

## Article

# Myths and Issues about Sustainable Living

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**Abstract:** There are many common misconceptions about sustainable living. These hinder both an understanding of the benefits, and broader acceptance of sustainable solutions. Professionals within sustainability know of many good project examples, but these are still little known amongst the broader public; and in many countries hardly at all. Four such misconceptions or “myths” are briefly described, and then countered by a selection of examples. Most of these have been extensively studied and are arguably largely success stories, covering many aspects of ecological, economic and social sustainability. Four points are then noted which whilst not new, demand increased attention: an integrated view of city and countryside; the still underrated role of dynamics and process; social science insights into consumption and sociotechnical change; and emerging questions about sustainability in dense settlements, i.e., urbanity in general. This paper thus argues for a synthesis perspective; some quite new research perspectives are emerging. The paper is based on the literature as well as over 25 years of professional experience, visits, workshops and in-depth exchanges with most of the projects presented. Whilst remaining attentive to obstacles, weaknesses and challenges, a key task is to achieve wider dissemination of “the good news” about sustainable settlements and living.

**Keywords:** sustainable built environment; sustainable living; low carbon futures; wellbeing studies



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## 1. Introduction

Negative perceptions are a main obstacle to the broader and speedier adoption of sustainable solutions. After briefly noting four of these problematic “myths”, the “good news” is then posited in a short selection of widely praised examples. All of these have quite a long track record as well as having been the subject of quantitative and qualitative studies. Whilst we who work in the field of sustainable built environments may be acquainted with such projects, the same is not at all the case amongst the broader public or indeed many decision makers. In many parts of the world, these projects are virtually unknown, and even in countries where they are known, they are sometimes perceived in skeptical or outright negative ways. This is one of our major challenges, presenting a need for the increased dissemination of examples which communicate the benefits of sustainable built environments in terms of ecology, economy, and community.

A distinction should be made here between regions where there has been considerable focus on sustainability, including much of western Europe, and many other parts of the world where sustainable built environments, whether in rhetoric or in practice, have as yet received very limited attention. Success stories are indeed available, and the intent here is not an in-depth analysis of projects, beyond noting areas where major success has been achieved, this again in all three areas of low ecological footprints, an affordable and resilient economy, and enhanced social participation and wellbeing.

In the quest for successful sustainable built environments, this paper then briefly discusses four points which deserve increased attention. These are, firstly, an integrated and inclusive view of city and countryside; second, the still underrated importance of dynamics and process work, including effective dissemination of positive messages; thirdly, social science insights into consumption and the dynamics of change; and fourthly, emerging questions about sustainability in dense settlements, i.e., urbanity in general. Whereas none

of these themes are new and all are topics of extensive research, they are interconnected and need to be seen as a whole and several of them contain quite new and little known areas of research. This paper thus argues for a synthesis perspective aimed at enhancing the sustainability transition through effective strategies and communication in policy, research, and diffusion.

## 2. Sustainable Built Environments

The common definition of sustainability as comprising ecological, economic, and social aspects needs no discussion here. Happily, environment and climate are high on the agenda now. However, those are only the 'ecological' challenges. In many ways, the eco-technical challenges of sustainability are the least difficult part. On the economic front, the current financial system is destructive, unsustainable, and arguably the greatest practical obstacle to a fairer society [1,2]. In these pandemic times, most voices are crying for a return to "normal", meaning renewed economic growth and consumption, while radical finance reform is not on the agenda. Then, there's the question of social, human, and community sustainability, i.e., wellbeing, the focus of this issue.

Let us firstly acknowledge that the big word sustainability simply means good quality—for environment, for economy, for society, and on a long term basis. The goal is thriving ecosystems, economies and people. Note that diversity, innovation, and resilience are common keywords in all those three areas. The theme of built environments commonly refers to buildings and urban areas, but even the most remote jungles are to a limited degree human settlements. There are few environments today which do not bear some traces of human shaping and anthropogenic impact. Sustainability depends to a great degree on how they are formed and managed. In addition, nature is an essential source both for our economies as well as human health and wellbeing.

It must be remembered that one cannot guarantee sustainability. As any ecovillage or urban eco-project participant would know, users may misuse the good solutions or develop conflicts, and the solutions themselves may simply not perform as expected or as modelled with sophisticated planning tools. This is one reason why all the examples selected for this paper have at least some years of experience. Sustainable built environments are those that are conducive to a low footprint, economic prosperity, and a healthy and pleasant life, on the basis of inclusive, thoughtful, responsible design and subsequent operation. Sustainability has to be sustained!

## 3. From the Bad News to the Good News

Hence despite complex rhetoric, sustainability and plain common sense have much in common. What is good quality of life? What is happiness? Today's focus on carbon, technofixes and cybersolutions often diverts attention from those questions. Every one of the Sustainable Development Goals (SDGs) would be good policies even without a climate crisis. Happily, many inspiring solutions are already with us. Ecological, economic, and social sustainability are out there, in forms ranging from public governance to business, from individual buildings to urban districts, from rural ecovillages to new city lifestyles. They are still few, and often receive little publicity, if not negative publicity. Alternatively, with an equally undesirable effect, they are presented as successes without sufficient scientific rigor and attention to their conflicts and failings. They must pass the test of time. More on this below. The power of real life examples is undeniable.

In presenting the brief examples below, the intent is not to offer significant new knowledge to most readers, but to outline how such examples can provide, in a scientifically fair yet simple manner, positive messages to encourage sustainability and overcome some of the negative preconceptions and perceptions which we encounter in practice, every day, hindering the transition to sustainability. These overall perspectives (arguing a large measure of success) offer a form of knowledge that is new to many (and can naturally be contested). The discussion is based on many years of contact, documentation, exchanges of experience with and in nearly all cases visits to these and similar projects.

These few cases are selected in such a way as to illustrate that good practice for sustainable built environments includes both small and large scale, urban and rural, rich and poor contexts, providing a radically reduced ecological footprint, resilient economy, and not least, enhanced social and community wellbeing.

#### 4. From Ecological to Social Focus

Rachel Carson's *Silent Spring* (1963) was a famous environmental wake up call [3]. Pioneer thinkers such as Schumacher, Commoner, and Naess [4–6] outlined the challenges of the human situation, as well as the problematic underlying world views which we developed in our long and litter-strewn hike from the cave to the Anthropocene. *The Limits to Growth* [7] rang the warning bells in scientific terms about excessive population, consumption and economic growth. Yet fully 35 years ago, researchers showed in studies such as the *1 kW per Capita report* [8] that in technological terms, a sustainable and equitable world was fully possible, with technology that was already available way back then.

Technical solutions have been with us for a long time. Wind, hydropower, and solar heating have been in use for centuries. The first photovoltaic solar cells were produced in the 1950s [9]. The city of Windhoek in Namibia has been recycling its wastewater to drinking water for 50 years [10]. The first passive standard houses were built and thoroughly tested—and visited by this author—in the freezing climate of Saskatchewan, Canada in 1978 [11,12]. Heliotrope, the first (if expensive) plus-energy house was designed and built by architect Rolf Disch in 1994 and his Solarsiedlung with 60 very affordable plus energy houses was completed in 2004 [13]. Claimed plus-energy and carbon neutral buildings can now be found in locations from Europe to America to China. Carbon neutral cities are promised soon. Please see Figure 1.



**Figure 1.** The Plus Energy Solarschiff, Freiburg by Rolf Disch. Source: the author.

Hence, in environmental terms there is abundant literature as well as practice in the field of sustainable solutions for buildings and cities. There is also considerable although less focus on aspects related to quality of life and wellbeing, equally essential for a successful built environment. There is growing understanding that our key challenges are not technical but of a cultural and social nature. For the problem is not so much what changes are needed, but how to achieve changes in society [14]. Even more so since every society is different, with multiple social, cultural, historical and institutional dynamics—hence the call for local solutions. With increased focus on social issues and dynamics as opposed to the purely technical issues. To this purpose, in 2019 in the context of the Oslo European Green Capital year I initiated a conference and workshops on the theme of urban wellbeing. The event deliberately avoided all mention of carbon and instead highlighted success stories about participatory processes and sustainable ways of living—the win-win

of sustainable transitioning. It can be argued that much of the most valuable sustainability research and discourse now is to be found within the social sciences.

## 5. The Myths

Some negative myths raise their heads again and again every few years. For example that photovoltaics never pay back the energy needed to make them, that wind energy is useless because the wind does not always blow, or that low energy buildings cost a fortune. Naturally, the negative myths contain veins of truth, e.g., all the barriers, conflicts, and mistakes. Journalists and vested interests very often look for the problems, either because they basically do not like “green”, or because they feel it’s right to show both sides. Which is fair enough; but they omit to mention that there are just as many barriers, conflicts and mistakes to be found in any conventional housing estate, volunteer association or municipal office. Amongst many negative views noted through several decades of practice in many countries and contexts, this paper highlights four common arguments against or objections to sustainable solutions and lifestyles. The examples that follow often serve to counter not only one, but several of the four negative views that are discussed.

### 5.1. “Green Living Means Sacrifice”

A very common misconception about green living is that it will oblige us to curtail or give up many enjoyable activities including much travel and many forms of recreation; many “belt tightening” sacrifices of freedoms, consumer choice and wellbeing. Is this true? Examples below portray very reasonable eco-modernity.

### 5.2. “It’s Only Possible in the Countryside”

Another popular objection about sustainable settlements and lifestyles is that they can only be in rural contexts such as ecovillages. Whereas over half the world’s population now lives in cities. Are a sustainable built environment and living only possible in the countryside? Examples below of two urban eco-projects serve to largely dispel that myth.

### 5.3. “It’s Only for the Greenie Rich”

Another is that sustainable living is only possible for rich societies and a “greenie” middle class with money, education and spare time. Moreover, that it is utterly impossible for those at the bottom of the pyramid, namely the poor and largely unemployed millions. This is obviously valid to a degree, but the poor are in some ways very resilient and sometimes put us to shame with what they achieve without resources. Examples below are from South Africa and India.

### 5.4. “It’s Eco-Fascism”

A final quite widespread myth is that sustainable solutions and lifestyles demand stringent rules and controls which will destroy democracy and human rights, leading either to Stalinist eco-communism or to hypercapitalist eco-corporate manipulation. The theme of “eco-fascism” has already been much debated by writers such as Andre Gorz [15]. There certainly has to be a balance between individual rights and the common good. However, does a sustainable society have to be oppressive? On the contrary, these initiatives are chosen voluntarily, for the qualities and freedoms they offer. Examples below are from Denmark and Iceland.

## 6. Countering Myth

These four negative views are the product of lazy thinking or journalism. Countering this is the realisable evidence of completed settlements and projects that demonstrate that neither austerity, money, authoritarianism, nor a flight to the countryside are required to lead sustainable and fulfilling lives. Eight projects are now briefly presented and described that confront easy myth making and stereotyping in respect of sustainable development

### 6.1. Myth 1. No Sacrifices: Hjortshøj Eco Settlement

Denmark is a pioneer of ecocommunities, which are now found all over the world. These are built environments sharing a common vision which in most cases is deeply ecological as well as social. Most are rural but there are also urban examples. They vary in size from a few families to several hundred people. Some have a large degree of shared space, activities and even economy. Some are quite experimental, others like Hjortshøj also suit quite conventional families, where modern, high quality living is organized in a sustainable way, including growing healthy food, ecological water and waste recycling, renewable energy, car sharing, communal facilities, and home workplaces [16]. There are several Danish studies of behaviour and satisfaction in these ecocommunities including Hjortshøj [17].

Hjortshøj, founded some 25 years ago, now comprises more than 250 adults and children. It is organized into groups of houses, with increasingly advanced ecological building solutions. Farming is in this case on quite a large scale with 20 hectares of land, giving a fair degree of food self-sufficiency. Many residents now have at least part of their work on site, whilst others still commute. Work includes farming, baking, ceramics, teaching, handcrafts, various jobs online, and many pedagogic and cultural activities. As part of their social vision, they also cater for people with special needs. Please see Figure 2.



**Figure 2.** Good modern living, Hjortshøj, Denmark. Source: Judit Szoleczky.

Most of the housing is in groups of 10–20 units, each featuring a building shared by all and large enough for meetings, cooking together and social events. The very first houses were largely self-built, but through the years, these groups of houses illustrate increasingly advanced ecological construction, including solar energy, water saving, natural ventilation, and low impact materials.

Shared solutions illustrate the advantages of “access not assets”: one has access to amenities such as tools, guest facilities, a vehicle, or various types of vehicle, at any time without owning all of these. This gives the same amenity such as mobility at far lower costs: and all the maintenance, insuring and so on is taken care of. Car sharing or pooling is equally an example of the very considerable savings that “the green life” can offer. In addition the amenities are more often repaired and less frequently discarded in favour of the latest trendy models.

The Global Ecovillage Network [18] plays a key role in spreading experience, inspiration, and concrete practical solutions, presenting a good example of the power of networks in fostering best practice. In-depth analyses of ecovillages have shown that their ecological footprint can be little more than one-third of the national averages [19].

In countries such as Denmark both technology, financing and expertise are more readily available than elsewhere; nevertheless, ecocommunities exist in many developing countries, especially in Africa and Latin America. Ecocommunities illustrate lifestyles that



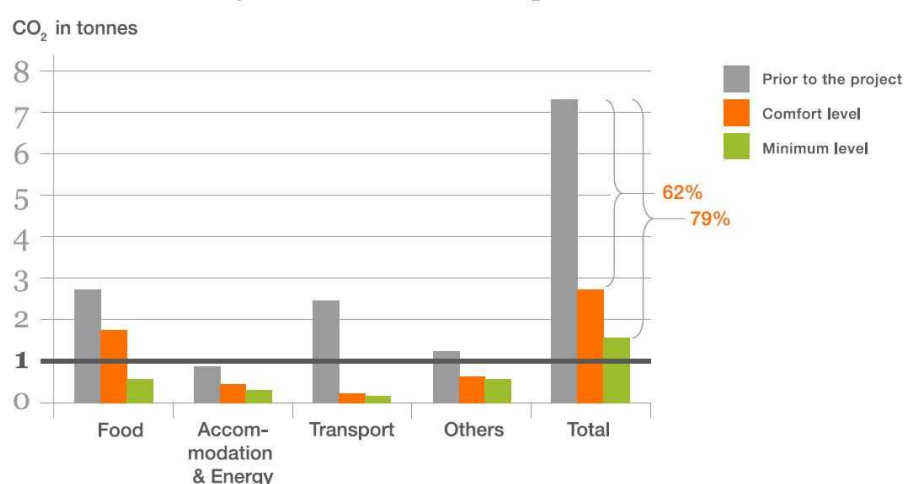
can be ecologically and socially positive, combining low consumption with modernity. They typify a holistic vision that needs to be combined with realism and practical skills; and where possible a positive attitude from their community, financiers and local authorities. The residents of projects such as Hjortshoj enjoy most of the up-to-date amenities and activities of a modern lifestyle.

### 6.2. Myth 1. No Sacrifices: One Tonne Life, Stockholm

In this Swedish experiment [20], a typical suburban family was provided with the means, i.e., low energy house, electric car, etc., and asked to see how much they could reduce their ecological footprint and climate emissions. Over six months they had reduced from a Swedish average of around 10 tons of emissions (CO<sub>2</sub>e) per capita to just over two tons. Of those total emissions, shared public consumption such as schools, roads and public facilities accounts for about 1.8 tonnes of CO<sub>2</sub> in Sweden.

The family's emissions were calculated to 7.3 tonnes at the start, already a little below the Swedish average but typical for families with two children. Importantly, the calculations include the indirect consumption such as the emissions to produce the electric car and low energy house. The family reduced their CO<sub>2</sub> emissions from transport by 95%, from food by 80%, from the home by 60% and in other areas by 50%. Their overall CO<sub>2</sub> footprint shrank by 75%. The reduction of energy related emissions was largely possible by subscribing to green energy supplies (mainly hydropower in Sweden). At the same time, the family's economic costs for energy, transport, and food were greatly reduced. Habits, more than actual available solutions, were found to be a main barrier here as in other studies [21]. Please see Figure 3.

#### The Lindell family's carbon dioxide footprint



**Figure 3.** One Tonne Life, Stockholm. Source: A-Hus.

Notably, it was found that a first phase of reducing by 62% required no feeling of reduced comfort or life quality and benefits including both lower costs and better health [20]. This phase included less meat, eliminating food waste, efficient water and household energy use, and public transport or train instead of air travel. In the next phase, they then achieved a minimum level of 79% reduction, that is four-fifths less emissions. To achieve that level, some significant cuts and lifestyle shifts became necessary but were not seen as unpleasant or very demanding. They noted, however, the limitations in what is available, e.g., that choosing climate-smart food is not simple and much clearer information to consumers is needed.

It was also calculated that the one tonne target can be achieved for the society as a whole, given good will on the part of consumers and technology that is mostly quite easily available already (though not yet very widespread in the market). This widely

discussed goal of 90% emission reductions in rich countries during the coming decades will indeed demand shifts in consumption and lifestyle, even though technology advances, in energy systems and not least zero emission buildings, will help. A problematic new conversation, which we address briefly below, is that of city life in general with the health and consumption patterns that city living often forces on us.

Reports and other information on this as well as the other examples discussed here are available on internet. The experiment shows that average people can quite easily go a long way towards sustainability, enjoying wellbeing whilst reducing the impact of a typical peri-urban built environment by over three quarters. This message too needs to be more widely disseminated

### 6.3. Myth 2. Not Rural: Urban Eco Living: Distrikt Vauban

The Vauban district in Freiburg, Germany has won many awards. Surveys about what sort of city people would like show that Vauban appeals not only to people with “green” preferences; it is simply about excellent city living quality. Achieving a low ecological footprint is for many people just an added bonus.

Vauban combines ecological, economic and social qualities. Good ecology includes low energy buildings, solar technology, high biodiversity, water and waste recycling, a district bioenergy plant, outstanding public transport, pedestrian and cycle networks, car sharing, and more [22]. A robust economy is ensured by varied jobs, good services, short distances and above all mixed use; a big change from the zoning that was long prevalent in city planning. Above all, community life is ensured by cooperation and communication, including the civic organisation Forum Vauban, which has been a key to “sustaining”, i.e., keeping the vision going. It is the users, and only they, who can ensure that sustainability is maintained over time. Local democracy is not just a slogan, but a practical necessity for success.

What began in a student and activist ecocity vision around 1992 slowly spread to the town planners and finally politicians. City authorities provided a kind of supportive top-down management that enables, rather than decides, with inclusive processes and incentives to stimulate bottom-up activity and creativity, as well as variety. Equally important, the sustainability focus spread into most of the city of Freiburg’s planning work and it now enjoys a reputation as one of Europe’s greenest cities. Please see Figure 4.



**Figure 4.** Urban Eco-district Vauban in Freiburg. Source: the author.

Vauban is affordable for quite low income groups and has a very varied socio-economic population. Citizen participation has been a constant theme, including many workshops and the process of building cooperatives (“Baugruppen”) which saves about 20% of construction costs. The technology at Vauban is today no longer state of the art, but Vauban does include some of the first ever passive and even “plus energy” housing [13]. In

more recent urban projects, not only the operational energy, but also the energy embodied in the materials has come into focus. Even excellent near zero impact solutions, such as the multistorey straw bale Lilac Cohousing, UK, are now recognised ecological practice [23].

“Vauban shows how citizens can shape their living environments and care for them collaboratively. They care not just for their private houses but for collective, semi-public, and even public spaces in their neighbourhood, because they were involved in planning” [24].

Car-free zones are widely recognized as best for environment, safety, children and noise, but also make economic sense. In addition to removing pollution and noise, far less land is occupied by roads, one does not need sidewalks, and the almost traffic free streets are play spaces. The proof of a walkable city of short distances is that people rarely need to use cars. Surveys show that car use is much reduced and that walking, cycling and public transport journeys have doubled. A big economic bonus, less recognized, is that much less of the valuable urban land is devoted to vehicles and can be developed profitably. Surveys frequently note high satisfaction with such mobility initiatives [25].

There are still few urban areas with comparable experience, especially in the social sphere. Transforming existing cities towards sustainability requires long term strategies. Definitely still amongst the best urban ecology projects in Europe, Vauban has its imperfections but has long been a pioneer for good, sustainable urban living. These qualities can in our view only be achieved with moderate city densities [26]. Moreover, it’s urban, showing that not only the countryside can do this.

#### 6.4. Myth 2. Not Rural: Urban Eco Living: Kalkbreite

Whilst city environments offer much in the area of economic and social qualities, they evidently limit sustainability in an ecological sense. Urban agriculture is a great social project but can never produce more than a fraction of our food, and most forms of renewable energy cannot be placed in cities. Even solar has limitations: a Netherlands study showed that solar cannot cover the energy needs of a built environment that is denser than around 2–3 storeys [27]. For water, waste treatment, recreation, all cities are dependent on resource flows to and from a hinterland, and dependent on the whole globe for information, knowledge, networking, and much else. Nevertheless, pioneering urban projects offer examples of city living with sustainability as their guiding design principle and mode of operation.

Kalkbreite in Zurich, Switzerland is a large recent urban development on a central city site. Built largely on top of an historic tram depot, the project was initiated by a group of activists and organisations as an alternative to a proposed conventional development. With around 22,000 m<sup>2</sup> of buildings, it was completed in 2014. There are about 97 living units with a very varied population now totaling around 300 people. There are many common facilities such as kitchens, sauna, music rooms, workshop, library. The total space per person is around 34 m<sup>2</sup>, far below the national average which is around 45 [28]. Importantly, the complex also houses mixed use, with some 200 workplaces including offices, cinemas, cafes, NGOs, a medical practice, kindergarten and other facilities that also serve the city district. There are also guest rooms, avoiding the need for individual apartments to have extra visitor space. The broad corridors are designed as social spaces; most apartments have balconies overlooking the large, sunny rooftop playground and garden area, which has become a very social space [29].

The project goal of 2000 Watts per capita corresponds to around one quarter of the energy/carbon footprint of conventional affluent societies. CO<sub>2</sub> emissions per capita in Switzerland have declined quite rapidly in recent years and now stand at around 4.4 tons. The EU average is 6.2 and USA 15.5 tons [30]. When the Swiss 2000 Watt vision was developed [31], it implied a reduction of around two thirds, which includes both direct energy consumption as well as mobility, embodied energy, and consumer goods.

Results are monitored regularly. Water use and wastes are also kept to a minimum [32]. The buildings are all extremely energy efficient, conforming to the Swiss Minergie-P-Eco standard, including low embodied energy. Energy is supplied by a groundwater heat



pump and solar PVs [33]. Being in central Zurich, there is very good public transport in the area, so the complex is completely car free but provides ample bicycle facilities as well as a car pool system. Please see Figure 5.



**Figure 5.** Kalkbreite mixed use quarter in central Zurich. Source: the author.

Thanks to reduced space, efficient design and integrated planning, the costs are well below average, thus catering to quite low income groups. Process is also a key in this project. The planning included many workshops with future residents, and ongoing operation within a cooperative structure is also inclusive of all with monthly meetings and a management team. Kalkbreite [34] is a high-density inner-city development, which achieves a commendably low footprint as regards energy and climate emissions, but is above all a bustling, thriving social space in the city. These urban projects also disarm the other myths about sustainable environments being either sacrifice-laden, expensive, or repressive.

#### 6.5. Myth 3. Not Only for the Rich: Capetown Slums Project

Many inspiring examples are bottom-up initiatives that receive little by way of research funding, subsidies, political or media attention. There are many positive initiatives in slums and very deprived settlements around the world; sadly, they are usually small and seldom scaled up. In terms of physical interventions they may typically involve “reblocking”, rearranging small groups of shacks into more hygienic and secure configurations [35]. However, the larger urban scale of informal settlements is far more difficult to address. The *Dignified Places Program* [36] has applied a low-cost and innovative planning approach implemented in the vast slum areas outside Capetown in South Africa.

As in many locations, these informal settlements appear at random and expand very rapidly in an uncontrolled manner. There is little or nothing by way of amenities, basic services, public space or urban structure. The program’s initiators, from the City planning department, developed a concept of trying to seed some meaningful urban structure into these vast amorphous urban areas. Choice, accessibility, and equity were guiding goals for their planning. A main rationale is that the millions living in small shacks have no living rooms and no public spaces either; hence the idea of creating “common living spaces”, to provide better life quality, and which could also develop into hubs for social activity, small scale commerce, transport, markets, and other essentials for a thriving community.

The approach was to create these in an unpretentious way as opposed to heavy-handed top-down planning interventions, which are in any case extremely difficult to implement in such contexts. The projects employ very simple means, the intent being that they should be minimalistic and flexible. The spaces are intended to grow and develop organically according to their own dynamic, fueled by local ideas and needs. It follows,

explained project leader Barbara Southworth, that some of them would prove to be well sited and grow naturally, whilst others would not. This generosity of approach is notable and appears to have achieved quite a large measure of success. Please see Figure 6.



**Figure 6.** The Dignified Spaces Program, Capetown. Source: the author.

About 25 urban spaces were created. Simple space defining elements such as level changes, low walls, pavings, seating, colonnades and structured tree planting were main design tools and were constructed to suggest and encourage a range of unspecified future uses. The approach is informed by many international placemaking approaches, not least those of the Dane Jan Gehl [37], as well as the concept of “generative works” [38]. The Dignified Places program was recognized with the International Ralph Erskine Award in 2004.

The spaces show unexpected, often positive uses and this is seen as an indicator of success. Each project was designed as independent, but at the same time contributing towards a broader vision of an urban structure of interlinked places.

Sadly, these areas in South Africa have experienced increasing crime and corruption in recent years. Our introduction voiced a reminder that sustainability cannot be guaranteed. One can create built environments that are conducive to—or generative of—thriving, prosperity, and community. Some of these spaces have grown and thrived; others, as expected, have not. The Dignified Places Program offers an original, modest approach to slum improvement, based on a deep understanding of placemaking issues combined with simplicity, at a very low cost.

#### 6.6. Myth 3. Not Only for the Rich: The Barefoot Colleges, India

The Barefoot Colleges, a non-profit social enterprise founded in Tilonia, India in 1972 has been fostering sustainable communities for nearly 50 years [39]. Working with many partners, it has spread to countries in Asia and Africa. Thousands of uneducated poor, primarily women and youth, have been trained in solar engineering, water harvesting, accounting, building, education, and health care [40]. They realize the goals of E.F Schumacher in his Gandhi-inspired vision of community development and “Economics as if People Matter” [41]. This approach, ecological, inclusive, non-violent and culturally sensitive, is also spread by agencies such as Practical Action ([www.practicalaction.org.uk](http://www.practicalaction.org.uk)) providing basic needs, buildings, tools and skills in communities with little access to financing.

Founder Bunker Roy stated that for any rural development to be successful and sustainable it must be based in the village as well as managed and owned by those it serves [42]. Such initiatives amongst the planet’s poorest involve deep local commitment to benefit and empower people. Villages are attaining better health, education, democracy, microfinancing, internet access, with a fraction of our resource use. Sadly, there are millions more who could benefit for only a fraction of the money that international agencies put into heavy top-down programs, which also often run into problems if insufficiently sensitive to local needs and cultures. Please see Figure 7.



**Figure 7.** The Barefoot Colleges, India. Source: Bunker Roy.

Buildings and other constructions use local skills, materials and labour as well as applying climatic principles from local traditions of indigenous architecture. “Appropriate Technology” has long been championed but seldom receives major financial support. Nevertheless, it’s not always a lack of money that prevents action and success. Governments in many poor countries often seem either unwilling or unable to improve the lives and built environments of their citizens. The flight from deprived rural village leads millions instead to the arguably far worse built environments of deprived city slums.

There are empowering, democratic initiatives to be found in poor and rich countries alike; leading to more sustainable and happier villages, towns or city districts. Processes of inclusive democratic participation are common to all of them. Their main focus may be on environment, economy or social development. For the Barefoot Colleges, the development efforts range from basic literacy to water, farming, buildings, nature conservation, energy and much else. Recipient of many awards, the Barefoot Colleges is about hands-on action and citizen participation in the poorest areas of the globe, building economically resilient, environmentally healthy, and socially thriving human settlements. Whereas an urban focus will differ—and some of their projects are in cities—the village is the basic typology of most rural built environment and is seen as the most important community unit for development and wellbeing. This is anything but a repressive scenario for a sustainable future. Such projects foster sustainable development as an inclusive and democratic social reality.

#### *6.7. Myth 4. Not Ecofascism: 100% Renewable in 10 Years*

In 1997 Samsø island in Denmark, a typical rural municipality experiencing serious decline, set itself a goal of achieving 100% renewable energy within 10 years. The ambitious goal was met. Much of the energy is provided by wind turbines, wind being a major resource in Denmark, as well as with district bioenergy heating, heat pumps and solar collectors. A remarkable feature is that 440 of the 2000 island households own shares in the wind farms. It is notable that this project with its primarily eco-technical goal was conceived and then implemented equally as an economic and social project.

Whilst the large wind turbines, placed just offshore, provide the renewable electricity, most homes are now heated by three district energy networks piping hot water heated by local biomass. As experienced elsewhere, the transport sector presented the biggest challenge for decarbonization. It was unrealistic to have all electric cars by 2008. Instead, an interim goal was set to export as much wind energy to the mainland as the cars, buses, and ferries consume. This was achieved by 10 more large windmills off the island coast. [16]. In a third phase, the electric mobility system is being expanded, and locals already own the largest number of electric vehicles per capita in Denmark. Please see Figure 8.



**Figure 8.** Samsø Renewable Island, Denmark. Source: Søren Hermansen.

Amongst many new jobs, the know-how developed on Samsø has led to a new Energy Academy (in a state of the art sustainable building) which now consults all over the world, especially to island communities. Manager Søren Hermansen attributes continuity to the broad local backing: “People here regard this project as vital for the future of the community”, he says. The island now has a negative carbon balance, which is a huge and inspiring achievement [43]. The Danish average annual carbon footprint has decreased in recent years thanks to various policies and measures and is now around 6 tonnes per capita; in some countries the emissions are over 10 tonnes per capita. By 2017, the 4000 residents of Samsø had an annual carbon footprint of negative 12 tonnes per capita [44].

Financing the Samsø energy transition involved a cooperative combination of municipal and private funding, with broad public as well as political backing. Other movements such as Transition Towns—also urban not rural—involve similar cooperative efforts based largely on existing local funds [45]. Hermansen insists that initiative and will are far more decisive than money in achieving such change.

There has often been a rather narrow focus on energy and on climate change. Whilst transforming energy systems and combating climate change are often perceived as being primarily technical challenges, addressing such issues can lead to broader understanding and foster the social and lifestyle changes that are equally necessary. With no special financing beyond existing Danish and EU budgets, the Samsø energy project has led to a whole new identity, stronger democracy, and a reinvigorated sense of community for the island, in addition to international acclaim.

#### 6.8. Myth 4. Not Ecofascism: Solheimar, Iceland

Arguably the world’s oldest ecocommunity, Solheimar was founded in 1930 by Sesselja Sigmundsdottir, a pioneering woman in the field of pedagogic methods and caring for orphans and people with mental challenges, as well as being an early adept of organic farming. In tune with her focus on the interaction between the individual and the environment, Solheimar is now a green oasis that numbers around 150 people and caters to several disadvantaged groups as well as many visitors. Well known for its cultural and artistic activities, Solheimar which began as no more than a collection of tents for Sesselja’s first group of foster children, now features greenhouses, renewable geothermal and solar energy supplies and agriculture, as well as some recent innovative sustainable buildings [46].

The Icelandic environment consists for the most part of completely barren volcanic landscapes. In addition to the thriving social and pedagogic community, this landscape itself has also been gradually cultivated and nurtured into a fertile and productive environment; an astonishing habitat transformation. Now covering some 250 hectares, it follows organic cultivation methods and includes the only reforestation centre in Iceland [47].



The most convincing extremely green living environments we read about are usually those of individuals or single families, as this is certainly easier to achieve in a single home or at a small scale. Those stories whilst inspiring do not satisfy our search for visions of sustainable human settlements at a larger let alone worldwide scale. Many of the early pioneers of organic agriculture, and of ecological buildings, were like Iceland's Sesselja influenced by Rudolf Steiner's anthroposophy. That approach to environment, both natural and built, is mirrored in their main focus which is on creative human development and on building resilient, caring communities. Please see Figure 9.



**Figure 9.** Solheimar Community, Iceland. Source: Katrin Magnúsdóttir.

The field of nature conservation is increasingly turning towards the idea of regenerative farming and a constructive as opposed to exploitative relationship with nature. Solheimar offers a rare example of long term, regenerative land cultivation, not just maintaining, but improving the fertility and wellbeing of a very inhospitable part of the planet, as well as nurturing the wellbeing of many disadvantaged inhabitants. This naturally requires the will and the skills for operating with difficulties and conflicts. This little society is not restrictive and rule-bound but inclusive and nourishing. As a community model Solheimar is grounded in cooperation and ethical action for the common good, with the thriving of all individuals, based on their potential not their limitations, as its founding principle. Whereas Solheimar offers a particular refutation of the “ecofascism” myth, this project also addresses several of the common misconceptions, since it is also provides a modern lifestyle and at a low cost.

It is evident that the above and similar examples all have their problems or weaknesses; and their success may change over time. With regard to the many obstacles and barriers hindering more success in sustainable transitions and settlements, it is to be noted that all the above projects stress that many of these are surprisingly banal; such as fluctuations in central or local politics; personal conflicts; tendencies to revert to conventional life patterns and consumerism. Similarly, many of the success factors they underline are simple and human, rather than technical, or even financial. These include leader individuals, the transparency and trust that exists within small communities, political backing, and the importance of setting high, no-compromise targets. Other essential features already noted are active participation processes with skilled facilitators, and integrated thinking in all the planning phases.

A brief discussion follows of a few key issues pertinent to the quest for sustainable built environments.

## 7. Discussion

### 7.1. City and Countryside

Whilst there are individual myths or misconceptions, the perceived contradiction between urban and rural solutions is itself a problematic misconception. There is if anything perhaps too much focus today on cities as “the” sustainable solution. Is there perhaps not too much focus today on cities as the location for sustainable solutions, almost as if the countryside is starting to be seen as little more than a (useful) externality?

Over half the world’s population now lives in cities. By definition, a city cannot be ecologically sustainable; any concentrated form of human settlement is inherently dependent on a hinterland with large, essential resource flows from and to the countryside; primarily though not only for life essentials of food, water, energy. As an example the total footprint of London was calculated to be 293 times the size of London itself [48]. Sustainability in material, ecological terms, requires at least a bioregion. In addition, in many cities and nearly all the megacities, much of the population consists of deprived and jobless slum dwellers. Economic and social thriving are a distant dream. Their footprint is extremely low since they consume almost nothing, but their wellbeing is extremely low too.

It follows that there is no such thing as sustainable countryside. One can indeed create and sustain life with all the basics, but without many of the goods and services that can only be provided in or from the cities, and from much further away. Including flows in cyberspace essential to modern life, i.e., knowledge, information, cultural, and social contacts. To address this, a planning model for integration of city and surrounding countryside was proposed by our group, GAIA International, in a Master Plan for Ecocity Tainan in Taiwan [49,50]. This design builds on the resource flows to and from the city. It also provides new jobs for reinvigorated rural areas. It aims to enhance urban–rural social relationships and provide a built environment that is supportive of the health implications of the biodiversity hypothesis noted below—physiological contact with natural environments. In this perspective one might even argue that the term “built environment” becomes insufficient. In essence, it aims to overcome a distinction between planning for an urban area or a rural area. Please see Figure 10.



**Figure 10.** Ecocity Tainan, GAIA International/Archilife Foundation. Source: Joachim Eble Architektur/the author.

Both city and countryside are here to stay; and both have advantages as well as disadvantages in terms of ecology, economy or wellbeing [51]. However, we must acknowledge our intrinsic need for natural surroundings, not merely psychological but also physiological, as in the biodiversity hypothesis noted below. As human settlements, city and countryside must be seen, understood, and organised together. The self-sufficient

rural eco-life is a valid sustainability alternative, but not the built environment solution for the billions.

## 7.2. The Dynamics of Change

In contrast to the eco-technical focus which is still common, is the abiding need for more focus on processes and dynamics of change. This is an area with an extensive body of knowledge, research and practice amongst professionals in our field; but where the vital role of facilitation, participatory processes and organisation is still far from sufficiently appreciated, let alone practiced. This needs to be communicated as well as funded and supported far more widely in order to achieve successes.

The above examples illustrate inspiring (and arguably to a large degree successful) sustainable practice. All have been achieved in difficult conditions—financial, institutional, political, if not all three. A common feature is the strong focus on processes of change—not only change of technical solutions but of mindset, relationships, organisation. This again points us towards the social sciences, where transition pathways are a key concept within theories of sociotechnical change [52]. The move from niche activity to broad diffusion is both difficult, and fraught with dangers such as “greenwashing”. Research and literature about sustainable development is replete, rightly so, with tools for change or transformation, with approaches such as transition management [53]. How do we make change happen, both more widely and faster? Please see Figure 11.



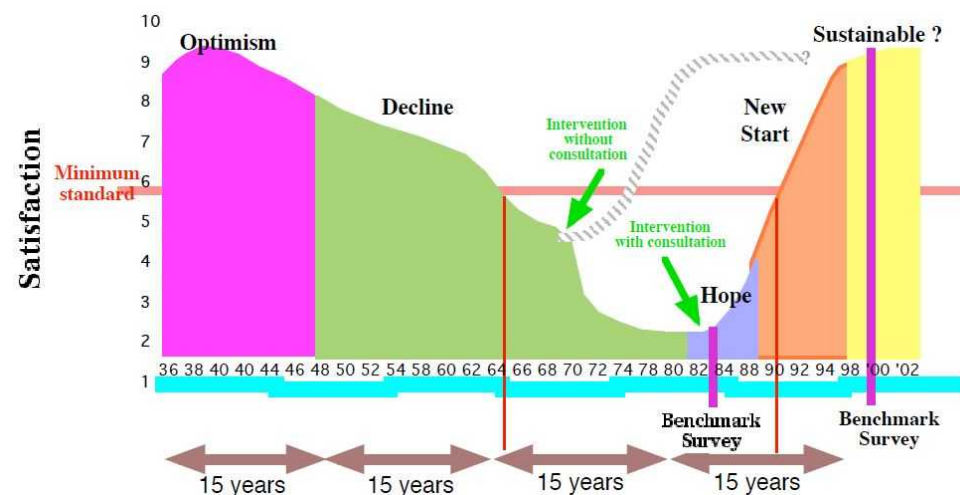
**Figure 11.** Participation: Making their own Future—The Childrens Ecocity.—with GAIA Scotland. Source: [www.gaiagroup.xn--org-9o0a](http://www.gaiagroup.xn--org-9o0a).

A key constituent of effective process is dissemination to a general and often skeptical public. Two recognised issues here are firstly, that in many scientific research programs, broader popular dissemination is encouraged but seldom mandated. The scientific journals are rarely available to and equally, inaccessible in their form, to the public. Secondly, a generic issue in our field of sustainable built environments is that communication naturally tends to lean heavily on physical imagery, whereas many of the most important “messages” lie in what is unseen, in the processes, the institutions, the social agencies, the cultural dynamics. In today’s very visual society, attractive images are important but can be either misleading or a diversion from the vital unseen messages. This is a key challenge of effective dissemination.

Another key element of sustainability is, by definition, time. This raises the essential question of follow up and effective post-occupancy evaluation processes, better known but still little practiced in the field of buildings [54]. A concise illustration of this (Figure 12) depicts the process of a slum area in Perth, Scotland, carefully regenerated over a long time period of 18 years and resulting in a World Habitat Award [55]. From being a model housing development of the 1930s, this had degenerated into a criminalized and partly abandoned slum by the early 1980s, earmarked for speedy demolition. A long and inclusive



process by GAIA architects in Scotland led to new life and complete social and physical revival of the area, including low energy refurbishing, new low allergy buildings, and management by a new housing cooperative organisation. However, who can say where the curve will go in 20 or 40 years?



**Figure 12.** Sustainability over Time? Fairfield, Scotland from 1936 to 2002. Source: Chris Butters, Howard Liddell OBE, GAIA group.

Since sustainability demands the test of time, architectural or urban projects should in this author's view never be given sustainability awards before evaluation after a few years of experience. The examples selected above have a long track record, ranging up to several decades of experience. We often hear about buildings and urban projects which fail spectacularly to live up to expectations as regards energy performance, costs or community wellbeing. Whilst objective factors such as energy, water use, or costs can be fairly easily assessed, social and community factors are qualitative and their assessment is much debated. They are still seldom included. However, it is essential that they be included in order to form a holistic picture. A study on this and other Danish ecovillages underlines the importance of the social dimensions of sustainability, wherein typical factors measured include social mix, meeting places, shared facilities, and user involvement, and how these are being underrecognized in more recent efforts to move this settlement model from niche to mainstream [56]. This is where tools such as the Sustainability Value Map [12,57] can also be useful for post-occupancy studies. It depicts in graphic form to what extent there is a good balance of ecological, economic, and social sustainability, as well as particular weak spots. It thus serves both as a design tool and later on both to evaluate past experience and to prioritize future efforts.

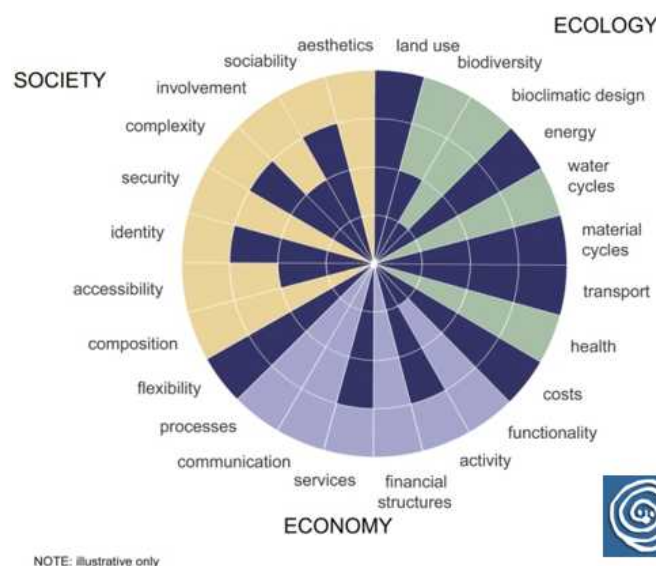
The generic Value Map illustrated here is for a typical slum. In environmental terms, slums are in many ways the most sustainable human settlements on earth: there is minimal consumption of land, energy, construction materials, transport, consumer goods, or even water. Scores (dark blue) in those areas is therefore very high. Costs are also good, i.e., extremely low. However, the many “holes” show that in social and health terms, they are a disaster. This illustrates the need for human settlements to achieve a good balance, with quality in all three areas in order to be truly sustainable. Please see Figure 13.

### 7.3. Social Sciences Research

What are the drivers, barriers, perceptions, habits that hinder change towards sustainability? Although all of the above projects have a strong environmental focus, the human, economic, and social factors have played a—if not the—key role in achieving change. For example, poverty has been a main driver in cases such as the Barefoot Colleges, with economy, i.e., employment, any employment, being a chief motivation. It is simply



an added blessing that the kinds of jobs targeted were environmental as well. Similarly, the primary goals of Solheimar were social and educational, with ecological aims as a secondary, and later, added quality.

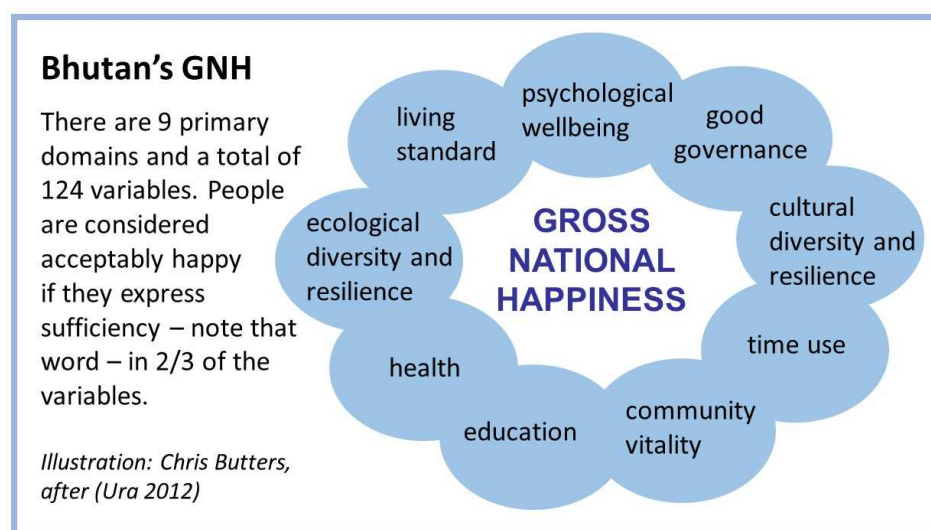


**Figure 13.** The Sustainability Value Map visualises the goal that architecture and city planning should fulfil *all three* conditions of sustainability. Source: Butters [12].

Social sciences studies of sustainability transition highlight the connections between technical, institutional and behavioural aspects. For example a seminal early article titled *Why Energy needs Anthropology* [58], illustrated how energy, far from being a technical matter alone, is deeply connected to behaviour, habits and cultural perceptions. Changes require shifts in mindset and understanding both on the individual level and amongst decision makers. The concept of agency is central, as changes are to a large extent decided and enabled by the agency of various forces in society [59]. These may be personal, political, institutional; in some societies they may be ethnic or gendered. Their dynamics may be heavily top-down or democratic, centralised or local.

An example of the social forces at play in the perspective of our topic of wellbeing is the Easterlin paradox, first stated in 1995 and with many follow up studies since, it indicates that our wellbeing does not increase above a certain level of affluence [60]. To simplify a complex debate: for poor people, rising income provides basic amenities such as better food, shelter, energy, transport etc., and greatly improves their sense of wellbeing. However, above a certain middle-class level, an ever-higher material standard of living does not seem to increase wellbeing or happiness. This too should influence our goals in designing sustainable built environments.

The three spheres of transformation towards sustainability [61] provides another framework for our understanding of these dynamics. These spheres are: the practical, the political and the personal. Briefly described, the practical sphere comprises concrete actions and solutions, such as access to and our use of energy amenities, or our consumption of meat. All such practices are social acts, conditioned and influenced by habits and by society, as well as being limited by the specific products and technologies available to us. These practical solutions, such as the type of house or the type of supermarket available to us, either facilitate or hinder more sustainable behaviour. The political sphere denotes the larger picture: “Existing structures and systems in social and ecological realms are perpetuated by cultural norms, regulations, and infrastructure, which can facilitate or inhibit practical responses” [62]. The personal sphere comprises our values and beliefs, our expectations, desires, and goals, which similarly form our consumption and environmental behaviour. Please see Figure 14.



**Figure 14.** Bhutan's Gross National Happiness model. Source: Ura (2012). Source: Butters after Ura [65].

Key seminal studies of human needs were those of Maslow [63] and Max-Neef [64]. One country actually implementing a wellbeing approach in their planning is Bhutan—where this author worked for 10 years—with their Gross National Happiness (GNH) methodology. This is now spreading worldwide [65,66] and is being explored as an approach in several countries. It has impacts on policy in all areas including that of the planning and design of the built environment. In addition to the technical and economic areas, it includes the same qualitative goals of maximizing social justice, equity, and opportunities for sustainability. This approach forms an interesting integration of the ecological, the economic, and the social. Notably, it has been designed to evaluate and achieve a good level of wellbeing of the population in a relatively poor country.

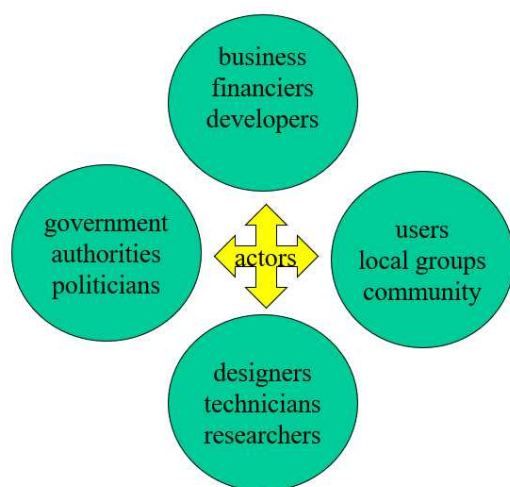
These and related social science studies of consumption, including those conducted by influential researchers such as Shove, Wilhite, and Sovacool [58,59,67], raise many relatively new perspectives, both on sociocultural processes of change towards sustainability, on urban living, and on the impacts of different types of habitat. They are receiving more attention in some countries, and amongst researchers, but these approaches are still unheard of in many countries, also in design, engineering and planning circles.

Whilst recognising or even moving beyond the “classic social theory triangle of agency, structure, and meaning, or the three ‘I’s of interests, institutions, and ideas” [68], there is one further important reason to strengthen our focus on the social sciences approaches to sustainability in the built environment. This reason emerges as a key finding from all the above and many similar projects. It is, briefly stated, that if one “gets the social aspects right”, then the rest is far more likely to follow. The concept of agency relates not only to people but to institutions, habits and existing structures that empower or enable certain forces in society. However, in all cases, those potentials have to be applied (or changed) by persons. In other words, where one has effective agents, with the will and vision, then they are far more likely to find both the eco-technical solutions, and even the finance. These prime movers may be in the form of pioneer individuals, local groups, inspiring architects, leader politicians, constructive bureaucrats in planning departments, and others.

The same message emerges, indeed, from many “failed” eco-experiences. Two common forms of this are, firstly, well-meaning and even well designed top-down projects that fail because they lack local understanding and support, and secondly, initiatives which decline or collapse largely because key individuals leave or they lose the backing of other supportive actors. Here, too, it is in the social sciences domain that we detect the critical weak areas. It is for this reason too, that many sustainability initiatives such as the eco-

illages place a huge emphasis on techniques for social communication, group dynamics, and conflict solving.

Figure 15 illustrates four essential groups of actors in such processes. A commonly expressed experience is: if one of the four is left out, the chances of enduring success are small. The case studies above exemplify variants. Hjortshøj and Solheimar for example were typical “bottom up” initiatives, where the “big” players such as government and finance became positive and gave support only later. Samsø illustrates a local, municipal level process. Vauban and the Capetown project provide interesting examples of “top-down” initiatives from city planning departments which were at the same time designed to promote and support bottom-up anchoring, planning, and subsequent control. Please see Figure 15.



**Figure 15.** Four essential groups of actors. Source: Chris Butters.

#### 7.4. Rethinking Urbanity

Should we be more critical to the very idea of large cities? There are growing issues surrounding dense human settlements, that is to say the city as a built environment. We have argued elsewhere for low to medium density and height in cities [26]. There is increasing awareness about the challenges posed by high urban densities in particular for all three areas of sustainability: footprint and resource use; resilience and economy; public health and wellbeing. In this regard, five briefly stated points are as follows.

Firstly, in public health terms, pandemics pose serious issues regarding concentration, both on the micro level of living environments in small urban apartments where people are confined, and on the urban level with the many activities that involve large concentrations of people. This is, in addition, not only a health issue, but as we have argued elsewhere [69], an equity issue too because it particularly affects the poor in the world’s megacities, on both levels. At the individual level, one-room shacks may house a dozen people, whilst at the urban level it is the poor who most often have to move around on foot or work outdoors and are thus most exposed to noise, traffic, crowds, and pollution.

Secondly: the Biodiversity hypothesis in medicine, which is gaining increased attention, further problematises the city as built environment. Cities provide almost no contact with nature or with varied microbial and other flora, but this is essential for the development of strong immune systems [70,71]. We need nature, literally. “Urban living in built environments, combined with the use of processed water and food, may not provide the microbial stimulation necessary for a balanced development of immune function . . . an environment with diverse macrobiota and microbiota modifies and enriches the human microbiota, which in turn is crucial in the development and maintenance of appropriate immune function” [72]. For a city, extensive green-blue infrastructures are essential, even though they only provide limited interaction with the natural world. The more extensive the urban environment of a region, the less nature is available nearby. Here, too, the poor

are the least likely to have the green spaces, or the time and resources to access nature. The biodiversity hypothesis relates directly to pandemics, but also to public health and human resilience generally. Please see Figure 16.



**Figure 16.** Wellbeing and Contact with Nature: Hjortshøj. Source: Hjortshøj.

A third and fast growing issue is that of Urban Heat Island. This has long been recognized, but it is now seriously compounded by global warming, and threatening to make many cities virtually unliveable [73]. Heat events are having major effects. About 70,000 excess deaths resulted from the European heat wave of 2003 [74], in what are far from the hottest or least well-equipped regions. It needs to be recognized that this is also very much an equity issue. Most of the world's poor live in the megacities, most of which are to be found in the hot climates; and it is the poor who are most exposed to dangerous heat stress in addition to pollution [69].

Fourthly, in terms of energy and climate emissions, there are reservations to be made about the efficiency of the popular “compact city” idea. This applies especially to very large scale, dense and high-rise cities as a settlement typology; it must be remembered that compactness also implies a concentration of negatives: such as congestion, noise and pollution, and high land prices [26]. The compact city has long been championed for its advantages in terms of transport emissions and mobility; but this may be outweighed by other negative factors [74]. The overall size of cities or conurbations is obviously one factor. The perception that high urban density is favourable, even for sustainable mobility, needs to be reconsidered. Unless private car use is radically reduced, high city density leads almost inevitably to the above negatives as well as stress, lost time, and high climate emissions [75].

Fifth and finally there is the emerging knowledge about city living and consumption. For example, research on “Situated Lifestyles” indicates how life in an urban environment can in several ways more or less compel us to higher consumption [76]. Social pressures add to this. Whilst there are very varied cultural contexts, the behavioural aspects of city living may in many cases negatively affect sustainability.

It should be added that in order to combat or alleviate the above problems, good technical quality is necessary. However, this is far from guaranteed especially in the developing world's fast expanding megacities. Cities can be built to a high standard, i.e., expensive, including ample blue-green spaces, infrastructures, efficient public transports, etc., but given the financial and other resources needed, this is most unlikely to be the case for many decades to come for millions at the bottom of the pyramid. In reality, low-quality high-rise districts may be no better than vertical slums.

Whilst the examples above include urban projects, the rural lifestyle is naturally no guarantee of healthy immune systems, inclusive processes or sustainable consumption behaviour. All four of the discussion areas are related, including the first point about



achieving a good mix of urban and rural, not only in built environment terms, but in life conditions.

Hence, there are specific challenges that make achieving sustainability very challenging in dense urban environments. These issues need to be addressed when considering our overall future policies for human settlement, and what forms of built environments, especially urban, are most conducive to sustainability.

## 8. Conclusions

The above few examples show in differing ways that sustainable living can be technically achievable, affordable, and pleasant. They also show that this can be achieved at different scales, i.e., family or large group, farm or urban district, and in different socio-cultural contexts, from rich to poor and from developing to industrialized countries. This paper is based on exchanges with and visits to most of these and many similar initiatives over a period of over 20 years. This has included arranging over 30 study tours for architects, engineers, builders, politicians, ministries, housing associations, and others. Hearing about obstacles, weaknesses, and failures is also the best way to avoid them. Seeing is believing, and there is little more fruitful than conversations with those responsible for planning, organizing, and living in such projects.

Beyond our present scope is the question of effective means. Should one preach, legislate, or subsidize? One may need all of the above, but where, how, and in what contexts? The increasing availability of technical solutions makes change easier but only if that change is seen as desirable, and facilitated by government and economic policies. Policy is a vast area and cannot be explored here, but it is vital for our professions, whose focus is often on the physical and technical solutions, to note how the social science approaches to change and to consumption are emerging as a key to understanding and addressing all the above issues. Nevertheless, whatever the strategies and means, we underline again the vital influence of real-life projects, with many scales and contexts, that can be communicated as attractive examples of sustainable built environments, as well as being scientifically tried and tested.

The very diversity of examples above points to important issues, including the four raised in the above discussion section, namely about the city–countryside relationship, processes, the role of the social sciences, and the question of urbanity.

The Covid-19 pandemic thrusts upon us new questions about sustainable built environments. Ironically, the pandemic saves thousands of lives through reduced air pollution, as well as by reduced global energy use and climate emissions. These ironically positive effects have one basic reason: that Planet Earth Inc. takes a break from economic growth and consumerism. Here, we face another, greater and more insidious myth: the belief in “normal”. That is, the normal of endless material growth and consumption (Butters, 2020) in ever more complex, sophisticated, yet in some ways vulnerable built environments. Is a city “normal”? A suburb? A slum? Is a secluded ecovillage “normal”?

To see with good examples that sustainable living can be a positive shift is a key to achieving change. The good news naturally needs many cautionary words. Sustainable solutions are possible, but all forms of built environment have positive and negative aspects. An overarching “myth” might be a tendency to claim that there is only one good answer, with diversity being a keyword for healthy, resilient human settlements, just as it is in nature. We face choices that are both individual and collective, personal and political, practical as well as intangible. If wellbeing is the goal, then the design goal is, to use our GAIA group motto, buildings and environments that are healthy for people and for the planet. That goal should guide how we shape our world, both what and how we plan, how we live and in what kinds of human settlements. Finally, it is important to recall that the success stories as well as newer knowledge and important issues associated with built environments, such as those outlined above, are very little known in many regions or outside of our own circles.

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