mildew and other organic growths to thrive and cause major health issues for the occupants whilst destroying the original fabric and creating failure of a serious scale.



The chart above is from the new standard on “Guidelines to Energy Efficiency in Heritage Buildings” EN 16833 – 2017 which shows the procedure that should be followed in knowing your building, understanding your building and knowing what you want to achieve and how best to achieve it.

Breathable Materials

There has been and there still is much work being carried out on developing new materials suitable for Vernacular and Traditional buildings and here are some suggestions;

- Maintain you building envelope – this will reduce the moisture retained and make your solid wall construction perform much better than expected.
- Maintain water management systems.
- If insulating, choose a breathable product such as Wood Fibre Board.
- If using an internal lining use Calcium Board instead of Plasterboard.
- Use Wood fibre board in the attic or roof too.
- If you must use a water vapour barrier use a breathable one.
- If re-rendering or re-plastering use lime with a hemp additive, this can improve the U Value by as much as 30% in certain circumstances.
- Insulate floors again with Wood Fibre Board.
- Aerogel Blanket is a phenomenal product but expensive.
- Often windows are best upgraded rather than replaced, new seals can also help.

One thing science and research has proven over the last number of years is that vernacular and traditional buildings perform naturally much better than envisaged and often modelling is wrong and therefore recommends over specification and often inappropriate interventions.

Peter Cox

President ISCES+CC