Report on Turf Building Course in Iceland– hosted by Byggdasafn Skagfirdinga

2-9 June 2019

Andrew McAvoy.

Thanks to:-

• All the staff at the Skagafjordur Heritage Museum and all the various sites that showed us around during our visit. Especial thanks to Bryndis Zoega who looked after us brilliantly from airport arrival to departure in Iceland and Helgi Sigurdsson for his metered instruction and for allowing us to get it wrong amidst turf construction. + special thanks for the secret bathing spots and any genus loci recoding there.

• Libby Urquhart & Seona Anderson at Archnetwork for developing and running the visit.

• The funders of the project- Erasmus+ programme

• Our employers; Historic Environment Scotland (HES), Loch Lomond and Trossachs National Park (LLTNP), National Trust for Scotland (NTS), the John Muir Trust (JMT), Retool Architecture, Dubheadarts.

The eight participants selected to report individually on aspects of the course, their impressions on Iceland and what the will take back to their various organisations in Scotland.

These follow in alphabetical order:-

1. Duncan Ainslie, HES

2. Stacie Allan, HES, Architectural Technician, Central East District, Conservation

3. Emily Bryce, NTS, Operations Manager Glencoe & Glenfinnan

4. Andrew McAvoy, Retool Architecture, Director and Principal Architect

5. Sandy Maxwell, JMT, Volunteer Work Parties Co-ordinator

6. Alistair Norris , LLTNP

7. Brigitte Postma, Dubhead Arts

8. William Reid, HES, Work Manager, M.C.U.

Re-building a turf barn at Tyrfingsstaðir farm.

By Billy Reid – Historic Environment Scotland – Works Manager.

**Accompanying words by Participant no 4 – Andrew McAvoy**

I attended the course as a practicing architect, commonly working in and around old buildings in a contemporary way.

Although I enjoy the process of recording documenting and repair of historic buildings and deploy craft based technology that could be replaced by more efficient model tech and materials, I am not a heritage specialist per say. I am most commonly found messing around with the time continuum and pulling stunts in both public and private realm that unite past present and future.

Curiously I have never been comfortable with the idea that certain buildings or even techniques are placed squarely in the heritage frame , some in the present usable frame and others being deemed as *modern*. Rather I embrace the idea that all techniques continue to evolve and must do.

Architecture I see as a functional Art Form lending itself to turning what might just be construction into something surprising and hopefully sublime.

I have always worked on the basis that buildings should be able to fall back to Earth in their most constituent parts without toxicity at the end of usable life and without harm for the environment hosting them.

I enjoy the vernacular for that reason .

Passive solar capacity through orientation, earth sheltering and environment positive responses to site and ecology are techniques that my practice of 25 years has always looked to deploy.

I travelled to Iceland in that vain.

The reports of my colleagues cover the physicality of the wonderful process techniques and tools required for excavation and partial rebuilding of a cow Byrne at Tyrfingsstaðir farm over 3 consecutive days in June 2019 are thorough and accurate.

On consideration of inspection of the first known Turf house in Reykjavik dating from around 900 at the settlement museum , travel through the landscape and visits to various important Turf buildings in the west and north west of Iceland, I report as follows.

Turf is perhaps being overlooked in its ability to serve some pressing human needs and has a future !

**Some contemporary attributes that could be considered might include :-**

* A high amount of localised contextual reference and appropriateness in its future presence in contemporary construction, as a coursed and cambered material in exterior walls – For enclosure walling , retaining walling and building walling .
* Inherent balance of strength to weight ratio in semi dry Klambre , Strengur and Terf during construction process ( depending on site selection skill and seasonal cutting.)
* Ability to retain moisture and avoid run off, with long time line in terms of moisture retention and sump credentials.
* Aesthetic possibilities where grain selection and laying are tightly handled as per the eye of Helgi. Easily carried with some c*utting edge design*  into contemporary eateries , interior designs , cultural buildings and contemporary eco tech. In line with recent European leanings
* Acoustic properties in separation of room environments.
* Wider sensorial associations to localised site and environment specific situations , in realms of touch , smell , appearance , resonance etc.

Note – different sites and root stock offer variance and possible exploitation of specifics .

* As varied as textile potentially
* Heritage sensitive.
* Zero toxicity materiality and toxin Sink.
* Isolation as well insulation in line with good Arctic rim practice.
* Zero imbedded material production cost or carbon footprint where carefully selected and handled .
* A complementary material with other high tech recyclables such as aluminium.
* A breathable material.
* A material with Thermal mass and slow time lag in terms of heat loss.
* A potentially living material with ability to offer footprint back per sq m of excavation , through use of its surface.
* A material that synthesises Architecture and landscape and builds symbiotics.

**Further observations on potential uses.**

* Suitable for use in development of contemporary eco chic architecture.
* Suitable for foundation in skill training , volunteer training, self build and self maintain community structures.
* A low material cost and imbedded carbon footprint for establishment of Climate Change regulation as it pans out by 2030
* Scaleable up and down in construction unit depending on harvesting technique , tools or perhaps bespoke machinery and handling apparatus - height , thickness, bond, banding layering and pattern making variable to match the site and scale. That is where aligned with contemporary symbiotic structures – see attached sketches by author.
* A methodology linking Iceland’s History , living memory , skill set and willingness to perform autonomously and avoid dependence.
* Allowing for Materiality that can be aligned with thermal springs , district heating , capillary piping to interiors and locking of low temp heat into isolated thermal mass of fabric.
* Heritage of framed and boarded gables lending itself to contemporary variance allowing for continuity of tradition , particularly on southerly openings where seasonal exposure to sun , light aspect and view would be desirable.

At time of writing, lessons learned in Iceland have resulted in tweaks to the design of a partially earth sheltered and turf roofed contemporary house in Ireland by my practice Retool architecture, about to be tested against an ultra conservative and backward looking planning authority in the Republic of Ireland. A house that will reconnect contemporary design with an ancient tradition of earth building for the most celebrated cultural monuments of Ireland and the local area.

**Lessons from Iceland to be applied.**

Maximise thickness of turf and particularly the substrate layers to iron out seasonal fluctuations in moisture to avoid dead turf and dead roofs.

Tune the cutting to trial excavation areas , cut stack and store in line with good Icelandic practice.

Concentrate on finding the living Turf, and then layer and bond to suit the situation.

Consider taking the roof to the wall and to the ground.

Understand the water table relative to the irrigation of the roof or the wall. Helgi says don’t irrigate, let it be.

Assess local archaeology record.

Avoid the bullshit.

Carry weight of international research to the area.

Don’t be bullied by building control or jobsworth.

Relate to ecology and local landscape .

Equate the footprint science in terms of carbon and material production and mileage.

No membrane for thermal mass.

Exploit the material for all its properties.

Keep it alive.

**Potential research links to be carried forward :-**

* Component footprint , science data, logging and accreditation, certification.
* Comparable projects across different countries.
* Heritage versus contemporary + Tangible versus Intangible Cultural Heritage strain – via Inherit ?
* International Eco networks and publishing,
* Guerrilla Cartography network.