

A BRIEF HISTORY OF P2P-URBANISM

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P2P (peer-to-peer) Urbanism joins ideas from the open-source software movement together with new thinking by urbanists, into a discipline oriented towards satisfying human needs. P2P-Urbanism is concerned with cooperative and creative efforts to define space for people's use. This essay explains P2P-Urbanism as the outcome of several historical processes, describes the cooperative participation schemes that P2P-Urbanism creates, and indicates the possible outcomes of applying P2P-Urbanism in different human environments.

Recent history of urbanism.

The general form of urbanism implemented during the 20th century and the beginning of our own 21st century was large-scale, centrally-planned development. The most prominent “moral leaders” of architecture and urbanism have been the “starchitects”: widely-known designers whose buildings have notorious visual characteristics, and which are heavily marketed for the sake of novelty alone. Different methods of design have come into vogue during this time, which explicitly try to avoid traditional building forms and techniques that have been used for hundreds, if not thousands of years. This is done just for the sake of “not doing the same that we did in the past”.

Separately from the architecture of buildings, post World-War-II planners implemented formalist ideas regarding the “city as a machine”, setting a legal foundation in urban codes that guaranteed the Modernist transformation of cities. Mass industrialization during the 20th century led to car-centric development, where walking from one place to another is not feasible any more. Money-oriented development unrestrained by any controls produced building forms whose disadvantages have been widely discussed: skyscrapers with plenty of sellable floor space but whose form destroys the urban fabric, cookie-cutter housing that does not really fit anyone's needs, office parks that are not close to where the workers actually live. Those environments have been amply criticized by scholars such as Jane Jacobs, Christopher Alexander, Léon Krier, and others.

New Urbanism in the USA started as a way to build better environments and better buildings; the official start was in 1993 with the founding of the *Congress for the New Urbanism* (1). The New Urbanist movement began as a human-scaled

alternative to Modernist city planning: while the latter is based upon distances, spaces, and speeds that accommodate machines and the needs of industry, the former considers instead the very different needs of human beings. Among other things, New Urbanism promotes walkable communities (where people can live, work, and socialize without being totally dependent on cars), and non-rigid zoning that allows a mixture of work, industry, and housing, all done with well-proportioned buildings that borrow heavily from traditional forms and techniques.

In Europe a similar movement is known simply as “traditional urbanism”. Both groups of urban practitioners share a willingness to involve the community in the planning of their neighborhoods; in contrast with centrally-planned “hit and run” development that creates large complexes of buildings with little to no input from the final dwellers or users.

Nevertheless, New/Traditional Urbanism is still centrally planned and done on a large scale, instead of allowing the initiative for construction to be taken by the final users themselves. This is more or less an accident of the times, since existing practices for how construction is financed tend to favor large-scale development. A bias towards top-down implementation is also due to the very pragmatic wish of New Urbanists to “plug into” the existing system rather than to start everything from scratch.

As of 2010, New Urbanism has been successful in creating many new and regenerated environments fit for human needs. However, its reliance on central planning and financing is far from ideal. New Urbanists realize this and have tried to promote decentralized development, mainly with the publication of the Duany-Plater-Zyberk (DPZ) “Smart Code” for free on the Internet in 2003 (2). The ties between the DPZ Smart Code and P2P-Urbanism will be discussed later in this article.

There is evidence that people in several places of the world want to end the domination of Modernist thinking. Political movements in Europe have finally stepped in to play an active role in urban renewal. Monstrous tower blocks have been demolished, replaced by human-scaled urban fabric designed by local groups, and we have such examples occurring all over the world. This has necessitated a sharp break from the Old Left power base that still clings to a top-down bureaucratic (and authoritarian) worldview. In many places, however, the law has been abused to classify inhuman buildings as “monuments” and thus to indefinitely prolong the symbols so beloved by professional architects and planners. (This will be further explored in the section “Potential detractors of P2P-Urbanism”).

Many of us working in the disciplines of urbanism and architecture feel that it is time to drastically change the way we design and build our environment. This resolution comes after a century of modernist top-down and energy-wasteful planning. We wish to give everyone the tools to design and even construct their own physical space.

Open-source software and P2P concepts.

Software by companies such as Microsoft, Apple, and Adobe is usually proprietary and commercial: you pay a fee to acquire a *license* to use the software (you don't own the software *per se*), and the license states what you may and may not do with the software.

In particular, you are not allowed to make copies of the software you paid for; for example to give them to friends. You may sometimes not use the software for specific purposes, such as for commercial use. Moreover, you may not modify the software: you effectively cannot, as the software is distributed in binary form, not as the original *source code* written by human programmers for later execution by computers. Source code is a closely guarded secret. Software that *is* distributed with source code generally comes with substantial restrictions (e.g. "for educational purposes only"), so that people may not redistribute the source code itself, nor modified versions of it.

In 1983, a movement against this kind of restrictive licensing for software was started with the name of "Free software", with *free* as in *freedom*, not as in *free beer*. Nowadays this is commonly called *open-source software*. Curiously enough, before the 1970s software was generally free in both senses: it came as a necessary component of the expensive computers that were sold (as they would be useless without software), and users were actually allowed to modify it. Software was shared freely among people, who mostly did research in those days, just like other kinds of science. Thus, the concept of "freely redistributable and modifiable software" is not new after all.

Free or open-source software allows you to make copies of the software and give them away, or even resell them. You are given the original human-written source code and are encouraged to study it, modify it, improve it, or to reuse portions of it in other software that you write. You are allowed to redistribute modified versions. Finally, you are not restricted in what you can use the software for, and you may use it for commercial or military purposes.

Since 1983, free or open-source software has greatly increased in availability and sophistication, mainly thanks to the Internet. When people can copy software and source code easily and at nearly zero cost (as opposed to the "old days" of copying bulky magnetic tapes and shipping them to their recipient!), it is natural for people to do so, and to actually embark upon modifying the software to adapt it to one's individual needs.

The free or open-source software community, as it is called, has in turn created many tools for electronic communication and collaboration: blogs, wikis, mailing lists, shared live documents, and other tools that are doubtless familiar to people who spend a large part of their time online. The first wiki, created by Ward Cunningham, was in fact a repository of knowledge of computer programming topics (3). Later, Jimmy Wales thought that such a system would be suitable for creating an encyclopedia, and thus Wikipedia was born (4). Nowadays, of course,

Wikipedia is a tremendously useful source of information for the whole world, and which has been created entirely by volunteers.

Peer-to-peer concepts.

Early systems for global communication saw the rise of groups of computer-technical people with other special interests. For example, a large part of Usenet (a mostly-defunct system of online newsgroups) was devoted to computer topics, but it also had a large section for movie fanatics, arts and crafts enthusiasts, etc. It was the first time in the history of the world where one could easily find other people with similar interests, potentially anywhere in the world.

Over time different systems for online collaboration and communication appeared, and these were used by people who were *not* mainly interested in computers. This opportunity greatly enriched the quantity and quality of information available, and different online communities have been formed as a result, each with different interests and conventions.

Scholars have studied the behavior of these online communities, and have found that they all have aspects in common. They share knowledge profusely, they tend to be meritocracies rather than rigid hierarchies, and they are geographically widely distributed. Peer-to-peer communities occur when people are able to share information quickly and easily. People start by “finding” each other on the Internet due to their common interests. What begins as a contact with some personal e-mails among strangers could end up in self-acknowledging groups of people with a common purpose. Subgroups of people in actual physical proximity may get together to work on “real-world” issues, not just to engage in virtual conversation. The primary organizer of the wide variety of developing P2P concepts is the *P2P Foundation*, headed by Michel Bauwens (5).

Thus, P2P itself is a movement that began in spheres different from urbanism: the web, economy, free technologies, manufacturing, open-source materials, etc. These developments were and are driven by different impulses from architecture and urbanism, and which we are belatedly joining. There are some parallels we can draw from the history of adoption of free/open-source software, and which will be explored in the next section.

The combination of Peer-to-peer and Urbanism.

The P2P-Urbanism movement is quite recent, and it is drawing in urban designers and planners who have been working independently for years, mostly unaware of similar efforts being made in other regions of the world or even close by. (Some reasons for this isolation will be explored in the later section “Potential detractors of P2P-Urbanism”). People who join P2P-Urbanism represent a heterogeneous group consisting of individuals championing collaborative design

and user participation in planning; New Urbanists tied to the commercial US movement of that name; followers of Christopher Alexander; urban activists; and others. Gradually, practitioners in other fields will learn about P2P-Urbanism and bring in their knowledge where appropriate. Candidates include Permaculturists (who design productive ecosystems that let humans live in harmony with plants and animals) with a deep practical understanding of Biophilia (6), advocates of vernacular and low-energy construction, and various independent or resilient communities that wish to sustain themselves “from the ground up”.

P2P-Urbanism is all about letting people design and build their own environments, using information and techniques that are shared freely. The implications of this have a broad scope. In parallel to the free/open-source software movement, designing a city and one’s own dwelling and working environment should be based upon freely-available design rules rather than some “secret” code decided upon by an appointed authority. Furthermore, open-source urban code must be open to modification and adaptation to local conditions and individual needs, which is the whole point of open-source. For example, the DPZ “Smart Code” not only allows but also requires calibration to local conditions, and for this reason it pertains to P2P-Urbanism despite the corporate parentage of many New Urbanist projects.

One implication of this new way of thinking about the city is to encourage reclaiming common open space in the urban environment. A significant phenomenon in 20th century urbanism has been the deliberate elimination of shared public space, since the open space surrounding stand-alone modernist buildings tends to be amorphous, hostile, and therefore useless. Attractive public space was recreated elsewhere under the guise of private, controlled space within commercial centers. In this way, common space that is essential for citizen interactions (and thus forms the basis of shared societal values) has been privatized, re-packaged, and then sold back to the people. P2P-Urbanism reverses this tendency. In the next section we will explore how free participation changes the way in which urbanism is done.

Participation schemes for urbanism and architecture.

Centrally-planned environments or buildings are often designed strictly “on paper” and subsequently built to that specification, without any room for adaptation or for input from the final users. In fact, the worst examples are the results of speculative building with no adaptive purpose in mind. However, there has always been a small and underutilized intersection of P2P thinkers and urbanists/planners that have promoted participatory events outside the official planning system. Those urban interventions have tended to be temporary rather than permanent because of the difficulty of implementing changes in the built fabric.

Although the present group behind P2P-Urbanism was formed only in 2010, participatory planning and design go back decades, particularly in the work of J. F. C.

Turner on self-built housing in South America (7). Christopher Alexander's most relevant work is the book "A Pattern Language" from 1977 (8), followed by "The Nature of Order" from 2001-2005 (9). More recent P2P collaborative projects based upon the idea of the commons were developed and applied by Agatino Rizzo and many others (10). These projects rely explicitly upon defining common ownership of a physical or virtual region of urban space.

After decades of central planning that ignores local conditions and the complex needs of final users, and which tries to do away with the commons for monetary reasons, people have forgotten the principal geometrical patterns that generated our most successful human-scaled urban spaces throughout history. There *has* been an important loss of the shared knowledge that once let people build humane environments without much in the way of formal planning.

Successful urban design has everything to do with real quality of life and sustainability. With the modernist or post-modernist *status quo*, the main consideration for construction has been the visual impact of the finished product. In contrast to this, P2P-Urbanism has just as much to say about the process of planning as the final, adaptive, human-scale outcome. It represents a set of qualities and goals that are widely sharable, and which go far beyond architecture and urban design. Principles of good urbanism and architecture are widely shareable and acceptable by "everyday people", but they are not entirely obvious. For example, it takes careful explaining to convince people that a pedestrian network can be woven into car-centric cities, and that rather than making traffic chaotic, this will in fact reduce traffic, which is something that everyone would appreciate. In terms of evolutionary design, a step-by-step design process that re-adjusts according to real-time constraints and human needs leads to the desired final result, something impossible to achieve from a pre-conceived or formal design.

Let us consider briefly the kinds of participation that can be open to different people. Architects of course deal with the design of buildings. An architect familiar with the needs of a certain region may know, for example, that an 80cm eave is enough to protect three-meter tall storeys from rainfall, in a particular region with a certain average of wind and rain. A builder may be well versed in the actual craft of construction, that to build *this* kind of eave, with the traditional forms used in this region, requires such and such materials and techniques. The final dweller of a house will certainly be interested in protecting his windows and walls from rainfall, but he may want to have a say in what kind of window he wants: if he wants it to open to the outside, then it must not bump against the wide eave. Thus it is important to *establish communication* between users, builders, designers, and everyone who is involved with a particular environment.

Our hypothetical rainy region will doubtless have similar problems to other similar regions in different parts of the world. P2P-Urbanism lets these geographically separated people connect together to learn from each other's experience. Trial-and-error can be reduced by being able to ask, "who knows how to

build windows and eaves that will stand this kind of rainfall?”, and to get an answer backed by evidence.

Bigger problems can be attacked in a similar way. Instead of abstract, philosophical-sounding talk like “the shape of the city must reflect the spirit of the age”, and “windows must be designed to mimic a curtain wall” (why?), we can look for evidence of cities that are humane and livable. We can then adapt their good ideas to local conditions, drawing upon the knowledge of all the people who participate in the P2P-Urbanism community.

Construction firms that embrace P2P-Urbanism may end up being well-liked in the communities where they work, for they will actually be in constant communication with the users of their “products”, rather than just doing hit-and-run construction that is not loved or cared for by anyone.

Up to now, residents have not been able to make any changes on “signature” architecture projects, and not even on the unattractive housing blocks they happen to reside in for economic reasons. P2P-Urbanism instead advocates for people being allowed to modify their environment to suit their needs, instead of relying exclusively on a designer who does not even live there.

P2P-Urbanism is like an informally scientific way of building: take someone’s published knowledge, improve it, and publish it again so that other people can do the same. Evidence-based design relies upon a growing stock of scientific experiments that document and interpret the positive or negative effects the built environment has on human psychology and wellbeing (11). People’s instinctive preferences can be driven either by Biophilia (a preference for organic environments) or fashion (with sometimes disastrous consequences).

A central feature of New Urbanist projects is a “charrette” that involves user input beforehand, although sometimes applied in only a superficial manner. Nevertheless, in the best cases, a charrette process is not just an opinion poll; it is also a non-dogmatic educational process, a dialogue among stakeholders leading to a final agreement. The result reaches a higher level of understanding compared to where the individual participants started from.

Consequences for marginalized people.

Some proponents of the movement view P2P-Urbanism as a way to give power to marginalized people, in terms of creating the environment in which they live. This point of view is true, but it is not the whole story. A P2P process will have to somehow channel and amalgamate pure individualist, spontaneous preferences and cravings within a practical common goal. There is a vast distinction between good and bad urban form: only the first type encourages socio-cultural relations to flourish; bad urban form leads, among other things, to neighbors who never even interact with each other.

A top-down way of thinking and urban implementation has always determined accessibility to public housing and facilities built by government, and has fixed the division of power in the urban arena. We want to facilitate integration of people now separated by differences of social status, using the built environment to help accomplish that.

Marginalized people or minorities will find tremendous power in being able to build their own environment inexpensively, and knowing that they are building something good. There exists a precedent for this in the various eco-villages in Mexico that do their own construction, with local materials, and where everything is hand-built. P2P-Urbanism provides the key to successfully integrating the two existing ways of doing things: *i*) large-scale planning that alone is capable of providing the necessary infrastructure of a healthy city; and *ii*) informal (and most often illegal) self-built settlements that are growing uncontrolled in the developing world.

For marginalized people, we can expect consequences similar to what has happened with the use of free/open-source software in third-world nations: local expertise is formed, a local economy follows, and the whole country is enriched by being able to take care of its own problems.

Potential detractors of P2P-Urbanism.

P2P-Urbanism is meant to transfer power and knowledge from established architectural practice to common people. This may not be in line with the short-term monetary interests of the current holders of that power.

We suggest an analogy with the use of free/open-source software. Even developing countries like Peru and Brazil, which have said that they don't like to use proprietary software (generally written in the USA) because they fear that espionage code is embedded within the software, enthusiastically commission starchitect buildings that are constructed according to a "secret" code. They don't realize the tremendous contradiction of this action. Those who do, and who start doing their own design and construction, could save an enormous amount of money by refusing to commission signature architects to design their cities. Obviously those architects will not be happy with that prospect!

Despite superficial appearances (and a lot of self-serving propaganda), the threat from non-adaptive and energy-wasting urban forms and typologies is just as strong today as it was immediately after the Second World War. That was when historic city centers were gutted and people forced into prison-like high-rises, following a psychotic planning vision of "geometrical fundamentalism" (an ideology that aims to impose simple geometrical solids such as cubes, pyramids, and rectangular slabs on the built environment) (12). This event more than anything else defined urban alienation. The most fashionable architectural and urban projects (i.e. those that win commissions and prizes) completely avoid or destroy existing human-scale

urbanism, to impose giant forms built in an extremely expensive high-tech style. Such outrageously costly projects are routinely awarded by centralized power without any genuine citizen participation.

Movements like “Landscape Urbanism” have even tried to re-dress the current practice with the addition of beautiful “green” space, which unfortunately only serves to mask the fundamentally anti-nature qualities of those high-tech buildings as betrayed by their geometry. The surrounding gardens are wonderful and the buildings blend very nicely with the gardens in magazine renderings and pictures, but the actual buildings are the same anti-urban industrial shapes. These projects’ attractiveness is again only a superficial image and corresponds neither to user participation nor to adaptation to the human scale. Moreover, by inserting huge but inaccessible wild gardens in the middle of cities, the common urban space that people can actually use is in fact restricted.

We cannot overemphasize the radical departure of what is essentially a local shareable knowledge base about adaptive design and building (i.e. P2P-Urbanism), from the generic industrial style known as the “International Style” widely adopted in the 20th century. That approach to building promotes centralized heavy industry at the expense of local construction groups and community self-help; it ignores local adaptation and traditional techniques, and excludes P2P-Urbanism from even being considered as an alternative to present-day building practice.

There has been a near-total and deliberate neglect in academia for the topics that make up P2P-Urbanism, and the same neglect holds true for the “official” means of disseminating information as represented by the glossy architecture magazines. Nevertheless, since P2P itself is founded upon sharing and a common effort on the Internet, the severe existing informational roadblock is finally bypassed thanks to the techniques developed for information and software sharing. More than being just a set of ideas, P2P-Urbanism depends critically upon a universal means of free dissemination and transmission, and ties into educational and informational channels that bypass those controlled by the elitist champions of the global consumerist society.

Perhaps the failure in Alexander’s early project in Mexicali, Mexico turned New Urbanists away from the commons. Alexander’s owner-built housing was very successful but had a common area that did not succeed for several reasons, as described in the book “The Production of Houses” (13). Nevertheless, the phenomenal success of the New Urbanists in building Neo-Traditional developments in the US was a direct result of following Alexander’s advice of “plugging into the existing system”. We (i.e. members of the group defining P2P-Urbanism today) feel that the tensions between the private/business focus of the New Urbanists, and the commons-oriented alternative approach of the P2P activists, will sort itself out into a practical scheme that is useful for humanity as a whole. Each faction can learn from the other. The important point is the commonality of

design methods: in both approaches, the rules for human-centered architecture and urban design are open-source and are freely accessible to all.

Conclusion.

“Vitruvius famously opened the first treatise on architecture with the statement that architecture requires the interaction between practice (*fabric*) and reasoning (*ratio*)” (14). The *status quo* in the 20th and 21st centuries, so far, has been the domination of both practice and reasoning by established architectural firms and central planners. P2P-Urbanism tries to free up this knowledge and take it to the entire human population.

Re-aligning urbanism to involve the users has profound socio-political implications that are further developed by P2P thinkers beyond urban questions. These possibilities need to be investigated because it may very well occur that not only will fundamental societal changes eventually drive a revision in thinking about world urbanism, but also vice-versa.

We see P2P-Urbanism applied around the world as the only antidote to the continuing hegemony of anti-urban building schemes controlled by centralized authorities. The physical outcome for the city, which is a picture of the harmonious, partially pedestrian, and humanized community, is necessarily the product of a deep socio-cultural process; otherwise it is a fake.

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Footnotes.

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