CIAT EUROPE CENTRE SPOTLIGHT ON SLOVAKIA

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He has 20 years of post qualification experience in Ireland, UK, UAE, Kazakhstan, having worked with HKR Architects for 10 years and is now living in central Europe. He is helping deliver a number of projects in Dublin, London, Albania and within the African continent.

Barry Reynalds MCIAT

CITY OF ŽILINA, SLOVAKIA.

Žilina is a city of 154,000 which is sited at the cross roads of Slovakia, Poland and the Czech Republic within a mountainous region subject to cold winters and moderately warm summers. It has like many of the cities in the region an historical centre, with many wonderful buildings many affected by time and the pressures of the regions historical communistic past. It is a city now taking great strides forward with improvements in architecture particularly in public cultural buildings and individual residential housing.

One of the highlights include the New Synagogue (1) which recently won the Slovak Patron of Architecture Award 2017. The building was once abandoned has recently been brought back to life by a non profit organisation led by Marek Adamov and his team. It really is a building for the use of everyone in the city and a great example of how people can effect positive change within architecture.

The New Synagogue with completed dome.

The New Synagogue main facade.

Primary dome rib framing.

Restored dome interior.

The region has a highly technical work force, driven by it‘s large automotive industry, building technology institutes and growing information technology. Kia the South Korean car manufacturing company has a large plant here, the centre of its European Operations, employing 3,800 people and turning over 350,000 new cars per annum. Siemens are also present, with the likes of rapidly expanding IT technology companies.

Slovak is the dominant language, however English and German are also popular, and are the languages of choice for industry. Slovakia is easily accessible to the UK via Bratislava or Vienna as well as Dubai which is only 5 hours flight away. The reason I am here is family orientated, however a wonderful place to live with a fantastic outdoor life.

Rosenfeld’s Palace Restored in 2016 with new Copper Roof

DO ARCHITECTURAL TECHNOLOGISTS EXIST IN SLOVAKIA?

Yes, an Architectural Technologist holds a very important role in architecture and the construction industry in Slovakia. However, they are known locally as General Building Engineer's but by and large they perform similar duties to those we are aware of in the UK.

HOW DOES AN ARCHITECTURAL TECHNOLOGIST QUALIFY IN SLOVAKIA?

In Slovakia, architectural technology as a role is very well defined as well as those of an architect, though the mechanism of qualification is in many ways different to that we are used to in the UK and Ireland. Qualification usually is achieved after 5 years at a 3rd level institute, with centres in Bratislava, Žilina and Košice. For the first 3 years, all students are taught as a Building Engineer, learning all aspects of building design and technology such as structural, mechanical, electrical, fire safety and the like. For the last 2 years, Building Engineers must declare which subject they will specialise in further detail. An Architectural Technologist equivalent is a General Building Engineer. They will receive the designator ING at qualification. What is very interesting about this process, is that a structural engineer as well as an Architectural Technologist both have the same basis in learning, the same curriculum for the first 3 years, and ultimately the role of constructing a building involves in practice very much the same approach.

Thereafter, gaining experience is of vital importance, and in order to fully qualify, meaning to have the ability to legally stamp and sign off on projects within their remit, a General Building Engineer must achieve 3 years minimum experience under the directorship of a qualified General Building Engineer or Architect or similar. After 3 years, the General Building Engineer will usually make an application for a full license to have authorship on their work, within a professional environment involving exams, interview and portfolio assessments.

Much like the UK, The General Building Engineer then has the authority to sign off (stamp) the documents used for the construction of a project, however they cannot sign off of elements of projects which are in other specialisms such as fire safety.

WHAT ARE THE BIGGEST CHALLENGES BEING A TECHNOLOGIST IN SLOVAKIA?

Working locally the biggest challenge is language. If you are working within larger architecture or engineering firms then the challenges are in some ways diluted. It would be impractical to work as a standalone Architectural Technologist in Slovakia without some form of help or partnering with local similar minded experts. English as a language is very much used professional to professional, but when dealing with local authorities all interactions and processes are carried out in Slovak.

In relation to the education system in Slovakia, it is far more involved than how I remember in Ireland, simply because there are 5 years of education required as opposed to 3/4 years in Ireland to achieve the qualification similar to an Architectural Technologist. Furthermore, in Slovakia, in the past the ability to go from high school to 3rd level in architecture is way more difficult to achieve, and in reality one must already think about this profession at the age of 14 in order to qualify. Meaning for example in architecture, a well established portfolio and understanding of the industry is required in order to impress those interviewing by the time you reach 18 years. Spaces are limited for architecture in Universities, though there is more capacity for technologists. The key to being an Architectural Technologist is to have the ability to get into higher education facilities in the first place. Once in, the roads to qualification are usually very well defined.

WHAT IS THE STATUS OF THE CURRENT CONSTRUCTION INDUSTRY IN SLOVAKIA

The construction industry is somewhat in flux at the moment in Slovakia with priority on completion of the required major roads projects and the trending of residential housing particularly in Bratislava. Other sectors of the market are not so active. The major road and rail projects have been boosted by contributions from the EU which contributed to a boom of sorts in 2015, though there has been a small decline in the market since then to the early part of 2017. At present the industry is on a 1-2% rise, and there is optimism that the necessary roads projects will be completed and new sectors of the markets will be added to. The residential sector is driven largely by improvement in the mortage rates for first time buyers and thus a desire to own your own home, however the National Bank of Slovakia has introduced stricter controls on home loans in March 2017, so we await to see the effect of that.

Physical construction is quite active in Slovakia at present particularly in Bratislava with numerous new projects under way. New projects include the Nivy Mall (2) and Station (site of old bus station) on the North bank of the Danube, Twin City Tower (3) and the Zuckermandel (4) mixed used development to the West of the Bratislava Castle.

Projects recently built include Eurovea (5) which is a mixed use scheme centred around a retail mall developed by the Irish developer Ballymore sited on the banks of the Danube and which won the 2011 MAPIC award for best retail development.

Challenges to the industry are similar to those experienced in Ireland/UK for example. The demand for improved housing and the completion of infrastural projects. There has been investment in the primary Bratislava to Kosice motorway, the new tunnelled bypass around Žilina (6), changes to rail lines/ stations generally and the completion of the new airport terminal at Bratislava in 2012. Slovakia has never felt more connected, but there is still room for improvement and growth.

At a local level there is a huge shortage on available contracting firms for domestic projects, with some smaller projects waiting 6 months to start. Public buildings such as schools, will need substantial investment to upgrade these facilities in the future. Furthermore, due to the climatic conditions in Slovakia, winter months which are cold and can last to March/ April, do have a knock on effect on the ability to complete construction projects, hence we saw at the beginning of 2017 a dip in projects starting due to an especially cold winter.

Like the example of the New Synagogue (7) in Žilina there are many examples of existing buildings which badly need restoration and their uses adapted for new uses. More needs to be done in this area. Lietava Castle, one example I know of, an impressive historical castle within 10km of Žilina and due to lack of substantially funds, it is just barely keeping it maintenance funds going with the drive of determined individuals locally. The tourism and cultural industry is important to Slovakia as it has been for its near neighbour in the Czech Republic. It’s natural environments, castles, caves and associated architecture all must be maintained and improved for the survival of tourism. The pity will be to let such important cultural buildings fall beyond saving. The New Synagogue has been a great shining example of how determination has saved this important building.

Lietava Castle, Žilina

AN ARCHITECTURAL TECHNOLOGIST AND DOMESTIC HOUSE DESIGN

I feel is necessary to address the basic differences in technology between Slovakia and UK/ Ireland by using the example of a typical domestic house. I have been to a number of countries within the EU , Middle East and Asia depending on project locations, and I have always wanted to understand the basic differences in how housing is built from one country to another. This is what I learned.

For an Architectural Technologist working in Slovakia, the preparation of drawings, format and arrangement are all very clearly defined by text book literally. At planning application stage, the quality of information to be prepared is the same as that for working drawing stage. A binder of information, will include the architects, structural, services and fire safety engineers designs as well as typical services utilities all where technical condition approvals are issued as part of the planning submission. This level of detail applies to new houses, apartments or even simple renovations.

In terms of materiality, traditional forms of construction are prevalent. Unlike the UK and Ireland which has been striving for years to avoid the use of blockwork, using lightweight/ steel methods instead, Slovakia works largely with blockwork, precast concrete, insitu concrete and all typically plastered/ rendered. That is not to say that use of steel/ plasterboards does not exist, of course it does, but in terms of pure domestic scale the construction methods are fairly traditional but intelligent. Brickwork we are used to in the UK as an external skin is very rarely used but it slowly creeping into the market in the form of brick slip construction.

Some examples of material/ methods include:

a. Thermal Blockwork such as clay types are commonly used, which are the traditional aerated reddish colour (https://www.wienerberger.com/products-brands). Concrete blocks above DPC are rarely used. All blockwork below DPC is in concrete construction with an applied bituthene waterproof lining. Alternatively cast in-situ concrete for basements used with insulation below ground on the outside, where the ground is subject to the effects of deeper ground frost than in the UK.

b. Use of Ceramic Structural Flooring System with concrete topping (the closest equivalent I recall in Ireland/ UK is block and plank) An example below.

c. Most roofs are formed with traditional forms of wood frame construction usually designed as cut roof. The sizes of rafters and purlins are much heavier than would be seen in UK, mainly due to the weight snow exerts on the roof. Roofs also where sloped, tend to be steeply pitched (at least 40-45 degrees)

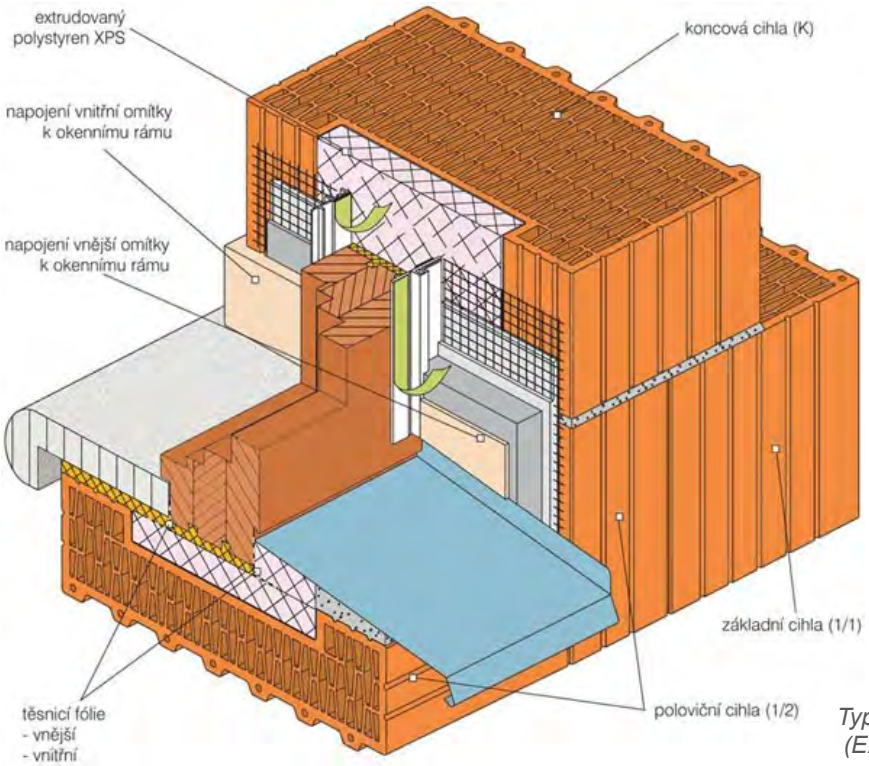
d. Flat roofs are designed for the majority as a cold roof with well ventilated eaves. This is against the principles of what we are used to in Ireland and UK where we steer towards warm roof and inverted systems and avoid cold roofs.

e. Roof materials, tends to be light weight sheet material, likely due to their availability and lower cost, but due to their lower weight also. Usually these are coated aluminium systems. The backing will have similar sarking systems such as Tyvek to the UK. Snow guards are usually added to all roofs to stop sudden falls and rain water pipes are typically placed on the outsides of buildings. Gutters and downpipes are much larger than those used in the UK. It is rare to use snow melt systems on domestic roofs. Actually keeping snow on a roof acts as a form of insulation, though I might add that technically speaking, it would not be taken into account when calculating U-values.

f. One object you will very frequently see on all buildings including housing are lightning rod conductors, with the conductors attached to an earth carried on the outside of buildings. Lightning storms in the Žilina region are very common, in the summer, sometime occurring several times in a day. All buildings are protected.

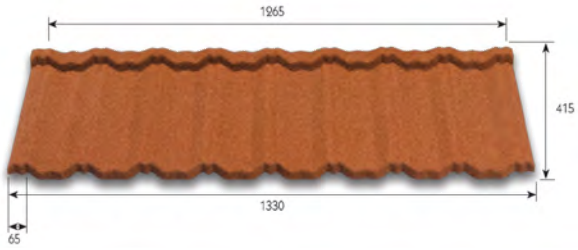
g. There is also a precidence in the industry for the use of wood frame housing which is common in the construction of what are called Garden or Weekend Homes. These are smaller than traditional houses sited in clusters in deeply rural locations, and literally are the weekend getaway houses for those living in apartment blocks within largely urban environments. Indeed experimentation in sustainable technnologies for house building is fairly common and I have heard recently of the use of straw bales to form the external skin of a wood framed home.

Preparing to cast a domestic floor floor slab using reinforced beams with ceramic/ clay blocks laid in between.
Concrete is then cast onto the entire construction. This is a more manageable form of self shuttered block and plank construction.

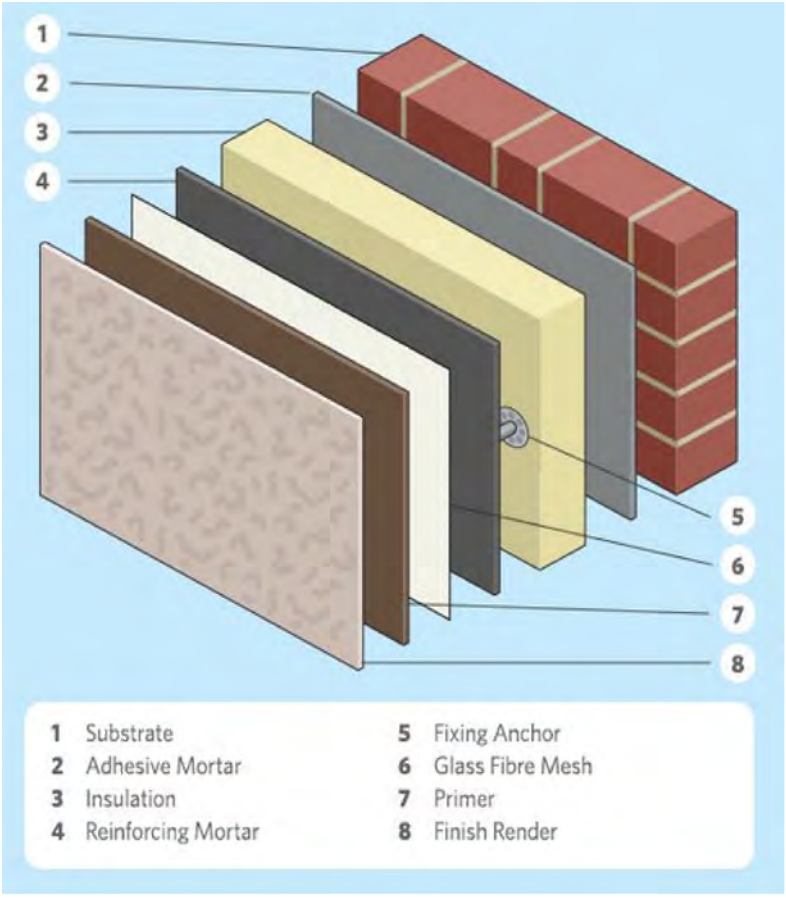


Typical detailing at window frame.
(Exterior insulated render not shown.)

Typical Clay Blockwork



Example of lightweight aluzinc sheet roof profiled panel with stone bonded coating (comes in various colours). This is very durable, light weight and used on pitches from 10 degrees.



The use of insulated through coloured rendering systems such as Webertherm is very commonly used.

WHERE COULD MEMBERS FIND OUT ABOUT SLOVAKIA AND IT'S CONSTRUCTION INDUSTRY

A good source of data is the English language online newspaper (https://spectator.sme.sk/), as the majority of the data on the industry would usually be in Slovak. Slovakia's chamber of commercie also has an English language website (http://web.sopk.sk)

Sources of Further Information

(1) http://www.novasynagoga.sk/english-2

(2) https://hbreavis.com/sk/projekty/stanica-nivy/

(3) http://twincity.sk/

(4) http://www.zuckermandel.sk

(5) http://www.ballymoregroup.com/project/detail/eurovea

(6) http://www.tucon.sk/en/project/tunnel-povazsky-chlmec-slovakia/

(7) http://www.novasynagoga.sk/rekonstrukcia/

Check out this link for the 2017 architecture award winners in Slovakia
https://spectator.sme.sk/c/20671089/this-is-the-best-slovak-architecture.html

RECENT PROJECTS COMPLETED BY BARRY REYNOLDS DURING HIS WORK WITH RVT, DJI AND RKD IRELAND

Nunhead Grove, South London.

Extension, Restoration and Change of Use of an historical church for 4 No. 3 storey townhouses

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ACKNOWLEDGEMENT

The Committee would like to thank **Barry Reynolds** for taking the time to write this “Spotlight” feature article to share with Members of the Europe Centre.

We hope you have found it both very interesting and informative and should you wish to contact Barry about anything you have read in the article please do so at:

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THE NEXT “SPOTLIGHT”

Why not write the next “Spotlight” feature to share with Members?

If you would like to write a “spotlight” feature to be included in future editions of the Centre Newsletter then please contact anyone on the Committee.

Restoration and Change of Use of existing quay side building in Dublin for office use with RKD Architects.