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Amphibious Living in Iceland

A design-led research on geothermal water and urban environment for the town of Hveragerði, Iceland

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Abstract:

In the aftermath of the financial crisis that invested Iceland starting in September 2008 the town of Hveragerði decided to launch at the end of 2008 a national competition to gather ideas on how a more sustainable future could be designed and implemented for the town itself. Amphibious Living is the name of the project that was submitted by the architectural office Arkitektur.is in response of the competition. Amphibious Living is a design-led research project on geothermal water and urban environment that starts with the question: can we start using energy, form, and entropy to rethink the notion of space?

It proposes an answer to the unsustainable neo liberal economic model that was adopted in Iceland until the banking collapse of 2008, favouring the financial sector and large speculative developments as primary vessels of growth. Amphibious Living is an attempt to create a more sustainable future by embracing the beauty of water and the power of design. The results of the competition was never implemented and therefore the ideas set by Arkitektur.is have never been tested, nevertheless they represented a wake-up call on how local resources could be utilised to create local prosperity.

This paper examines energy primarily intended as geothermal water as a tool to create sustainable urban living. It focuses on the small town of Hveragerði (2,300 inhabitants) located in the south west of Iceland. In this context Amphibious Living investigates the power of design to generate new strategy for the community by supporting a politics of small things, incremental amelioration, retrofitting the existing infrastructures, protecting the human scale, and the sense of place, by enhancing the endogenous resources, primarily geothermal water, and developing processes of participation in the city making.

Key words: Iceland, energy, geothermal water, design, and sustainable cities.



Figure 1. Iceland and the town of Hveragerði (author's drawing)

1. Introduction

In 1908 geothermal water was for the first time used to heat dwellings, the same year the first geothermal swimming pool was built in Iceland. In those days only one per cent of the Icelandic population knew how to swim but this changed rapidly in the following years (Jónsson, 2009). The pool became the centre for everyday gathering where people met, and social interactions were initiated (ibid.). Between 1931 and 1950 more than 44 geothermal swimming pools were built all over the country.

Today "the culture of public outdoor bathing has become one of the most significant features of the Icelandic way of life" (ibid.: 8). In 2007 one hundred and sixty three public swimming pools were in operation in Iceland, of these one hundred and thirty were geothermal and almost all of them are outdoors (ibid.). Geothermal pools have for long filled a social role: a place of relaxation and physical activities but also a place for communities, where people meet and talk and exchange ideas: the equivalent of the Greek agora or the Italian piazza. In Iceland "a community without a proper public bathing facility, including a hot tub, is considered incomplete" (ibid.: 23). Today up to 73 per cent of energy produced in the country is considered renewable (ibid.).



Figure 2. Geothermal water in Hveragerði

2. The Collapse

The neoliberal experiment, which was undertaken in Iceland from the 90's up to the financial collapse of 2008, envisioned the country as a global financial centre. The Icelandic economic meltdown, the biggest, relative to the size of an economy that any country has ever suffered, (The Economist, 2008) caused people's disdain and protest. Out of this a movement led by the poet Hörður Torfa called "The Voice of the People" emerged from the streets of Reykjavík demanding a fairer system. It was the beginning of a cultural revolution (Helgason, 2009) which brought, in the following months, the resignation of the government; new national elections won for the first time by a coalition of Social Democrats and the Left-Green Party led by Jóhanna Sigurðardóttir, the first openly lesbian Prime Minister in the world. Ms Sigurðardóttir said on a public speech reflecting on the Icelandic economic collapse the 12th April 2010:

"Mistakes were certainly made. The private banks failed, the supervisory system failed, the politics failed, the administration failed, the media failed, and the ideology of an unregulated free market utterly failed. This has called for a fundamental review of many elements of our society. In that respect, democracy, the rule of law and close international cooperation has been and will continue to be our strongest weapons".

In this "mea culpa" it is important to acknowledge also the failure of design, because it betrayed its investigative critical nature, to find new solutions, to question the established neo-liberal system, to produce innovation and not simply stuff. When the word design is applied to city it acquires also a new meaning, which is vision: how we want to design our city equates with how we want to be (Harvey, 2008). Design therefore becomes politics, it is about what decisions we want to make. Amphibious Living considers design to be a political and social act that works as a vehicle for social expression and a catalyst to celebrate public life, reinvigorating civic engagement. Design is about choices, to find solutions focused on achieving a better society. The crisis hit Hveragerði' hard as a town that was mainly known for its agricultural production. The politics followed by the Icelandic government favoured the financial sector and large speculative developments as primarily vessels of growth. The investments therefore shifted from greenhouses to real estate, and consequently a haemorrhage of jobs occurred from the agricultural sector to the banking sector located in the capital. Consequently the very core of Hveragerði, where most of the agricultural production was located became abandoned.



Figure 4. Abandoned greenhouses in the centre of Hveragerði

3. Amphibious Living

Amphibious Living is the name given to the proposal submitted by the architectural office Arkitektur.is in response of the competition of ideas to regenerate Hveragerði launched by the same town at the end of 2008. Hveragerði, as the entire country at that time, was trying to build a sustainable future away from the world city model, which was adopted until the banking collapse. That model prioritized growth scenarios affiliated with big- iconic developments and large speculative investments which by-passed the endogenous resources of the place.

Amphibious Living envisions sustainability as a societal journey, as the Italian designer strategist Ezio Manzini defines it (Fuad-Luke, 2009: 200). Sustainability ought to become a movement of ideas and different behaviours, capable of changing our status quo, the way we relate to the environment and to each other. With this in mind Amphibious Living rethinks the everyday life of Hveragerði, its public and private space, its systems and networks, its resources, to generate new forms of activism, political consciousness, and community. Amphibious Living believes that "diversity is our strongest weapon" as the Indian philosopher, physicist and environmental activist Vandana Shiva defines it (Shiva, 2007: 91). Diversity means looking into the myriad of the assets of a place, it means working with precision, mapping events, skills, activities and potentialities of the place. It means celebrating the specificity of the place the "territory and its potential endogenous resources is the main 'resource' for development, not solely a mere space" (Pike et. al., 2006: 15). Understanding its resources and investing in its people are the first step towards sustainable (small) towns (Bell and Jayne, 2006; Knox and Mayer, 2009). With this in mind we started thinking of the project for Hveragerði. The resources at the base of the project are: the school of agriculture, the medical centre, the hospital specialized for the elderly, the greenhouses (most of them in ruins), the swimming pools, the skill of its inhabitants, and the geothermal water. This latter becomes the main tool to rebuild the economical and social life of the town.



Figure 5. The town of Hveragerði



Figure 6. The town of Hveragerði main assets

The question of can we start using energy, form, and entropy to rethink the notion of space? Is therefore answered by defining entropy as a continuous process of transformation of our territory, form as a meaning that we are designing to react to the entropic state, space as a transformative entity, and energy as a force -in this case the geothermal one- that can acquire different forms and outputs. Energy therefore is not just a scientific tool but becomes a poetic tool to rethink our space, our city, and our territory. It is a conceptual device used to conceive new architectural strategies that reveal space not as a fixed, measurable entity but as a temporal coalescence of continuously unfolding forces (beyondentropy.com).

In the Amphibious Living research geothermal water is used to reactivate the local food production by restoring the existing greenhouses, once at the physical and productive center of the community, also geothermal water is used to create a new urban vision that is based on: well being, spas, sense of community, and public space. Geothermal water becomes the poetic tool that brings together the endogenous resources of Hveragerði: the school of agriculture, the botanical gardens, homes for the elderly, the physiotherapy center, hotel, the medical center, and give them a new form, a new meaning by designing new architectural and socio-economic strategies.

These initiatives are supported by people's capabilities that are present in the town, creating a condition for social and economic "emergence". This means formulating the right social policies and designing the right public space that is conducive to communication and sharing of ideas. "When people freely meet and talk to each other as equals, reveal their differences, display their distinctions, and develop a capacity to act together, they create power" (Goldfarb, 2006: 4).

This is the power of ideas, of innovation, which is the basis of socio-cultural-economic development for Hveragerði. However in order to support innovation people need to participate in the life of society, they need to cooperate and this requires trust (Hirst, 1997; Hamdi, 2009; Amin and Graham, 1997; George, 2010). Trust is a process that takes time to be forged. It requires appropriate policies as The World Development Report states "Greater equity implies more efficient economic functioning, reduced conflict, greater trust, and better institutions, with dynamic benefits for investment and growth" (2005: 3), but also spatial policies capable of protecting public interests over private ones (Peñalosa, 2007). Reinforcing social participation and community can make the difference "between disaster and triumph in the face of economic collapse" (Jackson, 2009: 182). This was an essential component of the vision that Amphibious Living proposed for Hveragerði.



Figure 7. Amphibious Living vision: mapping of activities (what kind of activities?) in purple scale: left as it is today, right as it is envisioned. It is evident that the centre of Hveragerði is emptied by any activities (author's drawings).

In the Amphibious Living scheme the public space is at the center of the design and it is celebrated by the small and diverse activities that develop along it. These activities are located in the old abandoned greenhouses forming a strip of approximately 800 long and 100 meters.



Figure 8. Amphibious Living vision: the green strip reconnects the scattered parts of the town (author's drawing).



Figure 9. The green strip as an active ground for small and diverse activities (author's drawing).

Geothermal water is at the base of the revitalization, it will be used to create a network of different activities: greenhouses, spas, bathhouses, swimming pools, thermal centers, centered around the public space (the Green strip) but owned by the different people who currently own the area, with the possibility for new comers to join in to form co-operative organizations. Amphibious Living uses geothermal water to enhance the endogenous resources and people's skills. It is a development that wants to create opportunities for people by removing possible "unfreedoms", as the Indian Nobel Laureate in Economics Amartya Sen defines the possible obstacle to development. "Development is therefore the expansion of human capability to lead more worthwhile and freer lives" (Sen, 1999: 295), within this definition the state has the important role to promote public policy initiatives able to create social opportunities (ibid.: 1999). This is the foundation of any city's political agenda: the improvement of the quality of life of its citizens. And life is improved by investing in the sense of community, the resources, and human skill of the place. Extensive studies done on North American small cities emphasize that their "strong sense of place and the 'human scale' are their unique selling points" (Bell, D and Jayne, M. 2006: 8) and underlines that "'big-fix' solutions rarely work ... in smaller cities. Rather, a continuous series of small-scale organizational, aesthetic/design, and economic improvements that make downtown distinctive from other settings - a strong sense of place - is the foundation for successful downtown development in small cities" (Bell, D and Jayne, M. 2006 : 9).



Figure 10. Amphibious Living vision: the centre of Hveragerði (author's drawing).

The core of Hveragerði is imagined to be built up gradually with a series of small-scale independent initiatives started by its own residents or small external investors. Amphibious Living supports the small-scale aspect of the development as fundamental for the success of project.



Figure 11. Amphibious Living vision: the small and diverse activities taking place in the Green Strip and adjacent to it (author's drawing).



Figure 12: Amphibious Living vision: a section of the road with storm water directly recycled in the street (author's drawing).

The British journalist Anna Minton states that “smaller interventions, on a more human scale, which are based on a wider set of values than the single-minded ideology of increasing property prices, are more likely to bring with them a more diverse and public spirited culture, which is in tune with local people and create more successful places as a result” (Minton, 2009: 198). The architect Nabeel Hamdi, winner of the UN-Habitat Scroll of Honour for his work on Community Action Planning in 1997, states that good planning enhances connections, “it builds on what we’ve got and with it goes to scale” (Hamdi 2006: xviii), it creates opportunities for change, it facilitates emergence: “the ability to organize and become sophisticated, to move from one kind of order to another higher level of order” (ibid.: xvii). It means allowing the beginning of lots of small autonomous projects, but also their coordination into a vision a “common sense of shared purpose” (Layard, 2005: 234) that is at the foundation of each society. Architecture, the art to build cities, must relate with the geography, history and the people of the place, it must work with an economic plan on improving local entrepreneurship, nourish place economies, and develop knowledge, skills, and creativity. Redrawing the rules that produce the space in our city means redrawing ourselves, this is the constant and continuous process at the base of the city making.

The core of Hveragerði is imagined to be transformed in a lively network of locally driven diverse activities: spa-wellness, small bed and breakfast, restaurants, therapeutic centers and residences, which share and celebrate their common ground and are supported by a common resource geothermal water and the local human capital.



Figure 13: Amphibious Living vision: The Green Strip (author's drawing).



Figure 14: Amphibious Living vision: Hveragerði public space along the Green Strip (author's drawing).



Figure 16: Amphibious Living vision: spas and well-being in Hveragerði (author's drawings).

4. Conclusions

The American anthropologist Janice Perlman says: “We may have come this far through competition and survival of the fittest, but if we are to make the leap to a sustainable world for the centuries ahead, we will need to be intelligent enough to do it through collaboration and inclusion” (Perlman, 2007: 190)



Figure 17: Amphibious Living vision for Hveragerði (author's drawing).

Sustainability in the project of Hveragerði starts from the local skills and from the geothermal water. Water is intended as a public good that needs to be administered collectively. Amphibious Living celebrates Hveragerði's endogenous resources, its sense of place, the human capabilities, the contact with nature, the human scale, the power that is born from trust and human relations as a catalyst for innovation and progress. It prioritizes a form of urbanism that is receptive to local needs and works with the people, an urbanism that does not emphasize big-scale developments but one that works consistently and extensively through a series of incremental small-scale interventions, which primarily celebrate the sociability of its public space and the architecture of the city. Geothermal water is key to this development and as a common recourse it must be administered commonly and bring advantages to the entire community.

The Icelandic renaissance could start from its most basic resources: geothermal energy, human capabilities, and the beauty of the country.



Figure 18: Amphibious Living vision for Hveragerði (author's drawing).

Amphibious Living is a project researched by the architectural office Arkitektur.is. The town of Hveragerði never implemented this project because of lack of funds and because the political stage changed and priorities shifted but its spirit persists as model for better administer local resources and work in closer relationship with the people. Amphibious Living represents a breakthrough in Iceland because it envisions a profound and authentic social revolution for the entire place. A new way of living that is much more in tune with the local resources. The project continues to inspire people who believe that the future of Iceland is not in the hands of big companies with big gestures and grand projects, but it is the hands of each of us, in the small gestures of the individuals.

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