

ICELANDIC TURF BUILDING

In 2003, Danish-Icelandic Olafur Eliason's Weather Project – a simple intervention, a glowing sun-like globe – at the TATE Modern drew over 2 million visitors. As a culture we increasingly look to nature as a source of inspiration, justification, and seduction. Turn on the TV and picturesque landscapes sell common goods from SUVs to laundry detergent. High profile international architecture takes on land form proportions, scale and materiality. Are these buildings engaging in regional place-making by invoking the landscape or are the architects just trying to win competitions?

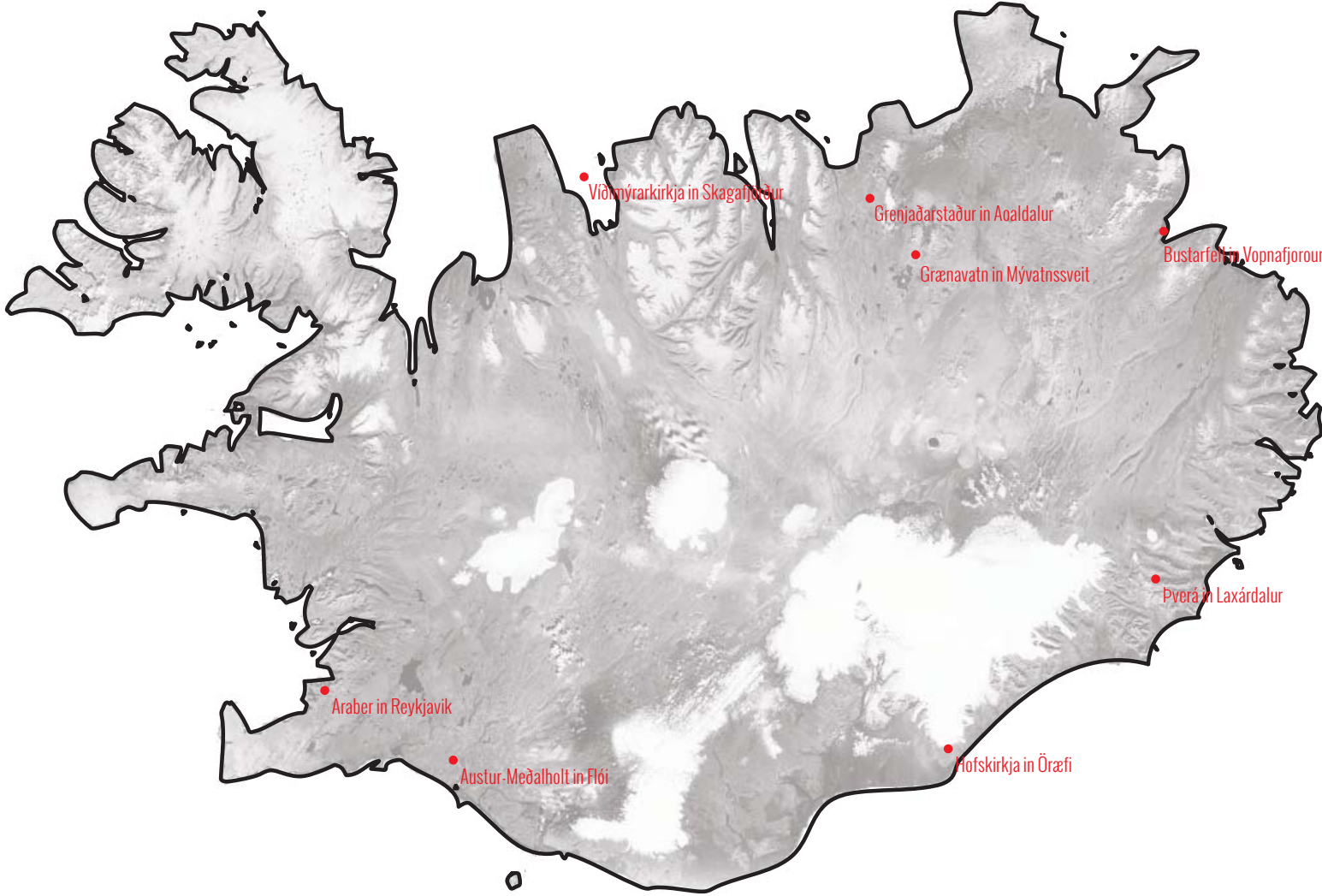
The word sustainability has become commonplace, but the tragic irony is that many “green” practices rely on conventional, low-cost materials and assemblies. The building envelope is sealed and insulated to a higher threshold, reducing energy loads but also creating toxic indoor air environments, trapping the off-gassing of a panoply of sealants, adhesives, wood preservatives and fire retardants.

It is within this complex post-post-modern context that the vernacular should be considered an invaluable source of practical knowledge for the building trades. A repository of site-specific solutions using simple and safe technologies, these methods span generations of cultural landscapes and promise to continue a rich dialog within the larger arc of resilient and sustainable habitation. This phenomenon is perhaps nowhere more dramatically apparent than in Iceland, where traditional turf architecture gently and gracefully embeds itself into the windswept horizon. Iceland has taken strong measures to preserve its cultural landscape resources by protecting 14 turf building sites.

The use of turf in vernacular building is common across climates – from the American Plains to the African Sahara and northern Europe. Iceland's tradition of turf building is unique because it remains a protected tradition which continued into the modern era across classes and program type. Brought by Scandinavian Vikings in the late 9th century, turf structures continued to be inhabited through the 1960's. In Iceland exists a unique living and evolved knowledge of ancient building practices.

Icelandic turf construction varies regionally, and is a rigorous and precise craft. Turf walls typically consist of three layers: Strangur, Torfa, Clonebruhause. Each rely on unique and precise cuts of angle and size, structurally integrated by their self-weight, geometry and herringbone assembly. Centuries of continued use of ancient building practices allowed for unique and fertile hybridizations of materials. Wood was sparingly but successfully integrated with stone and turf construction, with variation in the use of air layers in the wall and roof sections.

This study proposes an investigation of ancient and contemporary hybridized Icelandic turf building practices, with the intent of producing applicable knowledge for today's building methods. Turf is a material with low embodied energy, high carbon sequestering capacity, high albedo levels and high thermal mass. Secondly the research seeks to frame the findings within an inquiry into the evolving role of landscape and traditional culture in Iceland's built environment today. As our culture looks back to nature for direction, architects must ask how we integrate our best new technologies with rich building traditions.



ITINERARY

- WK1 REYKJAVIK**
 _Visit, document, and record public perception of Harpa Concert Hall.
 _Visit, study, and record assembly and phenomenological presence of the turf buildings of Araber.
 _Meet with Professor Steinþór Kári Káráson and at the Iceland Academy of the Arts to discuss the continuity of traditional building practices in contemporary Iceland.
- WK2 NORTH**
 _Visit, study, and record assembly and phenomenological presence of Viðmýrarkirkja in Skagafjörður.
 _Visit, study, and record assembly and phenomenological presence of Grenjadarstaður in Aaaldalur.
 _Visit, study, and record assembly and phenomenological presence of Grænavatn in Mývatnssveit.
 _Meet and interview Helgi Sigurdsson of the Fornverkaskolinn Heritage Craft School.
- WK3 NORTH**
 _Class with Helgi Sigurdsson of the Fornverkaskolinn Heritage Craft School in turf assemblies
 _Visit, study, and record assembly and phenomenological presence of Bustarfell in Vopnafjörður.
 _Visit, study, and record assembly and phenomenological presence of Pverá in Laxárdalur.
- WK 4 SOUTH \REYKJAVIK**
 _Visit, study, and record assembly and phenomenological presence of Hofskirkja in Örfæfi.
 _Visit, study, and record assembly and phenomenological presence of Austur-Meðalholt in Flói.
 _Visit The Iceland Design Center to view archives of the Nov 23 2014 Berlin Exhibition of ICELAND AND ARCHITECTURE
 _Visit document and record public perception of Hallgrímskirkja.
 _Studio visit to Studio Granda to discuss with Pétur H. Ármannsson the continuity of traditional building practices in contemporary Iceland.

- WORKING READINGS**
 _Juhani Pallasmaa: The Eyes of the Skin: Architecture and the Senses
 _Martin Heidegger: Building, dwelling, thinking
 _Lisa Heschang: Thermal Delight
 _Joost Hoof and Froukje Diken: Historical Turf Farms of Iceland: Architecture, building technology and the indoor environment
 _Gudmundur Ingólfsson: Iceland and Architecture
 _Edwin Sacher: 1938 Thesis documenting turf buildings
 _Steinberg JM. The Viking age long-house at Glaumbær Skagafjo
 _UNESCO: The Turf House Tradition [web]



HARPA CONCERT HALL, REYKJAVIK
 Henning Larsen Architects and Olafur Eliasson Shares formal characteristics with regional basalt cliffs as well as the crystalline refraction of ice. Built 2011



HALLGRÍMSKIRKJA
 State architect Guojón Samuélsson Designed to resemble columnar basalt cliffs of Iceland's Landscape. Built 1945 - 1986



TURF WALL
 Shown here is the outer layer, stacked in herringbone pattern. Each of the three layers of the wall's section are cut using specialized tools and regionally specific technique.



GLAUMBAR AT SKAGAFJÖRDUR
 A large farmstead of 14 houses, in excellent repair and walls built almost exclusively of turf.



BUSTARFELL AT VOPNAFJÖRDUR (above)
 A large farmstead of 17 houses which highlights the development of the turf house into modern times
KELDUR (below)
 A unique preservation of the larger site.

Relevance to academic work

I have focused my academic work on building performance - both energy performance and the many ways in which buildings can impact people's behavior, health and happiness. In my work as a GRA and in the Public Interest Design Practicum I developed skills to assess the ways buildings can fail or serve the people using them. Traditional vernacular architecture interests me because it is an evolved and tested building lineage grounded in a specific cultural landscape. This proposed study of vernacular building methods in Iceland provides a unique opportunity to synthesize how low tech building methods can contribute to contemporary sustainable building technology.

Budget for travel and research in Iceland July 21 - August 10

AIRFARE:	\$800
FOOD AND LODGING: <i>camping</i> \$15 X 20 days, <i>food</i> \$20 X 20 days	\$900
LAND TRAVEL: <i>rental car</i> \$100 X 20 days	\$2,000
TOTAL ANTICIPATED EXPENSE:	<hr/> \$3,700
PERSONAL CONTRIBUTION:	-\$2,000
AMOUNT REQUESTED:	<hr/> \$1,700