precise look on plans could expose open fire places, communal rooms and some private rooms. We could set a hypothesis that houses were built not for single persons but for families or some kind of community. Narrow streets in-between the houses with one square at the entrance expose that this community had restricted access or exit of the settlement. Here the idea is the opposite: controlling the community. Narrow streets are helpful for controlling the traffic of people on the streets; they could reduce the speed of moving the people. Those are the benefits for security.
The general question is: house units provide a quality of life with fire places and streets are provide quality of mass controlling for the ruler. This is some kind of 'must to do' symbiosis.
In Austro-Hungarian Monarchy those working settlements were organized the same as described before. This formula helped both groups: the owners and the workers. In terms of economy this could be named: win - win combination. Here the story of architecture and spatial organization starts.

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Borut Juvanec
LES GLACIERES DE SLOVENIE
La foire de la glace
Musee archeologic de Le Van,
Mazaugues, Marseilles, February 2013

Historical background of the ice houses is well known from the 3rd Millennium BC. The oldest objects can be found in Iran, made of the stone and clay in circular shape of stepped cone.Water is the main material for maintaining the proper temperature: it has three aggregations – water, steam and ice.
Needs for chilling the goods and producing ice are close connected to the life of mankind: low temperature lasts the food quality, and the quick cooling stops deterioration of the milk. On the other hand, ice can be used for cooling itself as well as for direct use, icecream for instant or frape. Icecream is not the invention of our days.
Appearance of ice houses can be found in the natural underground caves, and as built objects, using the air streams, fresh water, or isolation facilities of the ground materials for retardation of losing temperature. Economy of the ice production can be: for individual use, as craftmanship and for industrial use.
Function of the ice house is keeping the cool air inside: but the basic activity for this is collecting the ice. It can be gathered in free nature, collected with the sort of funnels, in the basins nearby, from the far ponds, or can be 'produced' with beating the snow.
Objects for ice houses are built almost under the ground: some of them can be seen as the roof only, or as the monument (the pyramide, for instance). Elements of the objects are as follows: roof, body (sunk into the ground), entrances and outbuildings (as basins, ponds, canals). Ice house can be build in stone, with elements in wood, but smaller objects can be found almost in stone. Stone constructions are made mostly in dry stone walling system, with corbelling or they are vaulted, roofed with straw or reed (leaves), clay tiles or stone plates.
Architecture of ice houses can be several, especially their elevations outside, with characteristics of the environment, and in local materials (slopy thached roofs, almost flat roofs in stone plates, circular shapes or leaned to the hill or to other objects). The simplest objects are real cylinders with spyral staircases down to the bottom, but professional built objects have the bodies narrower at the bottom, are made of double walls, with airation and straining canals, corbelled balkonies and sofisticated transport gears for digging out the ice.
Examples of ice houses: Spain, France, Switzerland, Italy, Slovenia. Informative material consists sketches, plans, photos and reconstructions of some typical ice houses.
Instalation into the environment shows all the possibilities: ice house could be hidden, deep under the fortress (Monza), leaned to the house, in distance from the homestead – but on the sight control, or far at the source of the ice, high on the mountains. Location depends of the source, and of the traffic possibilities (roads, paths: rack waggons, mules), but distance depends on reach to the final user.
The names of ice houses depend on locations, languages, local slangs. They are based on the words for snow and ice: neve (neviere in Castillian, also in Italian), ghiaccio, led (ghiacciaia Italian, ledenica Slovene), or the well (pou de sa neu Catalonian), ice and eis (ice house in English, eishaus in German), cellar (eiskeller German, ijskelder in Dutch).
Situation today shows all the possibilities of the state, age and the use: original state, destroyed or ruined, use as the cellar (the closest use to the origin), renovation and restauration, use as cultural object (museum), or just as the memory only (In Hungary there are a lot of guesthouses named as 'jegverem', ice houses). This is just understood: the roof collapsed in time, and the hole is dangerous: filling up is the simplest possibility to avoid the risks.
Bibliography of ice houses is pretty rich, but very rare shows the system and comparison between several solutions in function, materials, construction and in shape.
Ice house as an architectural object is undoubtedly very interesting object, built in local materials, in local styles, full of individual contribution of the builders, but every time in the most usable mode. Today is out of use, it is only the reminder of our past, but because of its rich culture would be preserved for next generations.

Borut Juvanec
TWO SQUARES AND ONE KOZOLEC
ISIS Congress
BJ member of ISIS Congress Scientific Committee
Hersonisos, Crete Grčija, September 2013

A kozolec (plural kozolci: unproper translation into English is 'hayrack' – because the original use of kozolec was drying and storing cereals or corn, only in the last years it is hay) is a free-standing, open, wooden and always covered device for drying and storage. While wheat was formerly stored and dried in it, it is now

only used for hay and other products, such as corn and maize straw.
Kozolec is the most typical Slovene architecture, the only ethnic architecture that I know. It stands in all the Slovene ethnical teritory, except on the Karst and in Pannonian plain.
In central Slovenia and above all in Gorenjska, there are most elongated kozolci - around Škofja Loka, they can even be as long as 24 bays. While a low kozolec is the most recent form, the double kozolec is the most characteristic, with the most derivatives in its design (Juvanec, B 2007:45). There are thus two types of double kozolec: those above the river Sava and those below. Those above are slender, below are stocky.
A double kozolec is a composition of two gables and at least one internal bay. The gables have braces, a relatively dense pattern of crossing beams, which primarily resist the wind, prevent the contents from falling out and, with their depth, create shade, which maintains as constant a temperature as possible, which is very necessary for both wheat and hay.
The essence of the erection of a kozolec is that it is longitudinal to the wind and transverse to the sun's rays.
The roof of a kozolec is always symmetrical, always at an inclination of one to one or 45 degrees, almost everywhere – except with new, small kozolci – it is hipped. The hip derives from the thatched roof, by which the problem of wind in the gable is solved. Sadly, there have long been no more thatched roofs.
The most important element of construction of a kozolec is bound to a square and its diagonal. Insofar as the sides of a square equal one, its diagonal is the square root of two. The proportion system, used in a kozolec, shows two squares: the slender one has two squares, one above another, and the stocky one has one square into another. We learn this in primary school and it may seem too much learned. With a kozolec it is essential: it simplifies construction and, with simplicity, prevents possible mistakes. The angle created, 45 degrees, is also essential in details (Juvanec,B 2007:67), since the construction principle of a kozolec is in the cutting the circular trunk of a tree, and beams mainly have a square profile.
A kozolec is today too big, too clumsy and too expensive. But, it represents our culture, which developed over many centuries and always in the order by which it was received with heritage. Not by recipe: each master added something of his own, but within the framework of rules created by nature, by the materials, by need. So all kozolci in Slovenia are uniform but no two are identical. A kozolec is a monument to the culture of our nation and it is today still in use.

Borut Juvanec
THE STONE ARCHITECTURE IN CORBELLING: SYSTEM OF DOCUMENTATION
VERSUS Congress, Restapia, Mediterra
ICOMOS CIAV
Cerveira, Portugalska, October 2013

Threatened dry stone walling system exists as the origin of architecture, in its simplest construction. The first aim was sheltering mankind. Corbelling means construction without cement, in layers, with overhangs, for some ten metres high compositions . The wall consists of constructional layer, the frame and filling inbetween.

Theese constructions serve as: tomb (nawamis Synai, naveta Minorca), storing for the tools, herdmen's shelter, stalls for livestock, transhumance architecture (Extremadura), temple (Hal Saflieni Malta, Gallarus Oratory Ireland), treasury (Atreus treasury in Micene), control (mantarah Palestine, weinbergshaeuschen Germany, vrtujak Croatia), storing (tazota Morocco, paghliaia Apulia), drying (fiskbirgi Iceland), chilling (crot or scele CH, giazera I), icehouse (nevera Spain, France, Italy, Switzerland, Germany, Great Britain, Slovenia), information transfer (nuraghe Sardinia), palace (Deir el Bahri Egypt) and waterwell (Sardinia, with the miracle – Sant'Anastasia).
Construction is always the same – corbelling, but the several shapes occur, with different details. The main typics is use of square root of three, divided by two. It is composed of three sticks: height of equilateral triangle is by Pythagoras v3/2. This can be used for restoration of collapsed monuments, constructed in corbelling.
The proposed CIAV project consists of inventarization, documentation, comparison, evaluation, with propositions for the use today. It opens the doors for all the collaborators, to improve the matter and to open – on scientific way – this rich heritage in stone to the public in all the media.
There is an extensive but isolated worldwide research in vernacular architecture (M. Correia). Ljubljana University has work in different cooperation projects with municipalities and local communities, both in Slovenia, Italy, Croatia, Bosnia, Austria, Great Britain, and in some research project of EU.
The Conference ALPS ADRIA on Vernacular Architecture has been organized for 12 years.
The accomplished results during the last tens of years shows important relevance in connecting traditional methods with technological innovations in computing presentations (some thousands of documentation files in FA).
Surveying methods in researches on UL FA reflect good results in publishing (articles, books), in education (lectures, workshops, restoration works) and in science. FA researcher's works had been translated into 12 languages and published in 23 countries.
Dry stone walling system and its constructions in corbelling represent the origins of architecture, concerning vernacular heritage. Its contribution to knowledge intends to establish synergies and consistent strategies for disclosure, documentation, evaluation and appreciation of vernacular architecture in the world. It is especially important for the CIAV, and would be highly appreciated for the whole UNESCO mission.