

S.O.U.P. - Sustainable Operative Urban Principles

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1. INTRODUCTION

The need to attempt to re-formulate the professional tools has been brought up by two main phenomena: on the one hand, the world of economy and social trends is becoming more and more volatile and uncertain. As a consequence, large schemes struggle to be viable for a sufficient length of time to be implemented [1]. On the other hand, there is a growing desire for people to become more active in any aspect of society. Be it through customized objects, direct democracy, wireless communication or web sites, the need to participate is now a shared concern that extends to planning as well.

Though, these two tendencies still violently clash against the current tools we have at hand. Despite their merits as regulatory procedures, traditional masterplans are still heavily based on zoning; complex programs weaving together different needs, people's desires and, the heterogeneous nature of almost any urban environment are almost completely left out. This is mainly due to the quantitative nature of zoning; it determines height restrictions, density indexes, minimum distances, etc.; but it does not tell us anything about the quality of urban experience.

Still, how to make urban design that can be considered as a piece of art that is not just a cosmetic intervention unable to activate public/urban life? Is it possible to integrate the existing planner's toolbox with processes that can help us to seek and explore quality? What are the paradigms we have to change in order to meaningfully operate in contexts characterized by shifting factors?

2. CONTENT: ORGANIZATION, PRINCIPLES AND PARTICIPATION

The first move S.O.U.P. proposes is to replace form with organization and ideology with principles. By making these fundamental shifts, S.O.U.P. sets out an attempt to integrate current techniques with new ones able to tackle urban quality and provide an informed space for discussion and participation. Still, what do organization and participation mean in this context? How can these two worlds be of help in this endeavour?

Organization shifts the focus from single objects to the relations taking place between them. In fact, at this stage architectural form is still a secondary element that cannot grasp much of the dynamics at work simply because they are neither architectural nor formal yet. Hence, the relevance of organization. If we define quality as difference in kind – as opposed to quantity as being difference in number – we realize that this meshwork of relations comes to form an abstract space that represents the systems' qualities in difference. Its relevance is characterized by its capacity to constitute the actual space where discussion and experimentation can occur by connecting different bodies with each other. This touches one of the most debated points about zoning. Zoning has the tendency to limit discussion by imposing fixed sets of parameters. In some regards, we could simply argue that zoning is a device that allows us to go from many (inputs, requests, etc.) to one (for instance: plan). As such, it can constitute a bottleneck in which public participation struggles to come through. With S.O.U.P. we are actually proposing to keep possibilities and scenarios open so that the process could be described as going from many to many. By doing so, S.O.U.P. also responds to one of the most important needs of the profession: that of being able to operate at different levels, scales and to connect diverse institutions to foster and support change.

Still, such a space would be bereft of any value if we were not able to make any use of these differential qualities. By adopting a number of precise principles is possible to turn qualities into operational elements. Principles differ from models because they are based on and only evaluate what the system can do and not what the system looks like. In other words, they are performative by definition rather than formal. In this regard, they do not set up formal criteria that will constitute the fixed parameters against which to test system's behaviours. Principles do not have any transcendental or metaphysical meaning.

S.O.U.P. can thus be defined as an ongoing research that proposes a series of techniques to introduce qualitative parameters in a territory largely dominated by quantity and introduce choice as an experimental technique based on rigorous analysis and consequent exploitation of design opportunities. The techniques proposed here heavily rely on the use of digital tools. The capacity that digital tools have to compile several sets of data and the possibility that some pieces of software have to study phenomena in time make them ideal for this research. This allows making an even more radical departure from current strategies: on the one hand, we can begin to map phenomena that are not initially spatial but that nevertheless constitute the urban culture of a place. The presentation shows some of these mapping exercises: behavioural patterns, programmatic mixes, geographical factors are studied through animations and diagrams. As a result, specialist and disciplinary skills start to co-exist with more cultural factors that allow cutting across diverse territories.

Still, the main aim of the research is to devise a space where discussion and participation can occur. The importance of exploring this point through maps is also reinforced by Gilles Deleuze and Felix Guattari in their "A Thousand Plateaus" when they affirm: "Make a map, not a tracing... What distinguishes the map from the tracing is that it is entirely oriented toward experimentation in contact with the real... The map is open and connectable in all of its dimensions; it is detachable, reversible, susceptible to constant modification. It can be torn, reversed, adapted to any kind of mounting, reworked by an individual, group, or social formation." [2]

Therefore, each active map will point out drawbacks, strengths, and most importantly, potentials for further developments to study and exploit. The techniques used are quite simple and intuitive in order to create a seamless continuum between mapping and creation or in other words, between modelling and forecasting. The sum of these procedures we call urban prototyping. Exactly as in rapid prototyping and similar manufacturing techniques, simulation is the instrument through which people are brought together to discuss and ultimately innovate. The prototyping culture, as it has unfolded in the corporate world over the last decade, materializes problems as well as political and strategic issues in order to constantly formulate and refine questions. Its main question is "What

if?”. As Micheal Schrage describes in “Serious play: how the world’s best companies simulate to innovate”: “Prototypes and simulations can do more than answer questions; they can also raise questions that had never been asked before. Playing with a prototype can stimulate innovative questions as surely as it can suggest innovative answers. There are profound cultural differences between organizations that build prototypes primarily to create questions and those that do so to answer questions. The ratio of questions asked to questions created says a lot about the organization ‘s innovation culture.” [3]

The possibility to solve, innovate, trigger discussion through urban prototyping is also what this research conceives as sustainability. In the context of systems and planning tools, sustainability cannot regard devices to reduce energy consumption or so-called green-building technologies. It is rather about providing the instruments to support, change, adapt, and eventually implement a plan so that it becomes sustainable for a community. Perhaps, we should name this cultural and social sustainability instead.

3. TECHNIQUES: S.O.U.P. AND URBAN PROTOTYPING

This section of the paper will delve into the specifics of S.O.U.P. giving a description of how it really operates and demonstrating how some of the more theoretical claims become part of an operative tool. This will be achieved by going over the propositions for two projects in which S.O.U.P. was deployed. Particularly, it will be shown the work done on the “Finley site” (Vancouver, Canada, 2002) where the four major academic institutions of the city were coming together to create an innovative Campus. This piece of research was carried out in collaboration with School of Architecture, University of British Columbia, Canada (research awarded Wolfgang Gerson scholarship and International Council for Canadian Studies Award. Similar techniques were also applied to the entry for the international competition “Martyrs’ Square Axis” (Beirut, Lebanon, 2004) carried out in collaboration with Chora Architecture and Urbanism in London and Arup – Advanced Geometry Unit.

First of all, S.O.U.P. maps out the variables shaping a given site. Specific programs, views, infrastructure, land values, rent levels, physical densities, event densities, single points of interest are some of the variables mapped. Against this set of parameters, programs are then tested to measure their importance. A simple graph representing the change of value along the vertical (z axis) axis will help to visualize them in space. By stringing together each individual curve, a series of surfaces materialize; their forms directly represent the values of one of the parameters over the area studied. By using animation techniques, specific aspects can be modelled individually and then layered on top of each other; similarly, the degree in which a singular event affects the overall configuration can be taken into account according to its capacity to affect surrounding zones in diverse fashions (i.e. singular, gradient or diffuse). The case study carried out in Vancouver accounted for four types of programs to house: housing, spaces for private companies, educational spaces, and landscape.

It is possible to reconfigure the software parameters to produce as many maps as needed. The presentation will give an account of a matrix of maps issued during some of the testing exercises carried out on a specific site in Vancouver and Beirut.

Each of the maps will express one or several specific set(s) of constraints and will give rise to precise opportunities. As previously mentioned, this practice can be called urban prototyping. It is important to point out that these variations do not merely mean more possibilities. Each change in the parameters is based on different needs or desires and thus each outcome corresponds to a scenario that is qualitatively different from the others.

This space, which we defined as space for discussion, would not be valuable if we did not have a mechanism through which extracting information to proceed. A series of rules is introduced in order to encode these active maps. Vertical Permeability, Compression, Sewed/Smooth, Zero, Watershed and, Noise are the encoding principles each describing a precise behaviour in the system. For instance, Vertical Permeability registers a programmatic condition in which two or more programs co-exist and are both relevant in a specific area. Consequently, the plan must devise a strong exchange mechanism between them. Watershed marks a particular behaviour where two programs form a clear-cut separation by intersecting one other. Others just aim at introducing rigor and legibility in the whole system (i.e. Zero), and finally, Noise deals with a very particular condition. When two or more curves intersect each other several times without generating any clear pattern, an overall principle cannot be extracted. These points could be thought of as areas in which the noise-to-signal ratio is too high to make them legible. This occurs because the relations among programs become so complex that can no longer be read, and thus it is necessary to explore them as “one-off” solutions. These points will be the actual catalysts where a unique programmatic interaction should give rise to innovative solutions. The punctual nature of the noise nodes also ensures a form of sustainability of the whole system. Any large development, in fact, needs a balanced mix between large gesture with a peculiar programmatic character and fine-grain developments characterized by more traditional programs (the most frequent of which is residential).

There are some important concepts related to these principles that ought to be pointed out. First, the set of principles coming out from each set of maps still represents just a set of qualities, not architecture. These principles do not describe formal outlines to trace. In fact, this presentation does not endorse the notion of diagrams as metaphysical devices whose outcomes have value in themselves. In other words, diagrams are not used to dictate or provide an excuse for form to be justified. Here, diagrams are rather used to refine issues and focus the debate and trigger discussion. The sets of maps emerging from discussion and interaction are to be understood as a series of inputs that still presupposes individuation. Similar to how physicists operate, these maps need to be transformed to become fully architectural propositions; they need functions to allow this translation to occur. These mechanisms are provided by the encoding set; however, this set supplies a particular kind of functions that allow multiple developments and link parameters in a many-to-many fashion [4].

Second, these principles are complementary. It is not possible to extract any information from the maps unless at least two curves are considered. This allows shaping each individual parameter by itself without knowing the effect that it will have on the overall configuration.

4. EVALUATION AND CONCLUSIONS

With this presentation we hope that the examination of issues of complexity, uncertainty and participation pointed out why they are relevant to urban planning and how these elements can threaten the importance of urban interventions. At the same time, they are also proposing new problems and potentially new opportunities for architects. What this research is beginning to indicate is that in order to explore these opportunities some shifts have to be made.

Our attention should shift from form to organization; that is from the analysis of single parameters or individual objects to the investigation of the space between them, which we called qualitative or relational space. This allows us to link any project to the deeper dynamics shaping urban design, which have to do with economics, society and ultimately, culture. The problem immediately moves from being a purely disciplinary question to an interdisciplinary one.

Second, the participatory process should be encouraged by setting up techniques capable of both immediately transform people's inputs in something spatial (namely, by visualizing the value of a single parameter through surfaces) and provoke further discussion by allowing them to experiment and "play" with the tools provided. By delaying the emergence of a defined architectural proposition, the aim is to involve groups of citizens, artists, and teenagers in a process they would not normally take part to.

If we observe and understand the changes occurring in our cities, we will also understand that in order to be relevant in the field of urban design we will have to be innovative, culturally engaged, and interdisciplinary rather than formulaic, disciplinary and form-driven.

5. NOTES

1. For instance, this was the case for the area where S.O.U.P. was first applied. The site had originally masterplanned to house office for the growing Internet economy. The abrupt stop of the growth of such market caused the entire plan to be stopped and then entirely dismissed. Regardless of the architectural quality of that scheme, this episode reiterates the relevance of grasping large phenomena that go beyond architecture to involve economy, culture, etc. before engaging resorting to formal solutions.
2. DELEUZE, G., GUATTARI, F.; quoted in Allen, S., *Colossal Urbanism* (New York: cpa, 1996), 8.
3. SCHRAGE, M., *Serious Play: how the world's best companies simulate to innovate*, (Boston: Harvard Business School Press, 2000), p.77.
4. This discussion mainly refers to similar topics carried out in two books: DE LANDA, M., *Intensive Science and Virtual Philosophy*, (London: Continuum, 2002), p.79. B. Russell, *Principles of Mathematics*, (New York: W.W. Norton), 265-6.