

A paradigm shift toward sustainable community design: holistic approaches for improving community relations in urban spaces

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Abstract: Cities are ever-changing complex environments that function based on multifaceted systems including social, economic and cultural issues paired with the spatial, historical movement. However, the current approaches to designing cities are not suitable for multifaceted systems. Simulations tend to focus on single issues and only address the physical aspects of the city. The physical city is only a small part of what makes ocular "good" space. Simply making spaces that work does not necessarily mean that they are good and beneficial socially. Cities are seen as large conglomerates of people and structures when in reality it is the product of many small local connections that are grouped together. These local connections are the defining factors of cities, including: how neighborhoods interact with each other, the density of uses, local typologies, the cultural context of the city, years of historical development, etc. Thus the real problem becomes the global cities' defining relationships at the local level and the local relationships' ability to fit into a global scheme. As population growth brings challenges to cities around the world, new technologies will increasingly revolutionize the way we organize our lives and communities. Contemporary urban community design is not simply about integrated transport or sustainable housing. The

accumulation of electronic data that is online, digitally accessible and searchable, creates other opportunities for citizens to know more about their neighborhoods and the wider world they live in, and to use that information on a daily basis.

This paper presents new conceptions of sustainable community design in urban spaces based on a holistic analysis of our new environments. Its specific goal is to study a shifting of paradigms of community and to improve more sound and sustainable community relations through appropriate design works.

Key words: *sustainable, community, urban, holistic, organicism, healthy, relations*

1. Introduction

Technology and social networks will shape urban spaces: The sense of community is already altering, but will evolve much more in the future, and encompass a sense of space and place beyond our current understanding of social networks both in the real and virtual worlds. We will have to consequently re-evaluate the way we live and use urban space. Urban design will have to necessarily undergo a paradigm shift to align with these new behaviors.

Such changes will have a special impact on designers and urban planners who must become, argue some, more innovative and flexible, with a more open and holistic approach to their work. Philipp Rode, executive director of the Cities Program research unit at the London School of Economics says: "A new holistic approach is central to the sustainability agenda. There should be collective decision making from both the public and private sector, free of managerial constraints."¹

2. Philosophical background: Organicism

As long as men exist, men and society are part of *related whole*². Regardless of our intention, we are always open and exist only in the web of relation with the whole universe. Furthermore, we are part of an infinite series and since the series is infinite, we had better take account of that fact, and admit into our thinking these infinite possibilities.³ As a part of the related whole, we and the whole universe affect each other in all aspects. We are organisms that do *prehension* and *concrecence*.⁴ But we, human being become keenly aware of reciprocal give and take between men and the whole environment after suffering from the retaliation of the environment. Today, the crucial themes of the ecology, especially environmental disruption, are intelligible even to a child and become new zeitgeist of the day. So many problems and limitations have been pointed out, and equally many solutions have been offered.

A mass production society by the exploitation of nature and the workers, destroyed nature and alienated men respectively, has been criticized. Also Bauhaus' functionalism has been criticized for its

¹ *Guardian* (2011) "How do we create an holistic urban environment?" 5 October

<http://www.guardian.co.uk/what-future-urban-living/how-do-we-create-an-holistic-urban-environment>.

² *related whole* is one of the main notions in the Chinese Mahayana Buddhism, esp. the Hua-Yen School.

³ Lucien Price recorded. (2001) *Dialogues of Alfred North Whitehead*. p. 234. New Hampshire: Nonpareil Book.

⁴ As one of the main concepts of the Whiteheadian philosophy of organicism, they are similar concept to "feeling" and "giving birth to" respectively.

something mechanical, operational, uniformic, undifferentiated, expedient, solvable through mass production⁵. In this unsustainable situation, sustainability has become one of the most important issues. Modern civilization, began after the Renaissance period, flourished through the Industrial Revolution, and lasted for hundreds of years, could have survived both World Wars, finally reached the limits of sustainability. Viewing these collapses, we claim the discard of the inert ideas⁶ overwhelming throughout the centuries such as reason, progress, freedom, equality. *The Limits to Growth*⁷ proved the limits of progress through rational reason, and market failure demonstrated the freedom failure, and the breakdown of Communism testified the breakdown of egalitarianism.

Freedom is ultimately the value of death and destruction, As if a cell broken loose from an organism dies instead of getting freedom. Freedom should be replaced with autonomy. The intrinsic value of autonomy is the minimum principle of universal morality, and extrinsic expression of that is cooperation. Also, the principle of life is differentiation, which keeps productive forces of life energy. Absolute equality without differentiation returns to the death, losing its dynamic equilibrium.

That is the why we declare new value called health, renouncing the inert ideas mentioned above⁸. Health is new principle of harmony⁹ and everlasting creative advance, applicable to every levels of social structure including design. Unlimited proliferation without limit in modern city concluded in a necropolis¹⁰ as malignant cancer cells multiply and die in the end. City of freedom should become born-again as healthy city. And now the premises of health are moderation, simplicity, and putting up with inconveniences. Moderation of human city is dynamic equilibrium between spreading and limiting, and has to be ushered into the direction of maximization of emptiness. That is the only way we will survive in this merciless universe.¹¹

3. Conceptual framework

3.1 Sustainability

Sustainable Development is often defined in accordance with a paper titled “*Our Common Future*” published in 1987 by the World Commission on Environment and Development (WCED). This paper, commonly referred to as the Brundtland Report, defines Sustainable Development as “development that

⁵ Young-Oak Kim. *Oullim Syncacophony* (ICOGRADE Millenium Congress, Oullim 2000 Seoul keynote speech, October 24, 2000 at COEX Auditorium)

⁶ Inert ideas are merely received into the mind without being utilized, or tested, or thrown into fresh combinations... Alfred North Whitehead (1967) *The Aims of Education*. p. 1. New York: The Free Press.

⁷ *The Limits to Growth* is a 1972 book modeling the consequences of a rapidly growing world population and finite resource supplies, commissioned by the Club of Rome. (Wikipedia)

⁸ The inert ideas refer to reason, progress, freedom, equality.

⁹ Korean for harmony is *Oullim*.

¹⁰ Lewis Mumford(October 19, 1895 - January 26, 1990) viewed the evolution stages of city as polis, metropolis, megalopolis, necropolis. He was an American historian, philosopher of technology, and influential literary critic. Particularly noted for his study of cities and urban architecture, he had a broad career as a writer. (Wikipedia)

¹¹ Heaven and earth do not act from (the impulse of) any wish to be benevolent; they deal with all things as the dogs of grass are dealt with...(天地不仁 以萬物爲芻狗) James Legge trans. (1962) *The Tao Te Ching of Lao Tzu*. chapter 5. p. 50. New York: Dover.

meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987).

Questioning the meaning of sustainable urbanism takes help from a relatively new model of sustainability—the ecological model (Williams 2007). Ecology is the scientific study of the distribution and abundance of life and the interactions between organisms and their natural environment. The ecological system recognizes that everything is related to everything. Within this framework, the focus shifts from understanding sustainability as a definite product to valuing sustainability as a system of dynamic connective processes - biological interchanges, efficient use and storage of energy, and effective management of natural resources. Inspired by classical works such as *Fundamentals of Ecology* (Odums 1953) and *Design with Nature* (McHarg 1992), the ecological model derives the notion of sustainability as a process of relationships among the natural systems (such as soil, climate, hydrology) and between the natural systems, relationship to the human systems (social ethics and values), and the economic systems (allocation, distribution, and management of resources). Within the systems oriented approach, the ecological model has three important implications: (1) spatial interdependence and connectivity becomes critical to sustainable design, (2) the ecological systems approach brings a process oriented notion of sustainability, and (3) it also allows connections of the environmental systems to the social and economic systems towards generating an interconnected network of interrelations (Fig. 1).¹²

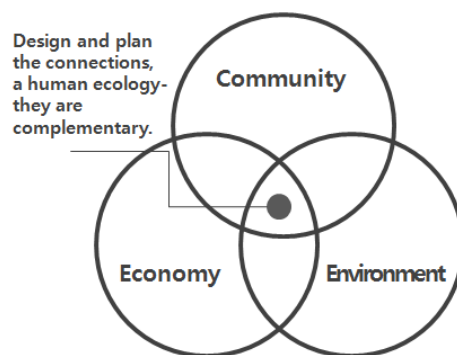


Fig.1 The Three rings of sustainability illustrate interdependence of the elements in the traditional model of sustainability.

(source: *Sustainable Design: Ecology, Architecture, and Planning* by Daniel Williams)

In following this line of thought, the individual becomes representative of the whole. From this viewpoint, we firmly believe that in order to holistically and successfully address sustainability there must be a focus on how human beings within communities, as an aggregate, form the world.¹³

¹² Anirban Adhya, Philip Plowright, Jim Stevens (2010) *Defining Sustainable Urbanism: towards a responsive urban design*. Proceedings of the Conference on Sustainability and the Built Environment. King Saud University. pp. 2-4.

¹³ Frederick Ebeneku-Anim, Ingrid Jacobson, Margaret McRoberts, Pierre Munyura (2006) *Building Sustainable Urban Communities: Can a common participatory space offer a solution?* School of Engineering Blekinge Institute of Technology Karlskrona, Sweden. p. 5.

3.2 Network theory

Communities themselves are complex systems in which naturally created networks exist. In order to strengthen communities as a whole it is essential to reach a greater understanding about the way individual within these communities interact. Understanding and catalyzing such connections generates the sustained collaborative conversation necessary for building the vision.

According to Network Theory, networks are the “*fabric of most complex systems*”(Barabási 2002)¹⁴ made of nodes connected by diverse interactions. A community, by this definition therefore is a network of people, groups and organizations. Like many networks, communities are scale free, meaning they are characterized by a universal architecture where some nodes, called hubs, have more links than others. Hubs are areas, which experience a larger volume of links connecting them more directly to the network. In social terms, hubs are basically hotspots where the exchange of people, ideas, or information occurs frequently. In network theory a hierarchy of hubs determines the structural stability, dynamic behavior, and robustness of a community (Barabási 2002). For a healthy community it is essential to incorporate the scattered clusters and nodes within a community by knitting them to the major hubs in order to access the social capital embedded within the community.

In most communities there are active leaders, called network weavers, who are engaged in facilitating collaboration among various community members (Krebs and Holley 2006).¹⁵ Often what happens is that by bringing together these scattered clusters and nodes, network weavers become hubs themselves, linking the various nodes together. Unfortunately, when this occurs not only does this grant an individual disproportionate power, but also makes these newly formed links extremely vulnerable. Networks may therefore become dominated by the weaver or become vulnerable to fragmentation in the case of the weaver’s withdrawal (Krebs and Holley 2006). According to Valdis Krebs and June Holley, a robust community calls for “many collaborations among community members”. Essentially this means creating a multiple hubs and spokes topology, rather than the one wheel and spokes model. This can be achieved by the creation of a space that would allow for different nodes to be interwoven and interact creating a state of emergence.¹⁶

3.3 Healthy Urbanism: A Holistic View of Urban Design

Healthy urbanism advocates for a holistic view of urban design that considers health, the environment, social relations, political processes and the economy as part of the development process. It posits that neighborhood design elements including land use, design character, transportation systems, sustainability, and density impact a neighborhood’s health, environment and quality of life. The connection

¹⁴ Barabási has found that the websites that form the network (of the WWW) have certain mathematical properties. (Wikipedia)

¹⁵ Valdis Krebs and June Holley (2006) *Building Smart Communities through Network Weaving*

¹⁶ Frederick Ebeneku-Anim, Ingrid Jacobson, Margaret McRoberts, Pierre Munyura (2006) *Building Sustainable Urban Communities: Can a common participatory space offer a solution?* School of Engineering Blekinge Institute of Technology Karlskrona, Sweden. p. 9.

between health and urbanism goes back almost as long as cities themselves. It was health concerns in many industrial-era cities that drove people out of polluted and unsanitary urban cores and into the first suburbs. Now the tables have turned. Evidence is mounting that the suburban lifestyle is causing health problems. Many chronic diseases - including obesity and diabetes - as well as premature mortality, cardiovascular disease and poor mental health are associated with the sedentary and isolated populations exacerbated by our sprawling, auto dominated urban form.

Another impact of urban form on health relates to social capital and mental health. The WHO estimates that by 2020, mental ill health will be the third leading cause of disability life-adjusted years globally. Some research indicates that there are higher levels of social capital in more walkable neighborhoods suggesting that urban form is important. High levels of social capital decrease the risk of social isolation, a social determinant of health linked to increased risk of premature mortality, cardiovascular disease and poor mental health. It is clear that the quality of our cities impacts the quality of our healthy and life in general.¹⁷

4. Methodology

4.1 Analysis of urban environment trends

Looking philosophical background in the existing circumstances, we can analyze urban environment trends in the following areas:

- **Demography:** Demographic trends are essential to know as they determine the needs and requirements of the future urban society.
- **Work and Labor:** Knowing the structure of work and labor is important as it refers to the ability of the market to respond to the needs and requirements of the urban society.
- **Energy:** The intelligent use of energy is of fundamental importance for social and economic progress.
- **Mobility:** The flexible mobility of people and goods is a precondition for future urban sustainability.
- **Technology:** Communication, mobility and urban living conditions in cities rely heavily on technology and technological progress.
- **Education and Knowledge:** The evolution of the enlightened society depends traditionally on education and knowledge.
- **Entertainment and Leisure:** Urban entertainment in all its different forms, from highbrow culture to trendy sub-cultures, makes the city of tomorrow enjoyable, exciting and livable.
- **Social cohesion:** Living together in peace and mutual respect is a key element of the future cosmopolitan urban environment.
- **Governance:** Excellent plans and projects cannot bear fruits unless their acceptance and

¹⁷ Yurbanism (2011) "*Healthy Urbanism: A Holistic View of Urban Design*"
<http://yuriartibise.com/blog/healthy-urbanism-a-holistic-view-of-urban-design/>

implementation is shaped by good governance.¹⁸

4.1.1 Demography

A city lives from and with its inhabitants. Urban development reacts to the quantitative, structural and ethnic composition and changes in the population. Quantitative parameters differ greatly around the world. They are functions of economic, social and cultural framework conditions. Two very different influences shape the quantitative development: life expectancy and birth rate.



Fig. 2 Life expectancy and birth rate

The systematic enlargement of cities, planned in response, are based in terms of dimensions and infrastructure on the qualitative and quantitative needs of the population. The stability achieved in this way can serve as a yardstick for the megacities of the 21st century when quantitative growth imposes constraints on itself.

4.1.2 Work and Labor

In the service society the place where a service is rendered is less specific, more flexible, be it through the relocation of work activities to the home or through the “nomadisation” of the world of work which no longer envisages a fixed workplace and, at the same time, allows the household to move too, be it through multiple homes or through boarding houses, hotel stays. Information technology and, to an increasing degree, biotechnology influence product manufacture in the same way as materials technology and process engineering. Today, the development and sales organization influences the allocation of personnel resources to a far greater degree than production itself. The high workplace concentration in the production area is a thing of the past.

Development areas and sales organizations are geared towards other synergies when choosing a location. Science and research are decisive location factors for development work, sales and distribution work is customer-oriented in a decentralized manner. The majority of jobs are shaped to meet new parameters. The city can input its assets as an information system. The current changes in the world of

¹⁸ Jens Krause, Klaus R. Kunzmann, Rudolf Petersen, Petra Schwarz, Irene Wiese-von Ofen (2003) *URBAN DESIGN for a Sustainable Future*, European Contribution to the International Competition, 22nd World Gas Conference in Tokyo in June 2003. p. 8.

work are taking place more quickly than workers can adapt. The unsatisfied demand for highly qualified employees and the lack of demand for workers with low skills split the labor market.

4.1.3 Energy

Both the greenhouse gas problem and the impending shortage of mineral oil have to be addressed when designing energy strategies for a sustainable urban future. Mankind must shift to socially and environmentally friendly concepts. The times of cheap abundant energy will be gone, but energy services will remain affordable.

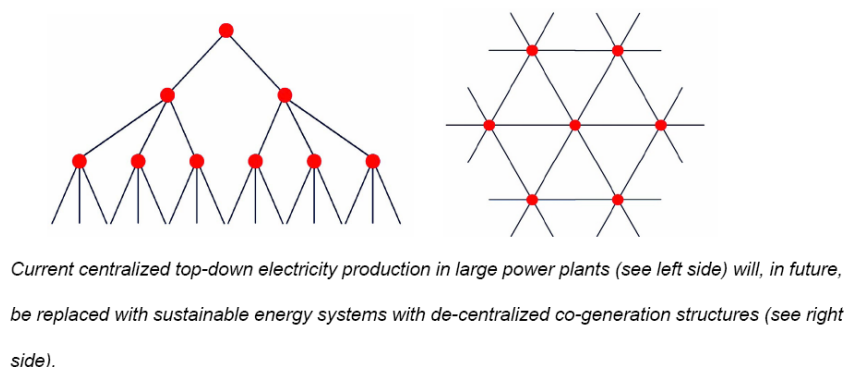


Fig.3 The change of energy system structure

Urban energy in housing, transport and production is still, to a large extent, based on fossil non-renewable resources. Without an efficiency revolution, it will not be possible to achieve either environmental sustainability or a shift to socially responsible green energy resources sustainability.

4.1.4 Mobility

Urban population growth in the cities demanded more and more urban areas, growing distances and larger diameters for movement. These factors made the development of new transport technologies indispensable. The technical and economic rules of public transport led to a special form of urban growth. New housing areas were oriented towards existing tram and rail networks or were shaped in such a way that served public transport economically. Public transport systems need a high number of customers entering the vehicles at the stops, which again should not be too frequent. These considerations led to specific urban development patterns, which became typical for large cities during the first half of the last century. The crucial factors of the current trend toward car orientation are the losses of urban community culture, social degradation, cost for the public budgets, local and global emissions, and dependency on non-renewable energy resources. These problems have to be addressed both by changing the urban structures in general, and by taking advantage of green transport solutions.

The challenge for sustainable mobility in the future can be met by integrating urban functions, focusing on new models of public transport services, and on a shift to clean transport technology. The latter

not only means introducing high-tech solutions because: People living in sustainable cities will like walking and cycling.

4.1.5 Technology

Technology is related to, infrastructure, building construction, urban design and communication. Over the centuries building construction followed the traditions and materials that regional possibilities and knowledge could provide: wood, bricks, stone, clay. They were followed later on by iron, steel and concrete, then glass and metal. The international style brought a globalization in construction methods and the corporate identity economy was recognized as the power that it is today. Specific local expertise got lost, heritage protection failed in many cases, and the export of the international style often was not at all sustainable. Big industrial prefabricated complexes were constructed to meet the needs of housing and homelessness without concepts for maintenance.

Over the last decades the mass production of prefabricated new materials, international style and the competitive marketing of global companies led to a loss of specific local knowledge and respect and consideration for heritage protection and sustainability. Information and communication technologies had most impact on changing our societies. Over the centuries oral information, personal dialogue, and later on letters and journals were the only sources of information. The revolution brought the telecommunication in the last century. The 21st century will be the century of information and the challenge to manage it.

4.1.6 Education

A new culture of education emerged. At the beginning of the 21st century, society realized that lifelong learning is the key element of successful economies and that, in an increasingly competitive world, this is what brings them out on top. Continuing learning requires face to face as well as virtual education. Urban design and architecture have to respond to these different needs. Cultural values are the result of education, they characterize society and mould identity. Buildings for cultural performances, arts and education are key elements in urban design.

The expansion of knowledge and the need for long-life learning prompted by the acceleration of developments in the field of research and production meant it was necessary to react more quickly and just in time in the future. This led to a shift in architecture and construction to more flexibility and prefabrication as one of the conditions for later recycling by changing or ending specific uses.

4.1.7 Entertainment

Entertainment evolved as an important sector of local economies. Entertainment, leisure and tourism industries are increasingly dominated by global entertainment industries and corporations. In order to make better use of the new demand for entertainment, cities all over the world organize events for a wide range of target groups, from cultural festivals to various forms of contests, which they can market worldwide. And

events require attractive stages and public space. Hence, cities invest heavily in turning city centers into appealing and safe entertainment spaces. Simultaneously, they leave flexible urban space for innovative cultural and entertainment activities.

With growing globalization and dominance of private leisure industries, entertainment is now more and more linked to shopping, eating and education. Entertainment and shopping become fun-shopping and shopping centers are built as entertainment spaces for window shoppers and tourists. Ethnic food is available everywhere. To attract visitors, teachers and kids, dusty museums are converted into edutainment complexes, where scientific and cultural information is wrapped in interactive shows and exhibitions.

4.1.8 Social Cohesion

Social and spatial cohesion have a long tradition in the medieval European city. The urban design responded to these demands of society with:

- Affordable housing.
- Mixed-use buildings (mixed used buildings for young and old, for rich and poor, for male and female, for the indigenous population and foreigners).
- Access to social and cultural infrastructure.
- Public open space.
- Public and private greens.

Provision for social cohesion determines the urban character. The built-up appearance of the cities is the mirror of the society of the time. Access to public space for everybody - over the centuries a characteristic element of the cities - is a vital element of social cohesion and needs to be preserved. The design and maintenance of public space impact on social cohesion and governance, the latter because of participation processes. Mixed use and flexible use need the consensus of the dwellers or owners. So these are matters of behavior and consciousness. Education, qualification and legal awareness are crucial elements in the ongoing necessity to meet the needs of the inhabitants of the community. On the other hand, they are the bearer of the civil commitment within the community, partners in a dialogue with administration and politicians. Networks of relevant, decision-making elected leaders in the different institutions of the community. The success of all this efforts will be a lively community without prejudices and misconceptions that social cohesion is just an utopia, it can become reality.¹⁹

4.2 New conception of community design

The meaning of “community” changes deeply in the different contexts. In the European experiences

¹⁹ Jens Krause, Klaus R. Kunzmann, Rudolf Petersen, Petra Schwarz, Irene Wiese-von Ofen (2003) *URBAN DESIGN for a Sustainable Future*, European Contribution to the International Competition, 22nd World Gas Conference in Tokyo in June 2003. pp.9-24. passim.

the communities are “intentional communities”: new social organizations emerging from a long process of individualization (and, largely, as forms of reaction to it). Vice versa, in emerging countries, the communities we refer to in sustainable community design can be seen as a balance between continuity with still existing traditions (families, villages, neighborhoods, etc.) and the innovation needed to face radically new conditions of life (and the challenges of sustainability). In each country, this balance can be different, but in each one of them it will result in the up-dating of traditions, i.e. the use of traditional social organizations as building blocks for new forms of social network (in the framework of which collaboration, mutual help, sharing and, more in general, community building can be up-dated and re-interpreted).²⁰

4.3 Community design in practice

4.3.1 Real (off-line) design

Healthy community design is planning and designing communities that make it easier for people to live healthy lives. Healthy community design offers important benefits:

- Decreases dependence on the automobile by building homes, businesses, schools, churches and parks closer to each other so that people can more easily walk or bike between them.
- Provides opportunities for people to be physically active and socially engaged as part of their daily routine, improving the physical and mental health of its citizens.
- Allows persons, if they choose, to age in place and remain all their lives in a community that reflects their changing lifestyles and changing physical capabilities.

Healthy places are those designed and built to improve the quality of life for all people who live, work, worship, learn, and play within their borders - where every person is free to make choices amid a variety of healthy, available, accessible, and affordable options. Healthy community design can provide many advantages:

- Promote physical activity.
- Improve air quality.
- Lower risk of injuries.
- Increase social connection and sense of community.
- Reduce contributions to climate change.

4.3.2 Virtual (on-line) design

The traditional definition of a community is of a geographically circumscribed entity (neighborhoods,

²⁰ CCSL central team (2007) *Creative Communities for Sustainable Lifestyles*, Project Presentation & Background Documents Draft January/2007. p. 63.

villages, etc.). Virtual communities, of course, are usually dispersed geographically, and therefore are not communities under the original definition. Some online communities are linked geographically, and are known as community websites. However, if one considers communities to simply possess boundaries of some sort between their members and non-members, then a virtual community is certainly a community. Virtual communities resemble real life communities in the sense that they both provide support, information, friendship and acceptance between strangers.

Early research into the existence of media-based communities was concerned with the nature of reality, whether communities actually could exist through the media, which could place virtual community research into the social sciences definition of ontology. The explosive diffusion of the Internet since the mid-1990s has also fostered the proliferation of virtual communities taking the form of social networking services and online communities. Virtual communities may synthesize Web 2.0 technologies with the community, and therefore have been described as Community 2.0, although strong community bonds have been forged online. Online communities depend upon social interaction and exchange between users online. This emphasizes the reciprocity element of the unwritten social contract between community members.

Internet communities offer the advantage of instant information exchange that is not possible in a real-life community. This allows people to engage in many activities from their home, such as: shopping, paying bills, and searching for specific information. Users of online communities also have access to thousands of specific discussion groups where they can form specialized relationships and access information in such categories as: politics, technical assistance, social activities, and recreational pleasures. Virtual communities provide an ideal medium for these types of relationships because information can easily be posted and response times can be very fast. Another benefit is that these types of communities can give users a feeling of membership and belonging. Users can give and receive support, and it is simple and cheap to use.²¹

4.4 Creative community

Creative communities are very diverse in their nature and in the way they operate. But they have a very meaningful common denominator: they are always the expression of radical innovations of local systems, i.e. discontinuities with regard to a given context, in the sense that they challenge traditional ways of doing things and introduce a set of new, very different ones: organizing advanced systems of sharing space and equipment in places where individual use normally prevails; recovering the quality of healthy biological foods in areas where it is considered normal to ingest other types of produce; developing systems of participative services in localities where these services are usually furnished with absolute passivity on the part of users, etc.

Additionally, these creative communities have many common traits: they are deeply rooted in a place, they make good use of the local resources and, directly or indirectly, they promote new ways of social exchange. At the same time, they are linked to networks of similar initiatives being undertaken in different

²¹ From Wikipedia, the free encyclopedia.

places, which enable them to exchange experiences and share problems at an international. Finally, and this is the aspect which most interests us here, they introduce new solutions that bring individual interests into line with social and environmental interests.

These creative communities and the promising cases they engender teach us a very important lesson: that it is already possible to take steps in the direction of sustainability. And they do this by offering us in advance specific examples of what could become “normal” in a sustainable society, fuelling up social debate and giving rise to shared views on this subject. At the same time they reflect, implicitly or explicitly, a demand for certain products and services, pointing to new market opportunities for the development of sustainable solutions.²²

5. Results and Findings

The notion of sustainable community design comes from a holistic view of urban context and is to be considered as a conceptual tool to explore some emerging (positive) signals of change in urban societies. And moving from here to build viable scenarios of sustainable ways of living. Starting the research of contemporary urban environments, in the framework of the sustainability, we realized that to make this concept clearer we had to up-grade the original definition of community relations as it appeared in the urban context. A set of characterizing key words (table 1) can help to better clarify the concepts of the community design:

5.1 Accessibility

Accessibility is a general term used to describe the degree to which a product, device, service, or environment is available to as many people as possible. Accessibility can be viewed as the "ability to access" and benefit from some system or entity. Accessibility is often used to focus on people with disabilities or special needs and their right of access to entities, often through use of assistive technology. Accessibility is strongly related to new meaning of community design when the approach involves "direct access".

5.2 Openness

Openness is the quality of being open. It sometimes refers to a very general philosophical position from which some individuals and organizations operate, often highlighted by a decision-making process recognizing communal management by distributed stakeholders (users/producers/contributors) rather than a centralized authority. Openness could be a synonym of:

- Open system: openness to experience, wiki, direct democracy, open spirituality, respect for all other beings, etc.

²² CCSL central team (2007) *Creative Communities for Sustainable Lifestyles*. Project Presentation & Background Documents Draft January/2007. p. 53.

- Transparency: openness in a utilitarian view, economical openness, open politic data, etc.

5.3 Sharing

Sharing the joint use of a resource or space. In its narrow sense, it refers to joint or alternating use of an inherently finite good, such as a common pasture or a shared residence. It is also the process of dividing and distributing. Apart from obvious instances, which we can observe in human activity, we can also find many examples of this happening in nature. Sharing is a key feature in the developing field of free software and open source software, with implications for economics. This is leading to a need to review licensing, patents and copyright, and to controversy in these areas, as well as new approaches like Creative Commons.

5.4. Participation

Participatory democracy strives to create opportunities for all members of a political group to make meaningful contributions to decision-making, and seeks to broaden the range of people who have access to such opportunities. Because so much information must be gathered for the overall decision-making process to succeed, technology may provide important forces leading to the type of empowerment needed for participatory models, especially those technological tools that enable community narratives and correspond to the accretion of knowledge. Effectively increasing the scale of participation, and translating small but effective participation groups into small world networks, are areas currently being studied.

5.5. Peering

Peering succeeds because it leverages self-organization - a style of production that works more effectively than hierarchical management for certain tasks. Its greatest impact today is in the production of software, media, entertainment and culture for the community.

Table 1 Community design keywords and its design cases

Community design Keyword	Off-line(real)	On-line(virtual)
Accessibility	- Transportation transit system - Bike pathway - Walkable urban street	- Internet - Remote access for apartment - Smart management system
Openness	- Open park - Open road - Open public policy - Open space meeting	- FACEBOOK - twitter - Youtube - twitpic - flickr

Sharing	- Co housing - Car full system - City bike system	- Open source software - Service: AWS - CCL creative Commons license
Participation	- Eco village -Volunteers for working, learning and playing together	- Wikimapia - Wikipedia - Kinetic Planar Media
Peering	- Co-production in eco village	- Production of software, media, entertainment and culture by self-organization

6. Conclusions

Community is much more than its physical form. A community is composed of people as well as the places where they live; it is as much a social environment as a physical environment. Thus, communities must not only be environmentally sustainable, they must also be socially sustainable. Of course, social sustainability cannot be created simply through the physical design of the community but then neither can environmental sustainability be created by physical design alone. Physical design cannot ensure that individuals, families and communities will lead environmentally sustainable lifestyles, although it can help to make such environmentally sustainable choices more easy. Equally, while there is much that can be done on the "design" of the soft infrastructure of the community to ensure its social sustainability, the physical design of the community can make it either easier or more difficult for communities to be socially sustainable. Thus there is a vital need to integrate the physical and social design of communities if we are to create communities that are both environmentally and socially sustainable.²³

In this new context, designers have to be considered as social actors in a society in which, as contemporary sociology points out, "everybody designs" and in which a host of active minorities, the creative communities, are inventing new ways of being and doing things. In particular, designers have to accept the fact that they can no longer aspire to a monopoly on design and that today design is not only executed in design studios, but everywhere necessarily having holistic insight into our society.

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²³ Trevor Hancock "The 'soft infrastructure' of a Healthy Community, Social Sustainability" http://newcity.ca/Pages/social_sustainability.html.

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