



CASE STUDY

Current thinking on sustainable human habitat: the Findhorn Ecovillage case

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Abstract

Ecovillages worldwide address the contemporary quest for sustainability while increasing bioregional literacy and developing processes and tools that aim to reduce their ecological footprints. The Scotland-based Findhorn Ecovillage is one of them. Designated UN-Habitat Best Practice as a model for holistic and sustainable living in 1998, it has been incorporated in the UN Habitat data base of initiatives which are making outstanding contributions to improving the quality of life in cities and communities around the world (UN Habitat, 2017). The article analyses how twenty years later the pioneering eco-settlement has advanced the sustainability agenda in the context of food production, energy systems, built environment, biodiversity, local economy and carbon footprint. The article concludes, two decades later, the Findhorn Ecovillage continues to play a role as a research and development centre for carbon-constrained life-styles, providing solutions to human and social needs, protecting the environment and offering an enhanced quality of life for all.

Keywords – ecovillages, Findhorn ecovillage, best practices, built environment, ecological footprint

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Since 1996, the UN-Habitat Best Practice Unit and its network of partners have helped identify, evaluate, document and disseminate close to 5,000 proven solutions from over 140 countries, to the world's common social, economic and environmental problems (UN-Habitat, 2018). These success stories are contained in a searchable and regularly updated database known as the Best Practices Database. Best practices are defined by UN Habitat as initiatives which make outstanding contributions to improving the quality of life in cities and communities around the world.

According to the Global Ecovillage Network (GEN) "An ecovillage is an intentional, traditional or urban community that is consciously designed through locally owned, participatory processes in all four dimensions of sustainability (social, culture, ecology and economy) to regenerate their social and natural environments". For Dawson (2006): "Ecovillages – local communities which aim to minimise their ecological impact while maximising human wellbeing and happiness– are found all over the world. They incorporate a wealth of radical ideas and

approaches which can be traced back to Schumacher, Gandhi, the 1960s, and the alternative education movement".



Figure 1. Findhorn Ecovillage: aerial view.

In 1998 Findhorn Ecovillage (Figures 1 and 2), known as 'the mother of all ecovillages' (Liftin, 2014), was designated UN-Habitat Best Practice as a model for holistic and sustainable living. The recognition provided international exposure of the settlement where living and working, recreation and learning, community and individuality exist side by side within the bio-region boundaries.



Figure 2. Findhorn Ecovillage: landscape view.

Twenty years later UN-Habitat invited the pioneering ecovillage to update its entry and re-submit its case. The report concluded, although the mainstream has come a long way, two decades later the Findhorn Ecovillage is still a stimulating trailblazer. It continues to champion multiple aspects of sustainability – the personal, the social/cultural, the economic and the ecological.



Figure 3. Findhorn Ecovillage: ecological houses.

Over the two decades the settlement has improved its nature corridors, with woods, orchards and berry bushes separating individual areas, linking them to the surrounding landscape and providing biological enrichment and orientation. The Hinterland Trust promotes conservation, education and local community building, and provides recreational facilities and activities for schools and the local area. It also manages a Green Burial Site, the first in this region of Scotland (Hinterland Trust, 2018).

In terms of the built environment, there have been 125 ecological buildings erected to date, built to strict ecological guidelines (Talbot, 1993). The settlement is famous for its recycled whisky barrel houses (CNN, 2017), the Nature Sanctuary built from local stone and whisky barrel parts and experimental 'small' houses and eco-mobiles. New buildings have incorporated passive solar features and 2.5 times the insulation required by Scottish building regulations (Eco-arc, 2016). The community has continued to experiment with innovative, energy-efficient construction systems, such as the 'breathing wall' which eliminates the need for a vapour barrier and allows the fabric of the building to interact with the indoor climate in a beneficial way (Talbot, 1993).

In 2008 a visual arts centre - Moray Art Centre - was opened, serving the region with city art gallery-quality exhibition space and several studios. With photovoltaic panels supplying electricity and ground source heat pumps supplying all heating, the arts centre is considered an exemplar of local materials and craftsmanship. Between 2011 and 2014, Soillse, a new multi-generational co-housing carbon zero development was established. With its own biomass district heating, its super-insulated houses adopted triple glazing throughout. The co-housing was the first in the UK to utilise the 425mm thick insulated block. In 2012 co-housing neighbourhood East Whins broke ground in a 'brownfield' site, providing 20 passive solar design, highly insulated houses.



Figure 4. Findhorn Ecovillage: recycled barrel houses.

Over the years the Ecovillage has developed its own sustainably harvested woodland, generating circa 26 tons of firewood a year. Increased use of wood for space and water heating has gradually eliminated the use of coal, and where possible a shift has been to propane instead of oil, as the less polluting option. Furthermore, in 2010 a 199kW biomass boiler using locally sourced woodchips was established, distributing heat to more than a dozen community buildings and saving 100 tonnes of carbon per year (Korrie Renewables, 2013). In 2017 a carbon offsetting service was launched for both guests and

residents to compensate their travel emissions which are a large part of the community's carbon footprint.



Figure 5. Findhorn Ecovillage: nature sanctuary.

In 1989 the first 75 kW wind turbine was erected. By 2006 the community had bought three second-hand larger units and become net exporters of electricity with four turbines totalling 750 kW (3 @ 225 kW, 1 @ 75 kW). The later turbines are 30 m high with 14 m long blades = 44 m total and are beautifully decorated with murals painted by community youth (Energy4All, 2006). Over the past 30 years numerous solar heating systems have been installed and in 2007 a carpool was established with currently 170 members and 15 cars including 3 EVs spread across the local area (Moray Carshare, 2018). The electric cars are supplied from the ecovillage's three windmills, and so are carbon neutral. Even when the windmills are not running the grid supply used is sourced from renewables.

The ecovillage is predominantly a waste-free settlement. Residents have continued to diversify an extensive recycling programme (metal, glass, paper, plastics, batteries and a clothing bank) and have been instrumental in encouraging local authorities to expand the range of recycling services to the local area.

With extensive gardens and a large food growing area, the Ecovillage Project has also been promoting a wider range of right livelihood opportunities and supporting the development of local trading companies including a Community Interest Company (CIC) retail business with an emphasis on organic foods and ecological/Fair Trade products (Phoenix, 2018) Today, in economic terms, the ecovillage is comprised of numerous different organisations: charities, non-profits, for-profits, co-ops and social enterprises, from freelance artists to solar panel manufacturers, from building companies to whole foods and craft shops, from a printing company to a charity supporting Russian orphans.

Findhorn Ecovillage has its own local currency (Figure 6), the Eko, launched in 2002 to support localisation of its economy. Many businesses accept the Eko in place of Sterling and there are now £20,000 worth of Ekos in circulation, with four issues so far (Far Nearer, 2016).



Figure 6. Findhorn Ecovillage: local currency.

As a laboratory of sustainable living, the ecovillage offers widely applicable insights for the planning and reorganisation of our towns, neighbourhoods and districts. Over the last 57 years, it has become a major resource for environmental education locally, nationally and internationally. The ecovillage includes the educational charity, the Findhorn Foundation (Urquhart, 2012), hosting over 2,000 participants annually for experiential learning to transform the world from the inside out, including carefarming and work with local youth, and the Findhorn International Centre for Sustainability (FICS) which supports professional networks to create a regenerative world through such programmes as Authentic Investor, Climate Finance, Findhorn International Forum on Sustainability and Integral Cities. The Findhorn College, partners with leading training institutions for personal and community empowerment as well as offering space for independent research and field study.

In 2005 CIFAL Findhorn, a UNITAR Affiliated Training Centre was established to conduct capacity building programmes for local authorities and leaders (BBC, 2012). Over 10 years CIFAL Findhorn/Scotland hosted over 100 seminars addressing policy development and technical issues related to climate change, renewable energies, biodiversity, low-carbon housing, SDGs, circular economy, green jobs, transition towns, local and bioregional food systems, hydrogen economy, sustainable islands and many other themes.

In 2005 Gaia Education was established in Findhorn to provide sustainability education promoting thriving communities within planetary boundaries. Since then it has been developing curricula for sustainable community

design, operating in 49 countries and drawing on good practice within Findhorn and ecovillages worldwide (Wahl, 2016).

Ecological Footprint

An independent study undertaken by The Sustainable Development Research Centre of the UHI Millennium Institute in collaboration with the Stockholm Environment Institute concluded in 2006 that the residents had the lowest ecological footprint of any community measured so far in the industrialised world and corresponding to half of the UK average (Tinsley and George, 2006).

An ecological footprint is an attempt to measure the total environmental impact of human activities in a given area (Wackernagel and Rees, 1996). The results measure the amount of land and water that the population requires to provide the resources they utilise and to absorb their wastes. The calculations used convert this into a measure of land area, global hectares (gha).

Carbon Assessment

In terms of carbon emissions, the ecovillage is victim of its own success. A 2017 carbon assessment calculated 5,092tCO₂e as the total emission of greenhouses gases for the ecovillage (PET, 2017). With the 2015 total emissions at 4,065tCO₂e, there has been an increase of 1,027 tCO₂e in two years putting pressure on the settlement to devise effective strategies to reduce emissions in order to keep the global temperature at a level well below 1.5°C.

Adding the impact of residents related travel with regular visitors from over 70 countries, travel becomes the largest source of emissions at 4,367tCO₂e, with air travel as the dominant cause of emissions accounting for 3,460 tCO₂ and car driving for 863 tCO₂. The carbon assessment report advocates guests and residents take responsibility for offsetting emissions that cannot be avoided.

Networks of community-led initiatives

Research conducted in 13 EU countries by the European Association for Information on Local Development (AEIDL) found there were in excess of 2,000 local, community-led initiatives that were directly engaged in practical activities to promote sustainable, resource-efficient, low carbon and climate-resilient initiatives. Many of the communities involved were found to be testing new ideas, technologies and approaches in order to find the most sustainable and cost effective solutions (O'Hara, 2013).

In this way, they acted as important local laboratories, piloting and demonstrating how citizens and communities can live more sustainably. Metcalf (2012) states that several thousand so called 'intentional communities' - which include ecovillages, co-housing and income sharing communities - thrive around the globe, and the

number is rapidly increasing. He adds "a strong environmental ethic is held by most members of most intentional communities, and that is why some are called ecovillages" (p.28).

Findhorn Ecovillage is a founding member and home of the Global Ecovillage Network (GEN) International Secretariat. GEN was founded in 1995 with the mandate of supporting the creation and development of ecovillages and communicating the ecovillage experience to mainstream policy-makers, planners and professionals.

The Global Ecovillage Network defines ecovillages as "human-scale settlements, rural or urban, in the North or in the South, that strive to create models for sustainable living". Ecovillages emerge according to the characteristics of their own bioregions and typically embrace four dimensions of sustainability: social, ecological, economic and cultural, combined into a systemic, holistic approach that supports community development (GEN, 2017).

Ecovillages such as Findhorn often serve as research and demonstration sites (Dawson, 2006) aiming to address the quest for sustainability by increasing ecological literacy, developing processes that significantly reduce ecological footprints, and re-designing methods of production and patterns of consumption.

Swimming against the dominant socio-economic paradigm of our age, ecovillages have formed beyond the bounds of mainstream society in an attempt to ameliorate perceived social inconsistencies (Metcalf, 2012). He adds that although intentional communities are not 'utopias', they are on a utopian quest to achieve if not a perfect society, then at least a more sustainable world in which to live. Andreas and Wagner (2012) report titled *Realising Utopia: Ecovillage Endeavours and Academic Approaches* position ecovillages as 'pioneers of change' demonstrating that a good life with a low ecological footprint is possible, even in industrialised countries.

Today some 700 residents live in and around the ecovillage, which is diverse in demography, complex in its organisation and rich in its social and cultural milieu. With sanctuaries for contemplation, a singing chamber, organic gardens, the Universal Hall with recording and dance studios, a youth building, and pottery and weaving studios, surrounded by beach, bay and forest, what is sustained in the settlement is not economic growth, but the entire web of life upon which the residents' long-term well-being depends.

The Findhorn Ecovillage is an evolving model, a research and development centre for a carbon-constrained future, providing solutions to human and social needs, protecting the environment and offering an enhanced quality of life for all. Most of all, the settlement is a place of calm and quiet, and its architectural expression follows criteria of beauty, elegance and simplicity, so that it merges into the

existing landscape and cultural heritage of Morayshire, in the northeast of Scotland.

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