

Chapter 11

Self Build Design and Construction Processes and the Future of Sustainable Design Education

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The University of Derby, UK, to which, the author is currently associated, belongs to the new Universities officially getting their status as such in early 1990s and, as a young Institution has mainly concentrated to local demand on higher education initially. The University has an established and distinctive place in higher education with its commitment to open access, flexible learning systems and lifelong learning based on long standing tradition, dating back as far as 1850s. Since 1992, the University went from strength to strength by building on unique links between both employers and trainees/students in most of its courses. The University of Derby has emerged from a previous further education merge between arts, sciences and engineering.

Especially the undergraduate and postgraduate courses in the School of Technology (in the Faculty of Art, Design and Technology) have been always underpinning the ethos of widening participation and vocational lifelong learning by attracting large numbers of students mainly from the local construction industry and in part time tuition; this means that, by introducing self build processes within the curricula, the School of Technology gets one more opportunity to strengthen its links with local demand on both employment and housing market growth. In the last few years, the architectural courses and in particular BSc (Hons) Architectural Technology and BA (Hons) Architectural Venue Design have concentrated in sustainable architecture and urban planning. Very recently the entire effort of restructuring the curricula in these courses offered more opportunities to teachers and learners to be connected with live projects locally. In the last couple of years, further field research was also carried out on local demand on housing by researchers and members of the Built Environment Research Group of which, the author is Head.

The researchers worked closely with local authorities and they also proposed a scheme of retrofitting of abandoned private and public properties. During initial studies, urgent need of expansion and/or regeneration of the urban fabric emerged and, on the top of that, costing of either retrofitting or

new build was considered as well. It also emerged that, mostly young people occupy long waiting lists in both social housing and labour market. The author looked attentively through data and came almost immediately with the idea of promoting self organisation processes of new self build and/or self retrofitting; the main target of promotion will be young unemployed people who are desperately seeking a house/shelter and often live in appalling conditions inside overcrowded housing or temporary accommodation. However, the author considered the fact that, only few local people in need of a home for them and respective families were able to get started without even vocational training. And most importantly, these young people were often deprived of a certain level of education to be still able to start their own small construction business.

As a consequence, the idea of bringing together new young designers, studying and working on innovative and sustainable solutions of housing, with local self build workforce appeared to be the most appropriate combination to enable developments of new frameworks, which are capable to boost local entrepreneurship and housing activities at the same time. Moreover this idea has shown a new pathway towards new sustainable and coherent design and planning solutions. The author managed to see that, some residential and commercial areas close to the University Markeaton Campus showed evident decline in both housing and labour market. There is evidence of the presence of a significant number of unemployed young men and women (now adult population with lack of competitive skills and, often lack of officially certified training) very close to the University areas. In the last couple of years, the University has advertised the so-called 'Bites'/short courses, to attract the attention of people in the labour market who wish to improve and advance their career and also bring new skills to their employment. For some time now and as an addition to these short courses, Derby City Council and Derby Homes have been also participating in and supporting special continuing lifelong learning of adults from disadvantaged areas to be training for trading in collaboration with the University; this also happened to bring together learners and researchers of the University who really cared about new opportunities in employment. The outcomes of these programmes have been proved to be very successful precedents to reinforce the idea of self build processes of vocational learning possibly combined with academic curricula in architectural design, planning and technology.

The academic world is now revisiting widening participation not only in education, but also in links with design and building industry. In the University of Derby, we have got the tradition to attract a number of students from the so-called most vulnerable parts of local communities; young people are particularly anxious about their uncertain future in employment and the housing market. There have been locally moves towards self build activities to resolve problems with occupancy, but the entire process needs more co-ordination from an educational institution to provide affordable and guaranteed trade training. Between the researchers in our Built Environment Research Group, we have got experts not only able to deal with training of vulnerable young people in specific short courses in self build, but also we are able to

restore confidence to people to inhabit again entire abandoned districts close to centres of towns. Our purpose is to provide valuable support for economical growth of self sustained communities; practically our main aim is to create a flexible educational and productive relationship between Design & Construction Industry and Urban Renewal & Social Integration in a more humane way.

In January 2011 the Giovanni Michelucci Foundation asked the author and a couple more of international partners to participate with them into a bid for a European Leonardo Da Vinci Lifelong Learning Project with the title Best Practices in European Self build Training (B.E.S.T.).¹ As a result, self build learning and practising came to the very front. The project was submitted in February 2011 with the outcome of the application to be known in summer 2011. B.E.S.T. was submitted in February 2011 and the successful outcome of the application was known in July 2011.

Analysis

The main idea expressed by the author in this partnership of B.E.S.T. is to combine innovative and sustainable education with vocational development of especially young people, willing to acquire high standard training through a higher education institution and to be able to put hands on real sites and self build international projects. Interaction between an educational institution and the design and construction industries should guarantee strong sustainable environments of learning in higher education at national and international levels. Mobility of active learners can guarantee a straightforward transfer of knowledge from the Academia directly to the wider society, as we can see further in this study. The educational objectives of the author, which were expressed in B.E.S.T., were praised during a phone interview with an expert of ECORYS National Agency of Leonardo Lifelong Learning projects in UK. Due to initial verbal feedback received during that interview, the author was further inspired and now got the urge to work and create an initial pilot short course which should bring together her students/young designers with young vocational learners; all participants should develop particular skills through a common learning experience, leading towards socio-economical sustainability of the local community. The same intend has been further reinforced during Personal Development Planning (PDP) processes for students in Studio Design 1 and PD module; this scheme was also introduced and piloted in the architectural courses by the author. Inside their Personal Development planning portfolios, most students had included as a target for their professional

¹Giovanni Michelucci (1891-1990) was born in Pistoia, Nr Florence and worked as a practitioner for most of his life; he also became an architectural educator by teaching in the Faculty of Architecture of Florence from 1930s to 1948. Between his remarkable projects we can find the Railway Station of Florence (in collaboration with a team of his students) and the S. Giovanni Battista Church on the Motorway, Nr Florence.

development the idea of linking themselves to local communities through participatory urban and architectural design. The students have also expressed an interest of knowing more about local young people activities, needs and necessities. During the academic years 2009-2010 and 2010-11, studio design activities and PD encompassed a project with the title “70%”. In that project, students had to consider local demand; they designed new affordable and innovative housing by using at least seventy per cent recycled materials and they had to interview local young residents who showed particular interest and favoured the idea of being able to participate in self build in the near future, if they were given this opportunity.

In these teaching and learning experiences shown above, the author was helped by previous and invaluable experiences acquired during her own studies and professional formation. Having being guided and trained by inspirational architects and teachers, like Giovanni Michelucci, Leonardo Savioli, Edoardo Detti and several others, all of them lifelong researchers, she also moved forward to research and practice and later to Academia by continuing her lifelong learning alongside her teaching activity. For many years and since the 1970s, a special relationship has been maintained between the author and Giovanni Michelucci’s philosophy and legacy in architectural projects aiming at improving human life in urban and often disadvantaged areas (See some of Michelucci’s architectural ideas in *Figure 1(a,b)*). This particular association was also to be preserved later, after Michelucci’s death (in 1990).

Figure 1(a). *One of Giovanni Michelucci’s Drawings (1963) for San Giovanni Battista Church (the Church on the Motorway, Nr Florence: a place to contemplate which was finally offered to disadvantaged ‘lower-class’ communities in the outskirts of Florence in the declined area of Campi Bisenzio)*



Figure 1(b). *Interior of the main Congregation Space in the same Church*



The author did not only carry on researching on documents and drawings, now property of the Giovanni Michelucci Foundation, in Fiesole, near Florence, but also kept contact with a group of architects affiliated with this important institution and still working on either unfinished or new research projects based upon the philosophical and professional patrimony inherited from their maestro. For example, in 1999, as an expert in Urbanism, the author was invited by the Giovanni Michelucci Foundation and the Region of Tuscany to take part in seminars, conferences and workshops related to migrant integration in modern cities. As a result and by collaborating in a team of experts, she contributed in the production and publication of a special urban Charter, the *Carta della Progettazione Interculturale*, for the Region of Tuscany, aiming at integration of the immigrant population in specific urban areas in many towns and cities.¹ (See *Figure 2*, special publication of the Charter).

¹At the end of these activities, several decrees were based upon this Charter to regulate old urban fabric and new expansion areas around cities in Tuscany; these areas were responding to significant migrant movements (noticeable particularly in the late 1990s and also at the beginning of the 21st century). Some of these documents were published online, as follows: *Carta della Progettazione Interculturale* (=The Charter for the Intercultural Projects' Framework) in http://www.cultura.toscana.it/artecontemporanea/documenti.progettare_13.pdf *Le Culture dell'Abitare* (=The Culture of Housing) in <http://www.polistampa.com/asp/sl.asp?id=3072> *Porto Franco* in http://www.cultura.toscana.it/intercultura/progetto/campus/campus_abitare.Shtml and also in http://www.regione.toscana.it/regione/multimedia/RT/documents/2009/12/01/922b8e18f5a7bc3b308a33943e993d7c_ilgiornalediportofrancodicembre2000.pdf

processes in favour of continuous growth in micro-scale with immediate impact to regional macro-scales. For example, Best Practice examples, in course of development by our partner Habitat e Participation (non-profit association) in Louvain-la-Neuve, in Belgium will bring learners, teachers and professional experts together to evaluate recent projects and especially study new strategies for bringing local bodies and their roles in self build initiatives. The partners will have to work closely until 31st July 2013. The first meeting between partners/managing principal researchers, including the author, took place in the Giovanni Michelucci Foundation on 10th and 11th November 2011. The first pilot short course/workshop in the University of Derby will take place in the School of Technology within the module of Studio Design 1 and PD in April 2012; this short course will be supported by expertise in both self build and design. All experts will act mainly as facilitators between University students and vocational learners.

Critical Discussion

Let us now examine the basic theories and practices, which be followed by B.E.S.T.; they will also support this project's final aim of creating a long lasting new international framework.

Although self construction of housing has been traditionally considered as a fundamental area of renewal of the housing culture since the 1970s, today it is limited as a marginal area of the experiences of the social housing sector.

Self build and self renovation could be considered as a way, which facilitates access to housing significantly, because, for example, it helps to decrease costs in the construction industry. These processes could also be considered as the only active and social restraints to the costs of access to housing today. These excessive costs, which have now become an ordeal for most families, may primarily correspond to financial and private enterprise logic rather than responding to social needs and priorities. According to this, we may have to verify under which circumstances and for what kind of demand, these processes of self build could be feasible and necessary. As a matter of fact, we should be as well able to explore the opportunities of social interaction inside this context.

Self build has acquired immeasurable social merits, such as its compelling quality to be able to commence and, very often, to maintain for long a special relationship between a house and its inhabitants. Some author (Paba, 2000, pp. 18-23) has highlighted the fact that self build processes reinforce social relationships and inclusivity. People acquire an extraordinary sense of a place to live into spaces in which they have actively participated into their design and construction; a self built house becomes home quite easily, because the inhabitants can have overall control of all processes from the beginning to the end. In effect, most authors believe that, people can be in command of their own habitat and in plain control of all levels of socialising, of cohabiting and of

being part of a community (Tosi, 2000; Manzini, 2007).

Recently and since 2010, in some European countries, such as Italy and especially in regions such as Tuscany, research activities on the built environment have been intensified and often supported by some local authorities. With reference to Tuscany and, since 2009, the Regional Council has funded a project in which the University of Florence and the Giovanni Michelucci Foundation have been involved until recently. The main aim of the project has been to collect and analyse data through a variety of case studies and, especially data emerging in marginal and precarious living conditions. The title of this project *Housing frontline: Models of social housing inclusion through self build and self recovery* is currently underway and with more initiatives linked to it. The most innovative element of this project is that, the investigation and indexing of the case studies uses criteria, which are close to the so-called *Urbanism of Self-organisation* and also self management of the built environment. Research was carried out on self build under conditions of high urban and housing density, conspicuous poverty and also existence of compelling conflicts for access to housing market or uses of land and housing resources temporarily accessible (perhaps of no evident use at that moment of investigation). Thus, in such context, self build and urbanism of self-organisation could not only emerge as opportunities to expand the housing offer, but also as challenging approaches of rethinking and designing urban areas with community participation.

As many authors believe (Alexander, 2005; Salingaros, 2006a), the idea of creating a *geometry of power* in urban planning, in which especially housing is ordered mainly by rectangular blocks, placed in repetitive rectangular grids, does only offer the guarantee of perpetual control of the population by political administration. The repetition of the modular house to cover the entire district with strict rectangular alignment shows how top-to-bottom control is exercised; there is no allowance to interventions of creating irregular clusters of housing and, therefore, there is no space for individual variations. It is interesting to see Salingaros' et al (2006a) affirmation that complexity and variation are not only 'perceived as losing overall control ... , but also of the way decisions are made – and are thus avoided' (Salingaros et al, 2006a, zeta.math.utsa.edu., accessed on 03/04/2011). And further on, the same authors insisted:

'The natural environment becomes one more casualty of the geometry of control. Nature and life are visually "messy". Topographical features such as rocks, hills, and streams, as well as trees and plant life, pose challenges to a flat, rectangular geometry, and are thus usually eliminated. Local governments put in effort to eradicate organic elements from the "ideal" sterile environment.' (Salingaros et al, 2006a, zeta.math.utsa.edu, accessed on 03/04/2011)

In fact, the project delivered by the Giovanni Michelucci Foundation was initially organised mainly to offer the opportunity to generate a framework of practices in self build and urbanism of self-organisation, which could be

proposed as *best practices* at regional, national and plausibly at international level as well. The intention was to determine constructive suggestions for new legislative frameworks, capable to respond to both social and building emergencies. In a sense, schemes of housing were regulated and/or executed by following even *Manuals* developed by students and staff in higher education. In her article *Autocostruzione: problemi processuali e normativi (=Self build: problems in processes and legislation)*, Nuccia Comoglio Maritano explained how the students of the University of Turin tested materials, technology and structures available (often offered by manufacturers, as donation to research) in order to be able to compile and suggest a *Manual of Self Build* to some community teams ready to use it in some areas, where planning was pre-established by the local authorities. A series of workshops and tests took place in 1989, in the laboratory of the Faculty of Architecture in the then Polytechnic of Turin. However, the idea was limited in testing materials and structures inside the Academia and in offering instructions in a format of a manual of practice.¹ Thus, this is a very different thing to what we are proposing in Derby. People wishing to practice self build for themselves and the rest of the demanding community should actively participate in education workshops and should learn about participatory design in conjunction with vocational training. The learners should feel fewer restrictions possible in designing something, which could seem to be ‘messy’ initially, but it should be what they should like to see in their neighbourhood (not a grid of modular technological monsters).

As Salingeros et al (2006a) puts it:

‘In low-income housing, even that is considered an unaffordable luxury, so in the end, the project acquires an unnatural, lifeless character, totally lacking in connections to plant growth. What we need is of course, the opposite of such geometry. The appropriate geometry that promotes human wellbeing is unsurprisingly the opposite of the geometry of power... A living geometry is loose, complex, and highly interconnective. It is the geometry of the owner-built favela, and also the natural geometry of a river, a tree, or a lung. Without any imposed constraints, human beings will build according to this natural geometry.’ (Salingeros et al, 2006a, zeta.math.utsa.edu, accessed on 03/04/2011)

Also Christopher Alexander, in several of his publications (Alexander, 1975; Alexander, 2002-2005) has expressed his opinion that cities are developed by their inhabitants’ own patterns of life and energy. Instead in some specialist web pages created by people practising self build, we can read:

‘The majority of self build houses you will read about are the large scale projects – each person creating their vision of a dream home

¹Comoglio Maritano, N. (2000) ‘Autocostruzione: problemi processuali e normativi’. *La Nuova Città* 7(7), pp65-70: Although this study contains specific and important case studies, the main focus is on partial self build activities, as theoretical tests of possible future initiatives.

and their secret ambition to be their own property developer'
(www.selfbuildabc.co.uk, accessed on 05/05/2011)

Again Salingaros insists that, if we wish to redevelop and regenerate cities today, we should start from small scale projects and small amounts of money being distributed in more people possible, so that more spontaneity and human scale should be prevailing (Salingaros, 2005); he also affirms that urban growth is reinforced by small scale human oriented design following natural urban forces:

'The other potential for life comes from natural urban forces. This bottom-up component of regeneration relaxes present codes so as to allow owner-built expansion. This is a random growth model that produces squatter settlements and third-world peripheral cities. It nevertheless represents a genuine living urban process that cannot be ignored. It should be constrained so it does not grow out of control...Planners have learned ...that this urban force CANNOT be eliminated entirely – uncontrolled growth will just occur outside the reach of the official agencies. It is far better to guide this creative force so as to build urban fabric that is more usable, hygienic, and permanent.' (Salingaros, 2005, p. 164)

During the latest developments of the critical investigation by the Giovanni Michelucci Foundation though, particular emphasis was put by experts working within this establishment on strengthening further groundwork related to both building and community sustainability and also on underpinning efficiency and likelihood of diffusion. During this research project and as a case study, for example, researchers examined the ex-hospital Luzzi in Sesto Fiorentino, near Florence. (See also *Figure 3*, a poster from a recent event). This building was occupied in 2006 by more than 350 people, between Italian citizens in poverty and immigrants. Therefore, the investigation aimed at identifying which were the real identities of the inhabitants, beyond ethnic proveniences and stereotypes. The outcome of this investigation surfaced through reality and everyday ordinary lives.

Figure 3. Event/workshop about the Case of the ex-Luzzi Hospital, organised by the Faculty of Architecture, University of Florence, Italy



The entire ex-hospital is situated in the middle of a green area and a decision to move out the occupiers and sell the property seemed to be the fate of this place as a first instance. However, the Department of Urbanism and Planning of the University of Florence and the Giovanni Michelucci Foundation of Fiesole had worked together to recover a series of local links and associations through professional seminars. A new regeneration proposal emerged in order to set in motion strategies of urbanism of self-organisation and adoption of systems of differentiated means for long term hospitality, rather than an offer of temporary assistance. These strategies managed to merge functions related to the local employment trends with innovative models of experimental housing solutions, so that small local businesses should be boosted up and individuals could be assisted to access vocational education. As a consequence, individuals could finally access distinctive local services and employment, such as community farming and cooperative management of the surrounding woodlands.

The Giovanni Michelucci Foundation had the opportunity to carry on significant monitoring on self build processes at national level; the team had also the opportunity to compare national interventions with international experiences and, especially with international frameworks on social housing. It was discovered that international solutions were not only offering building solutions, but, they were also facilitating inclusive systems of housing market. The dwellings are often offered as letting properties for people with urgent needs and not enough income to buy. But, quite often, properties can be acquired by means of financial supported alleviations. In any case, the main aim is to guarantee sustainability in the construction and management of the built environment by promoting social cohesion and intercultural relationships. The self build activities have always endorsed this kind of challenges, because they contain all necessary basics and principles in them. They do not only simply respond to housing demand in a sustainable way by using materials and technologies of low carbon footprint, but also promote a sense of community by engaging with participatory common labour and practices.

Recently, the Giovanni Michelucci Foundation also carried out a critical investigation at national level and in several regions, such as Umbria, Marche, Campania, Puglia (in the South), Parma, Emilia Romagna, Piemonte and Lombardia (in the North); researchers working for the Giovanni Michelucci Foundation found and analysed more than forty case studies on self build. Currently, as it was mentioned in the introduction, the same Foundation is being involved with several Communal Councils on promoting projects in self build. Researchers found out that, since several years and precisely since 1987, an important exercise in self build had been carried out in the town of S. Piero a Sieve by a cooperative with the name of *Sperimentale 1* (=Experimental 1). This group of people, or better, a cooperative association was able to build for themselves eighteen dwellings in eighteen months. Documents from that

experience were published in the journal *La Nuova Città*,¹ the official journal of the Michelucci Foundation. (See also *Figure 4*, Fair of Self Build, in S. Piero a Sieve: poster)

Figure 4. Fair of the Self Build in S. Piero a Sieve in 2010

Festa dell'autocostruzione
San Piero a Sieve - 14 settembre 2010

ora 19.30
visita alloggi autostruttati
ora 20.00
conversazione sull'autocostruzione
ora 20.30
cena con gli autostrutturati
della cooperativa
Sperimentale 1

Sarà presente
l'Assessore regionale
al welfare e alle
politiche per la casa
Salvatore Allecca.
Sono stati invitati
sindaci, amministratori e tecnici
di Comuni interessati all'auto-
costruzione (S. Giuliano Terme,
S. Maria a Monte,Unione Valdora)

A 20 anni dalla sua realizzazione, l'esperienza della Cooperativa SPERIMENTALE 1 mantiene tutte le caratteristiche fondamentali dell'autocostruzione: costi limitati, cooperazione e coesione sociale, opportunità di formazione e lavoro. Mentre la drammatica mancanza di abitazioni a costi accessibili per famiglie di reddito medio-basso rischia di degenerare in un conflitto tra poveri, la SPERIMENTALE 1 testimonia concretamente la possibilità di una strategia che, unitamente ad altre, può rinnovare e rafforzare l'offerta sociale di casa.

La scelta degli autostrutturati di San Piero a Sieve cadde sulla casa a schiera, per evitare la tipologia condominiale (con le problematiche relazionali connesse) più tipica delle aree urbane, ma anche perché le tecnologie prescelte si prestavano maggiormente a quella soluzione.

Gli alloggi, di 3 piani fuori terra più mansarda e cantinetta, hanno due diverse metrature, la maggiore di circa 170 mq totali. Il costo medio per ogni alloggio, comprensivo di tutte le voci (acquisto dell'area, progettazione, costruzione, spese notarili, spese di mutuo) è risultato di circa 65 milioni per alloggio, di cui circa 30 anticipati da ogni famiglia e il resto acquistato tramite il mutuo.

A distanza di tempo, i materiali e le tecnologie utilizzate hanno consentito un abbattimento dei costi di gestione e manutenzione e in generale un miglior stato di conservazione rispetto alle abitazioni realizzate nelle aree adiacenti nella medesima lotizzazione. La colibazione offerta dai blocchi di Argisol, facilissimi da montare, ha abbattuto i costi di riscaldamento e garantito un elevato comfort in tutte le stagioni. Un tunnel accessibile consente di ispezionare gli impianti, evitando costosi interventi di riparazione e manutenzione.

I tempi di realizzazione, inizialmente previsti in 15 mesi, sono stati di 18 mesi: è importante, nell'autocostruzione, evitare una dilatazione dei tempi di cantiere, che comporta inevitabilmente un aumento dei costi e un effetto di stanchezza e disaffezione degli autostrutturati.

In un documento del 1987 che illustrava le finalità e gli obiettivi della Cooperativa, i soci della SPERIMENTALE 1 auspicavano la creazione della SPERIMENTALE 2, della 3, della 4, cioè una replicabilità della loro esperienza che facesse tesoro degli esiti positivi e delle problematiche emerse durante le fasi della progettazione e del cantiere di San Piero a Sieve. Un auspicio che oggi è una necessità, di fronte a un bisogno di casa che si è aggravato ed esteso.

Fondazione Michelucci

During the process of the research investigation, it became obvious that, generally no areas were especially reserved for self build processes. In early 1980s, the legislation related to social housing development and planning did not provide with areas specified and destined to self build and management. The schemes of planning permissions to be issued for all types of housing were very rigid; bureaucracy entailed long times of waiting before starting site works. The rigidity of the processes did not even allow for ultimate solutions for extensions to be erected later, because of the increase of number of inhabitants, or better, because of a family's extended needs. Both public and private housing may not be able to show flexibility in time, since a planning permission (issued at some point) limits and fixes surface, volume and services per inhabitant for a certain period of time (sometimes for a whole decade or more). Then, a family consisting of employed and/or unemployed members may have their own intensions of increasing or decreasing the volume of their house according to their ongoing changes in their life conditions and in relation to financial developments or problems. Sometimes, patterns of life can be very

¹Comoglio Maritano, N. (2000) 'Autocostruzione: problemi processuali e normativi'. *La Nuova Città* 7(7), pp63-64.

different from rules and regulations, which dictate collective urban patterns and often non-natural networks of services, hardly responding to people's real demands. Very often legislation tries to limit and even suppress evolving systems of development of entire societies and cities.

In antithesis to that, by referring to their own ideas, some authors propose:

'The aim of this theoretical material is to "give permission" for common-sense arguments; to create the conditions that will safely allow and support what in effect comes naturally. People, acting as intelligent local agents, may then apply methods that evolved during millennia of successfully performing owner-built housing — as part of the production of healthy resident-built communities.'

'This methodology recognizes and incorporates the self-organizing features of the most robust human settlements throughout history, by utilizing a "complexity-managing" approach, rather than a linear, "top-down" approach. We propose channelling the design talent and building energy of the people themselves, acting as local agents, within a system that we manage only to help generate and guide its evolving complexity. In such an approach, "bottom-up" processes are allowed to develop organically, though within constraints based upon prior experience. On the other hand, "top-down" interventions must be done experimentally and carefully (i.e., with feedback), allowing more interaction with smaller-scale "bottom-up" processes.'
(Salingaros et al, 2006b, zeta.math.utsa.edu, accessed 03/04/2011)

By considering the points discussed above, and eventually by participating into the B.E.S.T. project, the main objectives in the Built Environment team of the University of Derby (as educators and facilitators) will be:

- To train learners/people in disadvantaged areas and/or having specific needs (may be also risking social exclusion) to gain self-build skills in design and construction management;
- To support the learners throughout a two year project during which they will extend their learning programme by participating in existing and shared modules between our design and construction programmes. These special part time short programmes will finally cater to be certified as part of a special short course in self-build;
- To offer learners the opportunity to participate in specific events/seminars on Self-Build Processes, organised by participating organisations during the Leonardo project, so that they would be able to learn from best practice case studies about these processes;
- To offer learners the opportunity to know how they can start their own self-build activity to secure a house for them and their families

by designing and managing their housing projects in small family and cohabitation teams;

- To help learners to get organised to self-build or apply self-build sustainable retrofitting to produce affordable housing developments or regeneration of existing abandoned houses;
- To offer learners the opportunity to know and understand perhaps how to organise international trade links for future collaboration and continue to share best practices, as the self-build may demonstrate significant advancement in the next few years by supporting also the financial growth of sustainable communities in fast developing cities, such as Derby.
- To summarise, the main aim of the educational project is to make the self-build process accessible to people living in disadvantaged areas in towns and cities in UK (and Europe) by setting up a dedicated training course under the guidance of a promotional European network.
- To get the local authority involved as a silent partner to support with available resources, such as plots or sites in which our learners could practice and, as a result they would obtain decent and fit-for-human habitation houses.
- And mostly, to support professional self-tuition through the processes of Personal Development Planning and Lifelong Learning.

The results' dissemination strategy is a crucial part of the project which, in order to become truly effective, will need to be able to impact on the different levels involved (local, national and European). Therefore, during the initial phase of the project, the Project Coordinator will provide for the drawing up of a joint diffusion plan that will take all three spheres - European, national and local - into account. The diffusion plan will involve all partners in disseminating activities within their own national and local realities. The diffusion plan for Europe provides for the following: the utilisation of extensive networks to which the partners belong; links with other European networks with similar aims. At national and local level, each partner will set up their own regional reference networks with dissemination strategies common to all partners. In UK, the University of Derby aims to disseminate information materials in poster sessions and paper presentations in the Learning, Teaching and Assessment Conferences in July 2012 and 2013 and publications of papers in specialist journals. Staff and learners/trainees will be actively involved with this project, because mainly its endeavour will consist of mobility activities to visit partner institutions abroad (project meetings to discuss the partnership and learn about partner organisations) and also local activities in our own University in combined workshops, fieldwork, training and project research. Staff and learners will bring back to Derby experiences to be shared with other staff and learners of relevant courses in the Built Environment, in the School of Technology and inside the entire Faculty of Art, Design and Technology of the

University. The expected results and impact to the learners will be training and tuition for self-build, guaranteeing eventually a Certificate in Higher Education in Self-Build Design and Construction Management on the top of vocational training. And the most important outcome will be the promotion and further development of links between higher education and employment.

All materials from this project will become known to public domain through online platform which will allow immediate publication and will also instigate further debate. This platform was agreed during our latest meeting on 10th and 11th November 2011; this online platform will be a valuable database to share experiences and the first research tool to facilitate interaction between current partners and possibly newly conveying and/or future silent partners, such as local policy making bodies working towards inclusivity in urban planning supported by participatory methods of both design and construction. As a matter of fact, self build processes should be considered as socio-technical systems based upon quintessential natural laws of continuity and spontaneous fractality.

Conclusions

In conclusion and by talking about design and construction, as the author wishes to stress the attention in the educational processes as well, it would be appropriate to refer to an important contemporary author's criticism on *Systems capable of evolving*; she would like to refer to Ezio Manzini, professor of Industrial Design at the Milan Polytechnic and Chair Professor of Design under the Distinguished Scholars Scheme at the Hong Kong Polytechnic University, who strongly supports the idea of continuous and synchronous evolving of *socio-technical systems and natural systems*. Ezio Manzini (2007, p. 1) correctly affirms:

'...the more the socio-technical systems become extended, deep and complex, the more they influence the functioning of the natural systems that have always been the basis of our chance to live on Earth...The more the technique becomes "second nature", the more, in its design, we should learn from the "first nature" and from the extraordinary ability of its systems to grow and last in time. That is to be flexible. Nature...is a contradictory entity. It is a mesh of systems, characterised by the presence of the unpredictable, the unique, the chance. But, it is also a place of auto-organisation, auto-regulation and creative evolution of new forms of order.' (Manzini, 2007, p. 1, www.dis.polimi.it/manzini-papers, accessed on 05/05/2011)

And, it is these new forms of order that, we wish to discover again through the learning and practicing processes of self build, by also recognising another important issue raised by the same author: the *error friendliness* (Manzini,

2007) in the mutations of nature. Mutations carrying errors ‘show an excellent ability, an easier adaptation and, therefore, they enjoy selective benefits.’ So, if we talk about our trainees and learners in the near future, it may be true what Ezio Manzini affirms in his essay that, ‘*in order to describe the learning abilities of these organisms [i.e. learners in educational “mutation” process], the concept of “error-friendliness” has been introduced, meant as good disposition towards errors: a common feature of all the living systems, that allows them to face the future. A future that is wide open and unpredictable.*’ And, of course, this future will be open for a new kind of Urbanism to be further developed in order to cater self builders and learners’ own needs and necessities as well. Thus, the author is also going to introduce these learners to the current invaluable theories and practices of Biourbanism, which:

‘...acts in the real world by applying a participative and helping methodology. It verifies results inter-subjectively (as people express their physical and emotional wellbeing through feedback) as well as objectively (via experimental measures of physiological, social, and economic reactions).’ (www.biourbanism.org, accessed on 03/04/2011)

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*Self Build Design and Construction Processes
and the Future of Sustainable Design Education*

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