ECOPOLIS

Sustainable Planning and Design Principles

ECOPOLIS

Revealing and Enhancing Sustainable Design

Edited by Dimitra Babalis






ALINEA international

COHESIVE URBAN NETWORKS, THE NEW ROLE OF SCHOOL IN SUSTAINABLE CITIES

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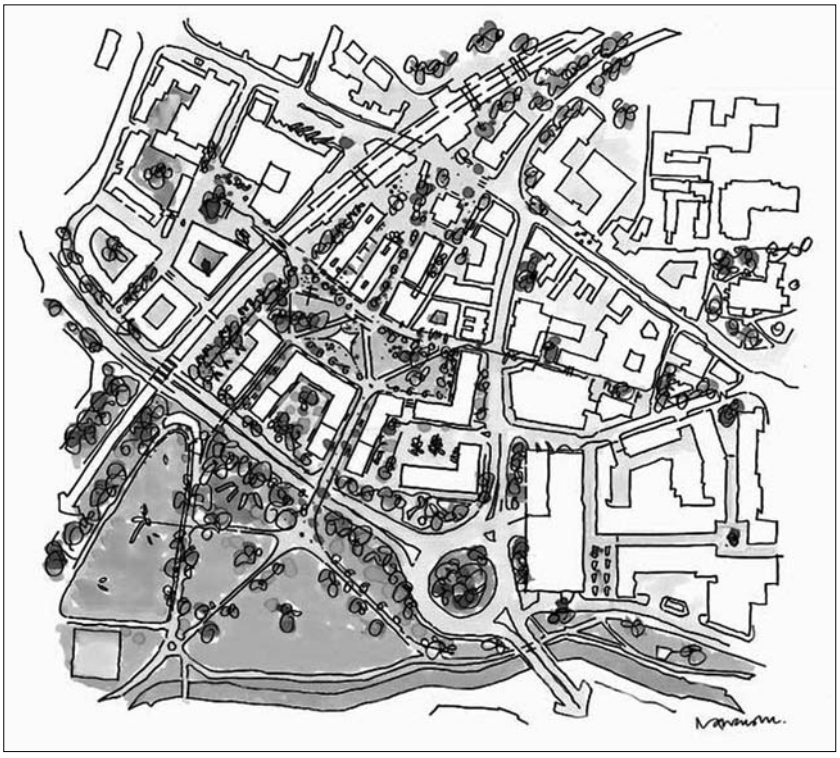
Sustainability as holistic process

Following a significant period of reconstruction, at which the main concern was the cover of basic needs, the current era imposes a more mature approach of growth, which aims at the most optimal exploitation of existing resources and will ensure essential requirements and conditions for future prosperity. In this way, the significance of Sustainability has been recognized as one of the most important principles that should condition the planning in the current era and it has been defined inter alias, as development that needs to meet the needs of the present without compromising the ability of future generations to meet their own needs (WCED, 1987). The importance of this concept, as well as the wide interpretation of the parameters that constitute it, allow us to understand it as a principle that in order to deliver the desirable results, should be implemented at all the levels and scales of urban planning. For example, designing a sustainable building segmentally, ignoring the conditions that characterize its wider environment and the effects that the building has on it, would have result in a building in which the originally planned operation will be prevented by its surroundings environment. Respectively, the urban planning with sustainable strategies of a region, without studying the underlying buildings and the way they are being manufactured under the same scope, would be rather unsuccessful since the constitutive elements would undermine the wider design. The application, that is to say of the principle of Sustainability, selectively in some scale of urban planning, without taking into consideration the rest of the scales that constitutes it, creates dysfunctions and leads to a likely discrepancy of desirable objectives and results. It is therefore imposed, even when we cannot shape the whole environment of the intervention that we are designing, to take into consideration the parameters that this places, as well as the repercussions that our proposal will have in this. At the same way, we should specify the constitutive elements of our design, even when this is not required from the project's program. It is imperative that we conceive the Sustainable planning as a holistic process, in which its principles, simultaneously condition the total as well as every element of the design.



Previous page:
R. Rogers, Arts Quarter, Chelmsford, Essex, UK, 2005
(Source: www.richardrogers.co.uk)

This page:
BedZed, Beddington, Sutton.
(Source: www. bedzed.org.uk)

Current challenges of Urban Planning

Some of the most important problems that the urban planning is called to solve today, through the use of sustainable strategies, are the fragmentation of cities, the breaking to pieces of the local societies and the alienation amongst their residents. These phenomena are intensified as the factors that shape them continue to develop. Included in them are demographic issues, such as the increasing concentration of disparate demographic teams in the urban centres, and the continuous immigration, internal and external. At the same time, the ageing of population and the increasing gap of the standard of living between the rich and the poor, make us perceive, that the cities are being separated into isolated fragments with lots of heterogeneous characteristics. It is henceforth a usual phenomenon for cities to be constituted by districts, that do not resemble each other in any way and often even the communication between them is problematic. Distances between these various districts, but also with places of basic social functions are increasing, often making them unapproachable from a part of population in which they are supposed to address. At the same moment, large areas, mainly of the older sections of cities, are considerably downgraded or even abandoned. Perceiving this situation as it is shaped today, we realise that very often the efforts for invigoration of regions via various programs of growth, fail because they are not capable of proposing a way to activate the public spaces that will bring the citizens to which they are addressed, in contact. In this way, recently designed and constructed public spaces have practically remained deserted, buildings of communal use malfunction and housing complexes so that even when its design incorporates various sustainable and ecological techniques, it fails to bring residences closer and built relationships between them. Confronted with these phenomena, the European Council of Town Planners, in the New Charter of Athens 2003, has schematized as its vision for the European Cities in the 21st century, the Connected City (ECTP,2003). According to its definition, the Connected City comprised of a variety of connective mechanisms acting on different scales. These include tactile and visual connection to the built environment, as well as connections between a diversity of urban functions, infrastructure networks, and information and communication technologies, in order to create cities, which will connect the past with the future, through a vital and vibrant present (ECTP, 2003).

Atlanta's district school network,
(Source: www.atlanta.k12.ga.us)

School as Connective Hub

Seeking ways to achieve the objectives of communication and connection both in the core of communities, as well as between different communities, we have but to recognize the importance that assembles, an already installed in the city network of social spaces: the School.

Schools have been recognized for almost two centuries, from the whole of social holders, as the most important public and social institutions (NCEF, 2004) and have entirely undertaken the responsibility of education of new citizens. For this reason the importance of their role in society is solidified in everybody's conscience, and matters related to the school and education in general, interest all the citizens. At the same time, most of the families are directly involved with the school on a daily basis, through their children and, thus, have a personal interest in actions taking places in this. Through the relationships between the children, personal relations between their parents are also created, as they at one hand constitute a community with common interests, and at the other, the children's friendships make the approach among their parents much easier (BECTA, 2001).

Another important characteristic of schools is the spatial distribution of buildings in the city's structure (DfES, 2002). They are allocated according to demographic standards and are found in most of the cases, in a walking distance from the districts they address, particularly in the schools of smaller scales. Each of them has a significant outdoor space as well as a sum of internal spaces and facilities that can be developed in various ways.

Having ensured the interest and involvement of citizens as well as the infiltration in territorial level in vital places of the urban web, schools constitute an ideal tool for the accomplishment of the objective of Connected City through the enhancement of their social role beyond the educational they traditionally play. Schools can function in this way at the local level of neighbourhood, as well as at the supralocal level, shaping networks of removed places.

School as Connective Hub at Local level

The appointment of School as the Centre of Community (Jennings, 2005) is possible to be achieved via an abundance of strategies. Each community has specific characteristics that differentiate it from others as well as particular problems that need

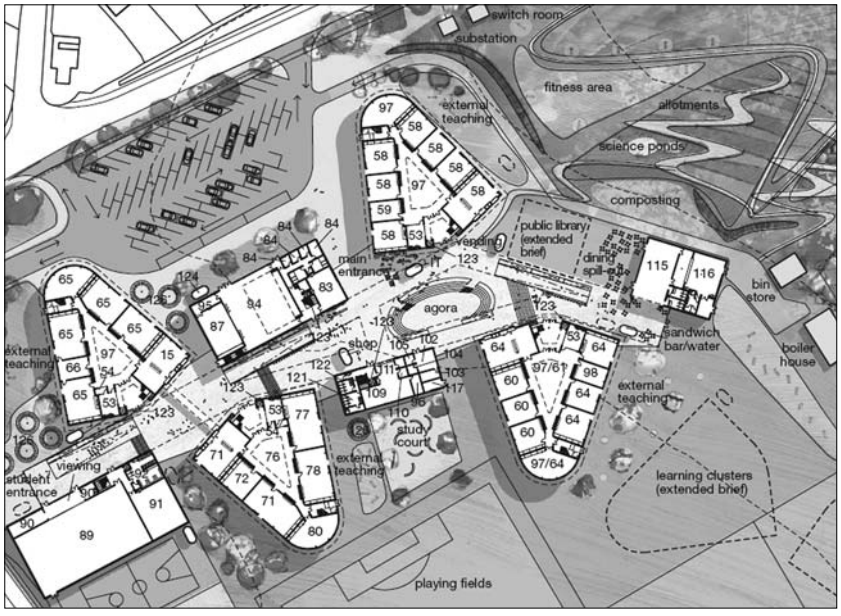
Marks Barfield Architects, Primary school
(Source: UK, DfES (Department for Education and Skills), Schools for the Future: Exemplar Designs, Concepts and Ideas, 2002)

specific treatment. Thus, it is not possible to handle all the cases in the same way and to propose similar actions; each one should be studied separately. We can however distinguish some types of connections between the school and the community via the way that they have occurred.

- **Community use of school spaces**

Schools, as previously mentioned, allocate a total of spaces that can be used by the community after but also during their standard operation. On those spaces that can be found in every school, others can be added depending on special needs and the lacks that may exist. The simplest case of common use is the attribution of outdoor spaces of schools in the community after the end of the courses. In areas of high density and lack of communal outdoor spaces, as most urban centres, the courtyards of schools constitute the most applicable solution. In this way it is possible, after schoolhours, that each neighbourhood acquires some green spaces for recreation and leisure. In these, apart from the uses that are attributed by the school's program as children's playgrounds and athletic fields, summer cinemas and theatres can operate as well as cafeterias with the possibility of use of the existing infrastructure. A necessary requirement is that the environment that is offered to the school as well as to the community has to be designed in such a way to provide safety during school hours and ensure unhindered access the rest of the time.

A second category of schools spaces that can be utilized, are those that require special equipment, like the multi-purpose hall and the gym. When designed suitably, they can function at the same time for both the school and the community, offering valuable services that are difficult to be found in each neighbourhood because of the size and cost of their facilities. Respectively, the school library as well as the dining hall, is possible to be used by the community even during the hours that the school is closed, combining a variety of social activities, such as the organisation of social events and the supply of complimentary meals to destitute in the dining hall or presentations of books and other similar events in the library. The school infirmary can operate in the same manner, offering first aid or even some simple medical tests to the members of the community, during the day. After the end of school's courses and with the appropriate supervision, the computer labs may be offered for teaching of basic dexterities or function as communal internet-caf?s, providing with the



Wilkinson Eyre Architects, Secondary school
(Source: UK, DfES (Department for Education and Skills), Schools for the Future: Exemplar Designs, Concepts and Ideas, 2002)

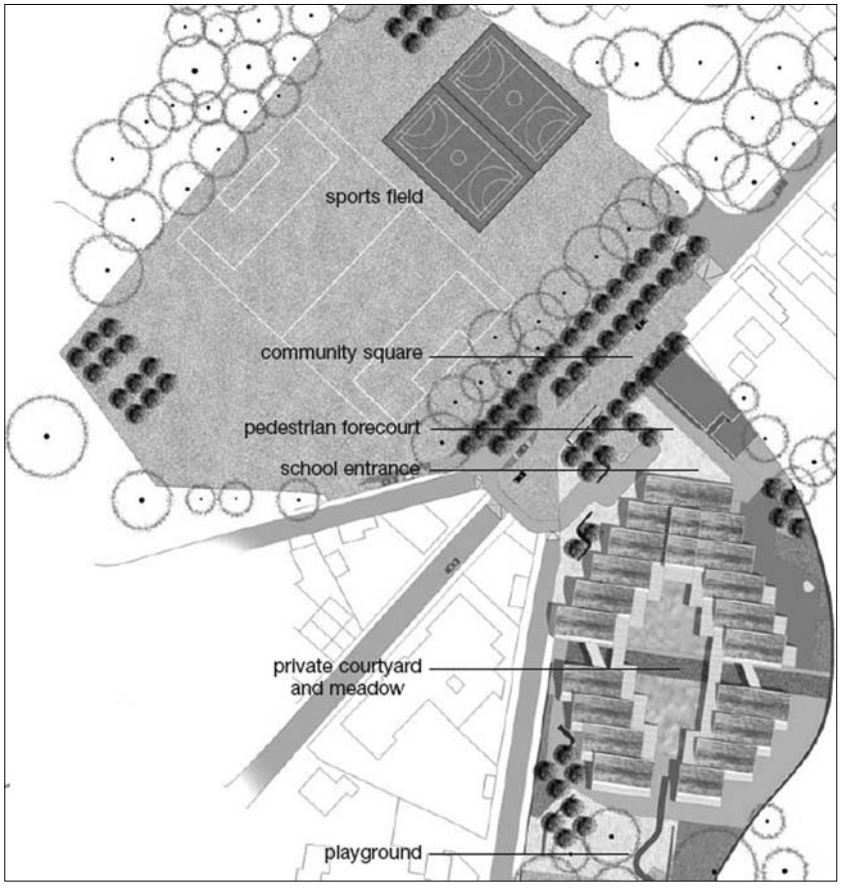
smaller possible cost, access to the internet for all residents. Courses can also be offered by the artistic and music laboratories located in the schools, functioning substantially and as centres of arts.

All the above mentioned spaces, serve basic needs of school and they can also be used by the rest of the community. However, at the creation of the school's master plan, certain spaces can be added which are not necessary for the school's operation but it has ascertained that they are absent from the local community's infrastructure (DfES, 2002). Such facilities can be a nursery and an elderly centre as well as community halls that can accommodate local associations.

According to the aforementioned, the school can be conceptualized as a multifunctional Community Centre (NCEF, 2003), which will address the whole local community or neighbourhood. It is therefore possible, schools to become places where the community will come together instead of being separated by their members' age or profession as it happens today. At the same time, the buildings will remain functional more hours during the day and almost all days of the year, instead of being limited by the schools' schedule and timetable. In this way, utilization of the available funds and resources is being achieved and the schools are turning into a live segment of the neighbourhood. From the sum of spaces of the school, only the typical classrooms can not be used by the community at the present, even if this is likely to change in the forthcoming future under the shifts on teaching techniques.

- **School use of community spaces**

The cases that were reported before have as an objective the use of spaces of schools from the community which they address. Equally important are, however, the opening of the school to this community. The enlargement of that is to say, limit of spaces that is conceived as school and the use of community's facilities for educational needs (Carnoy, 1985). In this way, students come closer to the rest of the community members, they acquire important experiences and exploit possibilities that the schools are not in place to offer. At the same time, resources are being economized since the existing communal installations

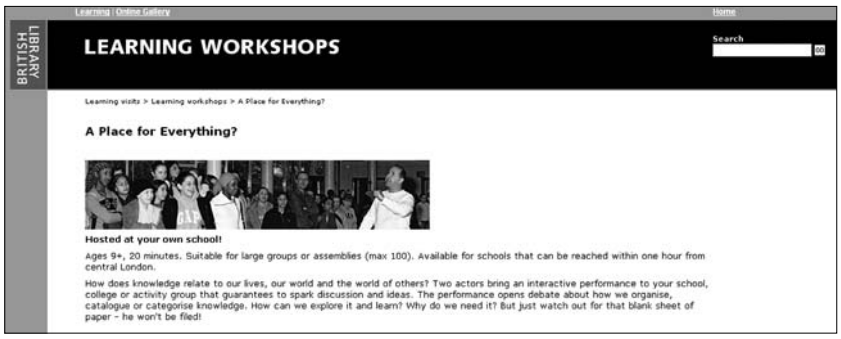


British Library Educational Programmes for schools
(Source: www.bl.uk)

are being further exploited. In order for this to be achieved, an essential condition in certain cases is the adjacency of the school with these spaces, while in others suitable modifications in the school program are necessary in order to allow regular visits to places outside the school.
The first category includes spaces whose use is desirable to be continuous during the whole day. Such are the school courtyards, that when bordering with other open and public spaces as parks and squares, it is possible to elongate and integrate them. Respectively, communal athletic facilities, outdoor and indoor fields and gyms can be used from the school at certain hours of the day, making it unnecessary for the school to allocate similar facilities. Multi-purpose halls but also classes for artistic courses and music are also not essential to be found inside the school building, when similar spaces are located nearby and can therefore be used for the school's courses. Similar solutions could be applied in the case of school libraries, as the Information and Communication Technologies makes the allocation of distinguishable space for reading and storage useless and allows exploitation of other equivalent infrastructures, with the only precondition the existence of suitable equipment.
The second category, in which the use of communal spaces imposes alterations on the school's program, is consisting of areas for technical courses and scientific laboratories. These, are not possible to be allocated in every single school because of their significant cost of equipment and maintenance but also because of the need for suitably educated personnel for their operation. They can in this way, make use of such facilities of nearby schools or other educational institutions as well as community's enterprises.
Objective of similar strategies is the spreading of school in the surrounding community and the suppression of limits that today enclaves it. At the same time, the saving on resources by the use of facilities that already exist can help making other essential infrastructures that which will be developed also from school.

●Building community partnerships

Along with the exploitation of school spaces from the community and vice versa, the current era also offers the chance of creating collaborations between the educational community and various organisations and enterprises. These partnerships could be beneficial for both sides as the school can use personnel and infrastructure in order to provide educational services and collaborate also with experts and scientists which can help forward educational practice.
The importance of Life Long Learning as an essential need for progress is an opportunity for schools to be established as mechanisms of education and training not only of children of adults alike (OECD, 2001). Thus, seminars for computer learning and for-

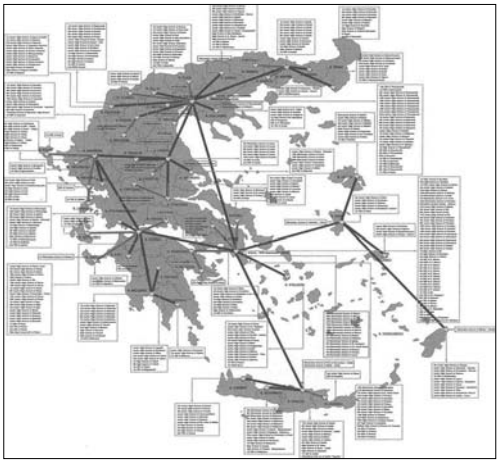


Greek School Network
(Source: www.sch.gr)

eign languages, can take place in schools from specialised professors, using school's facilities and infrastructure in the afternoon but also during the day with suitable design of spaces. Those seminars will be addressed to individuals but also enterprises that are interested in educating their employees. Similar seminars can also be organised in the fields of art, painting, sculpture, music and theatre, with multiple profits for the community.
At the same way school can attract learners, it can also attract distinguished educators that would not be employed as full-time personnel but could teach specialised topics. Collaborations with other educational institutions of the same or even different grades and enterprises will bring closer to the school individuals that are distinguished in their field of expertise in order to teach. Partnerships with cultural institutions such as museums, theatres and conservatoires, would be possible to contribute in teaching of relevant courses from experts that could take place either in schools or at site of these institutions.

School as Connective Hub in Supralocal level

Using the aforementioned actions, we can establish communication and connection between schools and local communities. However, the implementation of Information and Communication Technologies, allows scools' interconnection in multiple levels of supralocal scale with institutions and individuals, shaping thus networks of common interest about education and school. These networks can be categorized according to the attribute of their members and the character of their operating organisation, whether it is part of official education or of other interest (NAS, 2002).
School networks can exploit advantages offered by these interconnections with other schools and institutions. In this way, professors from distant schools, universities or scientific institutes can teach in one or more schools simultaneously, offering specialised knowledge of high standard that could not be transferred otherwise. Respectively, cultural institutions such as museums and libraries, can offer their services in a large number of schools, enriching the program of their courses. School networks also promote collaborations among schools, organising common courses and projects that bring in contact communities with different characteristics. Such collaborations can be particularly beneficial for schools in remote areas that would not otherwise have the ability to come in contact with such an abundance of knowledge and experience.



Educational networks can also be shaped among schoolteachers, students and parents, with special interest for the dialogue that is developed between their members via the various internet forums. Schoolteachers can exchange information regarding their profession, propose innovative teaching methods and be informed about various sources of knowledge. Students' networks can promote collaborations for events, school projects and actions, while dealing with issues of common student interest. Respectively, parents' networks can inform them for matters regarding their children's school but also bring them in contact with their schoolteachers. In this way they can be informed for the courses, grades and academic progress of their children and also contact experts of other fields like psychologists and sociologists.

Connecting all those educational institutions, shapes a wide educational network which brings together an abundance of players interested for education and simultaneously interlinks heterogeneous and distant communities, contributing in this way to the objective of social cohesion.

Cohesive Urban Networks

Each community consists of different elements and has specific characteristics which differentiate it from any other. Proposing similar actions for all of them is not possible because of their special needs. In this way the aforementioned practices shape a broader canvas of even contraindicative, some times, acts from which we can choose the fittest solution for each different case. For instance, small rural communities could make the most of a school that serves as a community centre, with multi-purpose spaces and ICT infrastructure while use of outdoor spaces is not essential. On the other hand, a school located in a metropolitan area, could use existing community facilities and be designed in such a way so as to offer its courtyard to the neighbourhood. To make all these work, it is important during the planning process, to seek for the specific community's needs and to involve every interested party: parents, children, educators, enterprises and community organizations. In every case, it is important to use the appropriate methods to establish connections among community's members and take advantage of school's central role to build networks of cohesion, in order to create for our cities a Sustainable future.

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