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Why Are You Not Using Computers? A Case for Drawing Vernacular Architecture by Hand

¿Por qué no utilizas ordenadores? Un argumento para dibujar a mano la arquitectura vernácula

Porque é que não utiliza computadores? Um motivo para desenhar Arquitectura Vernacular à mão

Abstract | **Resumen** | **Resumo**

In the increasingly digitized profession of architecture, opportunities to draw by hand decline constantly. The thorough shift from traditional to digital tools is rarely questioned and commonly justified by the demands of the trade. Cognitive, pedagogic and economic values of traditional documentation methods are easily overlooked, while the craft of hand drawing is under increasing threat of extinction. Taking part in vernacular heritage documentation adventures from China and eastern Serbia to Thailand and northern Pakistan, I witnessed how humble pencils and inking pens enrich human lives. These experiences have transformed me and expanded my own view of the world.

En la cada vez más digitalizada profesión de arquitecto, las oportunidades de dibujar a mano son cada vez más escasas. El cambio profundo de las herramientas tradicionales a las digitales rara vez se cuestiona y normalmente se justifica por las exigencias del oficio. Los valores cognitivos, pedagógicos y económicos de los métodos de documentación tradicionales se pasan por alto fácilmente, mientras que el oficio del dibujo manual está cada vez más amenazado de extinción. Por mi participación en aventuras para documentar el patrimonio vernáculo, desde China y el este de Serbia hasta Tailandia y el norte de Pakistán, he podido comprobar que unos humildes lápices y plumas pueden enriquecer las vidas humanas. Estas experiencias me han cambiado y han ampliado mi visión del mundo.

Na profissão cada vez mais digitalizada da arquitectura, as oportunidades de desenhar à mão diminuem constantemente. A passagem completa das ferramentas tradicionais para as digitais é raramente questionada, e é geralmente justificada pelas exigências do ofício. Os valores cognitivos, pedagógicos e económicos dos métodos tradicionais de documentação são facilmente ignorados, enquanto que a arte do desenho à mão está sob a ameaça crescente de extinção. Tendo participado em aventuras de documentação do património vernacular da China e Sérvia oriental à Tailândia e norte do Paquistão, testemunhei como lápis e canetas humildes enriquecem as vidas humanas. Estas experiências transformaram-me e expandiram a minha própria visão do mundo.

It will be difficult to measure and draw the terracotta dragons that adorn a Pingyao rooftop above me. What year is it? What century? The only giveaway is a muffled beep of the cell phone in my pocket: I sent out some photos of my hand-drawn section from this ancient Chinese town and a friend responds: "One question, why are you not using computers?"

I belong to the generation that was required to draw by hand in the first years of architecture studio, before being torpedoed towards the new and exciting digital tools. Computer generated models and drawings quickly became so pervasive and matter-of-fact that it took me over a decade after graduation to really reconsider the implications of this profound switch. Today I use both digital and analogue methods in my design and conservation work. However, only the latter bring up questions from my colleagues and laypeople alike.

Rooftop dragons, Lei Lv Tai Mansion, Pingyao, China

Documentation of a wine cellar near Štubik, Serbia (Kristina Krkobabić)

I started questioning my own routine reliance on digital technology soon after I first engaged in conservation of architectural heritage. In 2013 I took part in a Regional Restoration Camp (RRC), organized by Cultural Heritage without Borders and the Institute for the Protection of Cultural Monuments of Serbia. Shortly after this training in traditional construction techniques I joined the Institute's team that sought to complete the documentation of three Serbian vernacular sites.

For weeks at a time, we used simple measuring instruments and drew scale plans, sections and elevations in pencil, on our plastic A3 boards. Hand drawings from these documentation campaigns mostly ended up being redrawn in digital form, to create a basis for conservation projects of individual buildings. To my dismay, these meticulous and lively field sketches were never destined to become anything more than a modest intermediate step in the larger conservation process. Though disappointed, I could understand the reasoning: the Institute had limited documentation equipment available, so drawing by hand in the field was not always a choice. However, once we returned from the field to the office, we needed to switch back to digital tools in order to produce the commonly required graphic documentation.

And back to the computer screens we went. Having spent the time in the field, however, climbing the roofs with not much more than a measuring tape and a plumb bob meant that I could still easily visualize every bit of the buildings I had documented.

This was by no means some magic trick or a sign of extraordinary memorizing capacity. Simply put, to measure a building with basic tools one has to come close to it. This physical proximity to the documented structure allows for a profound understanding of scale, because spatial elements are understood in relation to one's own body. Also, to measure a beam section with a measuring tape, one typically needs to touch the said beam. This, too, provides tactile information which is memorized better and impossible to collect digitally at a distance. The resulting complex understanding of space, both tactile and intellectual, proved absolutely invaluable in planning the conservation works. Taking the time to physically approach the measured elements and then draw them by hand allowed for a palpable understanding of the recorded buildings – a quality impossible to attain from a digital scan.

I was certainly aware that within a few minutes, a laser scanner could have given me the exact position of every single speck of dust on any chosen wall surface. But this information, while exhaustive, would hardly be of any use in helping me understand the forest of a vernacular roof structure or any actual assembly.

In the light of these insights, it was clear to me that the process of hand measuring and drawing had unexpected value in conservation of vernacular buildings – but I resignedly accepted that the actual field drawings, while beautiful, could only be a stepping stone to the final digital drawing set.

Unsurprisingly, I was thrilled when after a few years I discovered VERNADOC, a field-based method that indisputably elevated hand drawings into an art. The acronym stands for "Vernacular Documentation"; it is a recording and presentation process which emphasizes data collection on site by using basic, low-tech tools to produce high quality, inked, hand-drawings (Sananwai 2013: 3).

VERNADOC origins are more than a hundred years old, reaching back to a tradition of documenting historic buildings established in the 1880s at the Helsinki University of Technology (today Aalto University). In the 1990s, Markku Mattila, a Finnish architect and brilliant pedagogue, distilled this drawing tradition down to a series of discrete steps that could be quickly taught. For several years he has taken his architecture students to sites in Russia and Finland where they meticulously recorded traditional buildings. For one week they would take measurements and draw directly on just one piece of cardstock, "without any notes in-between" (Mattila 2011: 92). The second week of the camp would be dedicated to inking.

Mattila's idea, and that of his predecessors, was not just to teach the students how to draw more effectively, but rather to show them how to take care of the rich vernacular heritage "by using their very basic professional skills and showing their respect" (Mattila 2013: 8). VERNADOC camps became increasingly international after 2005, and have since been organized all across the world, in large part thanks to the endless enthusiasm of dr Sudjit S. Sananwai from Thailand.

Evidently, I was immediately mesmerized by VERNADOC drawings, but it took another two years before I could take the time to actually learn the method.

East view of the Luang Amnach Nararaksha Mansion, Phuket, Thailand

The elevation drawing from my first VERNADOC camp truly tested my limits, both professional and personal. I already had a lot of skill in collecting data using only basic tools, and I was quite confident the measurement week would go without major issues. And it did. But the inking week humbled me.

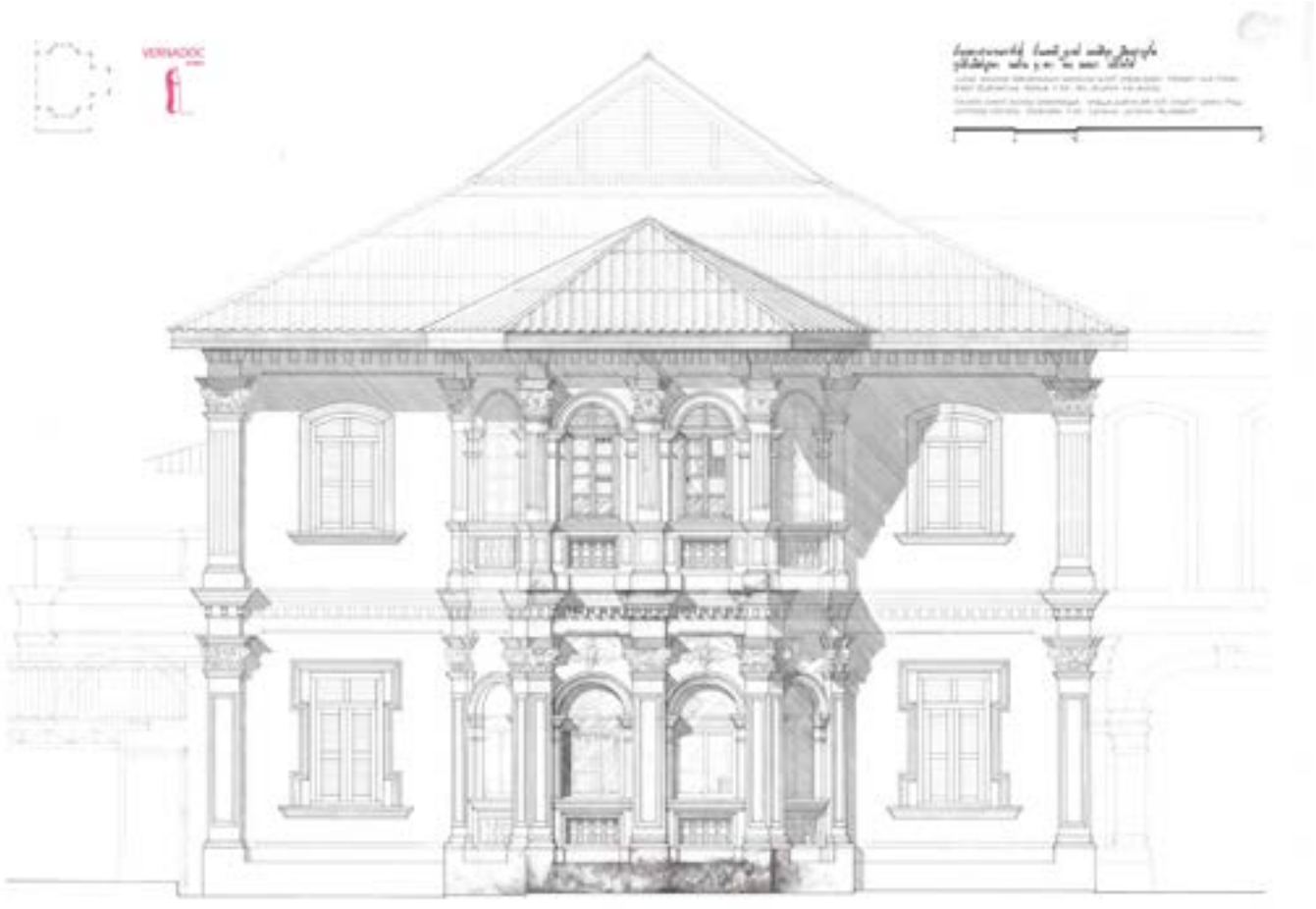
This second part of the camp was the real trial, not just of my rapidograph handling skills but also of my patience, my motivation, my perfectionist tendencies, my ability to handle a task without the "undo" command. "I did not sign up for a school of life!" I often thought, as my fingers trembled at the perceived importance of every ink mark on the one precious sheet of paper I was given.

The method was simple enough, but the work was not easy! I realized very quickly that there really was no abracadabra in those exquisite inked drawings that took my breath away back in 2015. The only "secret" to the process was to follow the steps, to carry on, to put one line down and then another, to forget "ctrl+z" and to resist taking oneself too seriously.

Participation in this VERNADOC camp in Phuket encouraged and invigorated my enthusiasm for hand drawing, especially in the field of vernacular architecture. At the time I was still working on restoring traditional buildings in eastern Serbia and struggling to communicate the meaning of this work to the local community. VERNADOC struck me as a gentle but powerful way to share my passion for vernacular buildings with the local owners, who were often disillusioned with and resentful of their own heritage. With VERNADOC drawings, I thought, it is as if for a brief moment an architect could lend her eyes to a local: after seeing these meticulously detailed and painstakingly rendered presentations of their houses, the owners finally believe that they have something beautiful and valuable.

With every camp that followed, the kaleidoscope of possibilities I saw in drawing by hand only became more intricate and fascinating. In Pakistan, to give just one example, I saw how training in basic documentation techniques could turn into a powerful possibility for education and employment of women.

East elevation of the Luang Amnach Nararaksha Mansion, Phuket, Thailand. Original scale 1:30



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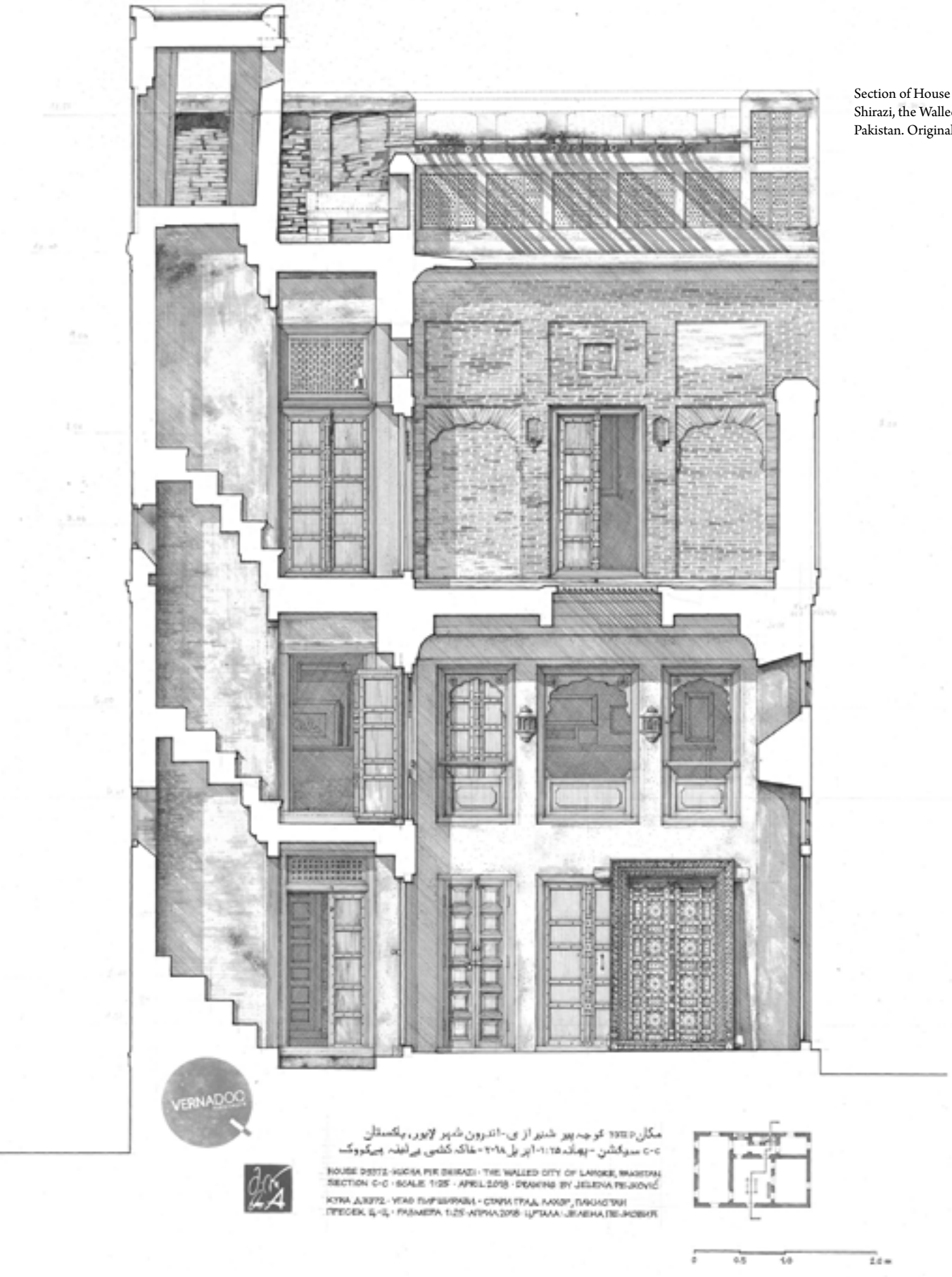
1: Inking in progress
2: Inking studio, Phuket, Thailand
(1,2: Nicholas Ng)

My own plans for drawing in Pakistan went somewhat amiss, though this is not necessarily obvious judging by the resulting drawing set. With a small team of enthusiasts, and the incredible support of architect Wajahat Ali from the Aga Khan Cultural Service in Pakistan, I set out to document the 300 year old traditional timber mosques in Ganish, Hunza. However, the project time frame unexpectedly turned out to be too short to secure all the necessary permits for that location, and eventually a new site was found in the Walled City of Lahore.

The unexpected highlight of the journey, however, was to finally make it to the striking north of this country, and to witness what incredible impact conservation projects can have on remote communities. A particularly impressive case in point is CIQAM, a Women Social Enterprise operating near the Altit Fort in the Hunza Valley. Today CIQAM employs over 90 women in a variety of trades, including carpentry and masonry works in addition to topographic and architectural surveys, design and drafting. But it all started when a small number of local women were trained

House D3372 – Kucha Pir Shirazi,
the Walled City of Lahore, Pakistan



Section of House D3372 – Kucha Pir Shirazi, the Walled City of Lahore, Pakistan. Original scale 1:25

in humble hand drawing during the survey of the Altit Fort back in the early 2000s. To this day, the hardworking women of CIQAM demonstrate how simple, low-tech documentation skills can empower communities who are the custodians of much of the world's cultural heritage.

And even when the stakes are not as high as improving livelihoods, teaching low-tech documentation and hand drawing remains a valuable tool. I trained participants in a number of Regional Restoration Camps, both architects and non-architects, and eventually I also organized the first VERNADOC camp in Serbia.

Each of these occasions reinforced my passion for drawing by hand as a powerful pedagogical method for explaining the basic building blocks of architecture. When asked to measure with simple tools and draw by hand, students are invited to patiently observe, analyze and represent the most fundamental, time-tested building materials and systems. In my experience, this process often gives them their first "A-ha!" moments: so *this* is how architecture actually works! The result is a deeper, more thorough appreciation of their future profession, and also of the inherited cultural context in which they will inevitably operate – as designers or conservationists.

For many architecture students, restoration training activities are the only place where they receive *any* instruction on how to draw by hand, since technical drawing, and especially technical inking, is taught less and less in architecture schools. As a result, an actual craft is fading away: the profession of architecture moved on from ruling pens to technical pens to CTB files, and has not looked back.

This thorough shift to digital tools is commonly justified by the demands of the profession – after all, in most places in the world, time and liability constraints on graphic documentation practically dictate the use of digital technology in design and construction. But we need to keep in mind that representing architecture is also a *thinking* discipline that originates in a *craft*, and that both the thinking process and the craft are increasingly under threat of extinction. In this context, restoration

Rogljevo wine cellars, Serbia

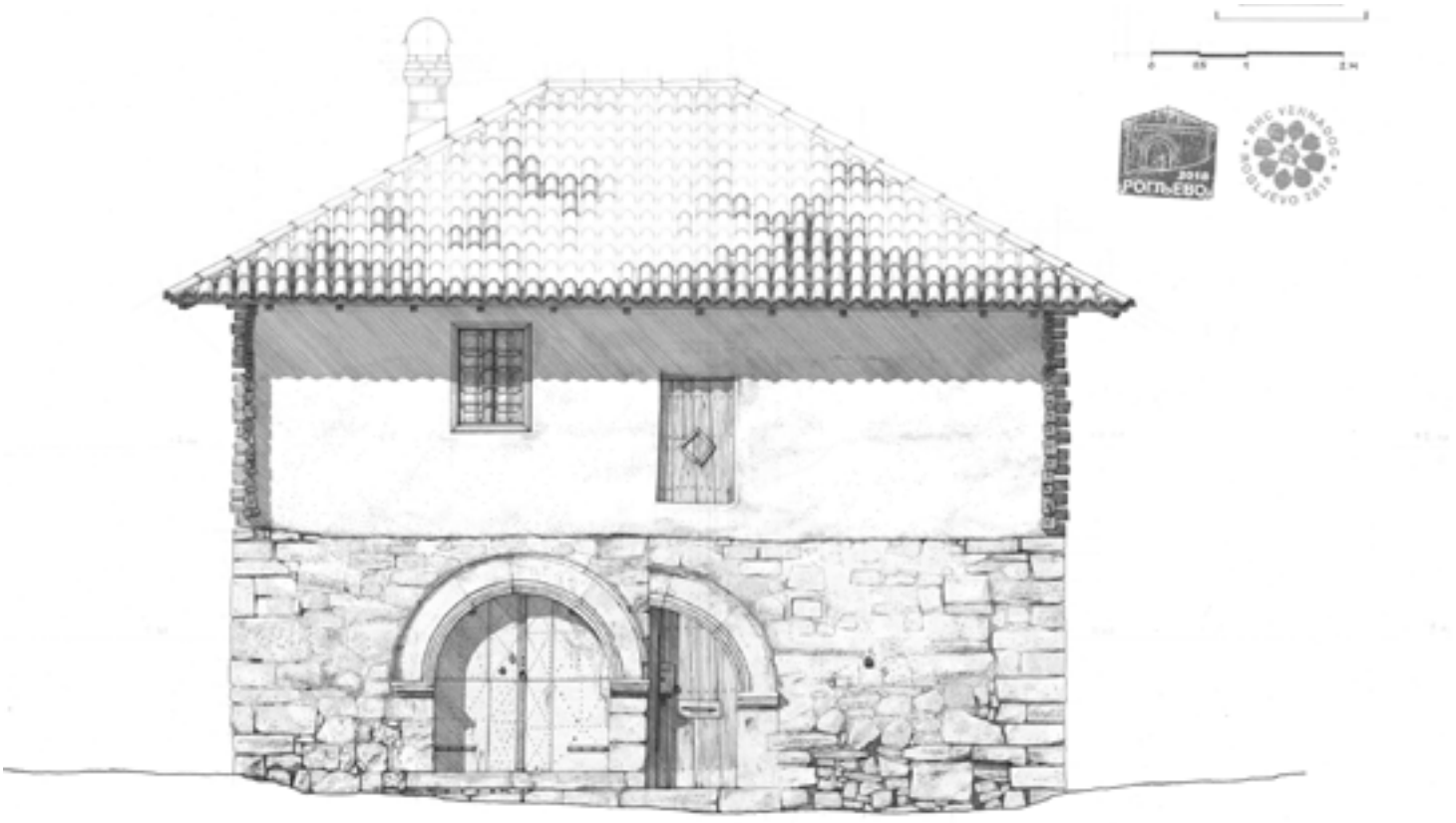
training camps, such as RRCs and VERNADOC, provide an invaluable environment, a precious preservation laboratory for the vanishing craft of hand drawing.

Finally, there is something to be said about drawing by hand as a contemplative, reflective, transformative process for the individual who produces the image. You make the drawing to preserve data and to present the evidence of a historic building. In turn, you learn intricate detail about the object of your interest, both tangibly and intellectually. By the end of this journey, you are a different person than you were when you started – a person with more knowledge, more appreciation, and more respect for the world that surrounds you, via the microcosm of the building you were measuring and drawing. The building you draw with this much focused attention becomes etched in your memory, in your real, physical neural pathways. In other words, you make the drawing – but the drawing also makes you.

In the increasingly digitized profession of architecture, opportunities to draw by hand decline constantly. This is why I treasure the precious few that remain. I draw by hand to truly see and better understand the fragile traces of modest, nameless buildings from the past. They brought us our today. I draw by hand to build my patience and to put my mistakes in perspective – they are an inevitable part of any bigger picture. I draw by hand because I enjoy the opportunity to lend my eyes to another: "Look! This is the beauty I see in your house!" I marvel at the possibility to empower the guardians of vernacular heritage by teaching them a basic architecture skill. I treasure the chance to give future architects an insight into the basics of their profession by teaching them how to measure and draw by hand. I wish to preserve drawing and inking as the incredible crafts that they are – not to contest digital technology, but, if anything, to give it more meaning through acknowledging its rich lineage. Finally, I measure and draw by hand because the process transforms me; it expands my view of the world.

Try it. You will be surprised.

South elevation of the wine cellar of Desanka Tančić 38/KP 2524, Rogljevo, Serbia. Original scale 1:25



Cross section of the Lei Lv Tai Mansion, Pingyao, China. Original scale 1:25

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Biography | Biografía | Biografia

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She is an architect based in Belgrade. She graduated from Harvard University, Faculty of Arts and Sciences, as a special concentrator in Architecture and Urban Design (A.B. 2003) and received her Master of Architecture degree from the Massachusetts Institute of Technology (M.Arch. 2006). Prior to her return to Belgrade, she worked for the Renzo Piano Building Workshop in Paris (2005, MIT awarded internship) and Genoa (2007-2010) on projects that include the Whitney Museum at Gansevoort (New York, NY) and Harvard Art Museums (Cambridge, MA). She participated in the 2013 Cultural Heritage without Borders (CHwB) Regional Restoration Camp in Rogljevo, Serbia, and has collaborated with CHwB since then. She is a registered architect in Serbia and a qualified conservation architect.