

# New Urbanism and Incremental Design

## A Contribution To A Rapidly Urbanising World?



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## 1 Introduction

*“In growing and changing through time, the built environment resembles an organism more than an artefact.”* Habraken, *The Structure of the Ordinary*

During the 20<sup>th</sup> and 21<sup>st</sup> centuries, our cities are experiencing a constant mutation and growth due to the rural exodus. Out of 3 billion people living in cities today, 1 billion is below the line of poverty. In 2030, there will be 2 billion people below the line of poverty out of the 5 billion living in cities. Slums and favelas will therefore develop promptly. Architects and urban planners will have to find a fast and efficient way to develop our cities and accommodate their new inhabitants in a sustainable manner and good living conditions.

There is nowadays a very important housing crisis mainly in the developing countries around the world. As cities do not stop growing, more and more slums and illegal settlements develop since the lack of housing is tremendous. They are undoubtedly the number one problem of habitat in the world. If preserving the architecture is relatively important, access to adequate housing is fundamental.

The strong migration of population in cities has led to the development of slums, unsanitary and uncontrolled construction of homes where urban poverty is concentrated. The world's urban growth is about 95 % in developing countries : 5 million new residents coming to live each month in cities. In 2008, a billion people

were living in slums, which is the equivalent of 1 person out of 6 in the world, and this number is constantly increasing.

The slums are built habitats with recycled materials, where the living conditions and the health context are problematic. Sanitary basic services are non-existent, such as access to drinkable water or clean water and toilets. The risk of flooding and landslides are numerous, because the streets are not paved to allow drainage and no drainage system is built in these districts. Most of the slums have no electricity, no waste and the risk of disease and epidemics are magnified. Road infrastructure and public transport are usually non-existent, which helps isolate these areas from the rest of the city. Malnutrition and hunger are often present in the slums. Crime and insecurity are the daily lot of their inhabitants. Slums are legally illegal because they were built without permission and do not appear on any urban plan. They thrive on the outskirts of towns along railway tracks, danger flooding areas and even on the roofs of buildings.

I will develop in this essay how new urbanism and incremental design can be some of the solutions to our rapidly urbanising world and urban shelter issues, using Manila in the Philippines as a study case.



Slum in Metro Manila, Philippines

[http://news.bbc.co.uk/2/shared/spl/hi/picture\\_gallery/06/world\\_manila\\_slum\\_life/html/1.stm](http://news.bbc.co.uk/2/shared/spl/hi/picture_gallery/06/world_manila_slum_life/html/1.stm)

## 2 Literature Review

After the industrial revolution in the 18<sup>th</sup> century, more and more people moved from the country side to the cities. Urbanization has since then continued to develop itself as the world population is growing. This uncontrollable phenomena leads to the expansion of cities. In most of the cases the enlargement of the cities is done in an unmanageable manner where the poorest inhabitants end up living in slums or illegal settlements.

Reinhard Goethert Director of SIGUS (Special interest Group in Urban Settlement) at the School of Architecture and Planning at MIT defines incremental housing as “a step-by-step *process*. It goes by different names (starter house, owner-driven house), but fundamentally, incremental housing is an integral urban development process, building housing communities and citizens.” Which reflects to Habraken's theory, where the built environment will be able to change through the citizens needs, in an organic aspect.

According to Habraken, intimate and unceasing interaction between people and the forms they inhabit uniquely defines built environment. *The Structure of the Ordinary* (Habraken, 1998) is a recognition and analysis of everyday environment as the wellspring of urban design and formal architecture. Habraken's central argument is that built environment is universally organized by the Orders of Form, Place, and Understanding. These three fundamental, interwoven principles correspond roughly to physical, biological, and social domains. Historically, "ordinary" environment was the background against which architects built the "extraordinary." One effect of these transformations, Habraken argues, has been the loss of implicit common understanding that previously enabled architects to formally enhance and innovate while still maintaining environmental coherence. Consequently, architects must now undertake a study of the ordinary as the fertile common ground in which form and place-making are rooted.

Indeed, in order for the built environment to persist it must have the possibility to continuously renew itself.

Through the movement New Urbanism and through incremental design, the built environment would have possibilities to last and mutate in time.

The movement New Urbanism's aim is to humanize the urban space and to make it less systematic and standardized. It is about finding a planning scale, a density and a relationship between the built and the voids more favorable to the pedestrians. The movement is a reaction to and opposes itself to the international style, which tends to forget the local and vernacular architecture in order to build the same environments across the world, the uniform residential areas and the Modern movement which favors the cars as a mean of transportation. The New Urbanism objectives are to learn from the old urban planning which was the most interesting material regarding sustainable development and social diversity of a city. A city of short distances for walking and cycling, residential density sufficient to enable the viability of commercial uses, social and spatial diversity of residents and economic activities to limit travel and mix the different population categories. However, the New Urbanism also promotes the emergence of new architectural forms, resolutely modern or rehabilitating old buildings and new forms of social organization wishing to break with anonymous modern urban planning and mono functionality (Bardet, 1948).

While incremental design, as briefly explained above, is a design process which has the possibility to increase in number, size, quantity or extend throughout time. It is the development of the housing unit as a progressive, temporal and dynamic process. It breaks down the unit into its basic components. And most of all it adapts to the peoples needs. The architect Alejandro Aravena, who won the 2016 Pritzker price, uses incremental design throughout his projects. In his project called Quinta Monroy in Iquique, Chile he listened to the different issues the locals had and applied the solutions to the design. While the future inhabitants learned how to build since they participated in the building process. Aravena's project offers a "core" in concrete where then the people will be able to extend their houses with the knowledge they gained. The extension can be an extra room as a family grows, a room to rent in order to generate some income or a little shop on the ground floor which will make the neighborhood more dynamic on a small scale. This way of designing and building allows to construct a project in a faster and cheaper way. While the people feel more rapidly at home as they designed their neighborhood and house together. Involvement is therefor important, even more when families

are relocated to city areas which are unknown to them. It also allows to have a variety in shapes and material in the neighborhood, making it more lively and human. But most of all, it is a project that has the possibility to grow and mutate as time will go on.

"There's [going to be] a billion people on the planet that will be needing housing. Unless we follow the incremental approach to tackle scarcity of means, we won't solve this problem." states architect Alejandro Aravena during his TED talk on incremental design. He also announces that it is important to use peoples own power for building. He involves the people he will design a building for in the construction. What is also very important is to understand the peoples needs. The starting point is problems that every single citizen understands; insecurity in the city, pollution, segregation, congestion, the type of things where daily life is affected. Then he contributes with design to try to offer a possibility. It is a process of design which includes the future inhabitants to participate in the conception and building of the project.



Alejandro Aravena's incremental project, Quinta Monroy in Iquique, Chile

<http://www.darchitectures.com/qui-est-vraiment-alejandro-aravena-laureat-2016-du-pritzker-prize-a2848.html>

Coming to an even smaller scale, the one of inside the apartment, architect Pia Ilonen from Finland designed the Tila Open Building project in Helsinki. The Tila housing block is a pilot project for neo-loft apartments. The dimensions and structure of the apartments allow for the occupants to build an upper floor gallery. It is based on an open construction system where there are available building frames which allows the resident to determine and build the required subdivisions. The basic premise in the loft lifestyle is that the occupants mix different functions within a single space. The residents can, however, build individual rooms or expand their flat with gallery type spaces, because the height of the main space is five meters. This is an other approach which deals with incremental design as the interior space of the building will be able to mutate and renew itself over time.



<http://www.slideshare.net/hellahernberg/designing-for-government-of-today>

### 3 Discussion / Urban Shelter Design

During my study trip in Metro Manila, I visited housing areas where people living in slums and illegal settlements were relocated. As a student in architecture, I observed the new living conditions and interviewed the inhabitants. Most of the residents were happy about their relocation and felt safe from floods and thieves

but some complained about the lack of greenery and of public transportation to their new housing. Indeed most of the areas where these people are relocated end up to be segregated and gated neighborhoods where the connectivity to the other parts of the cities (where most of them work) are almost non existent.



To the left the relocation project in Manila, with a wall surrounding it and no commercial use on site

These type of housing projects seem to be very isolated from the rest of the city. As we can see in the above picture, there are no commerces and the place of the parking lots are very important while most of the residents cannot afford having a car. The abundance of concrete and lack of vegetation lead to an increase of the temperature and compels the people who can afford it to have air-conditioning. Unfortunately it is unsustainable on the environment and social aspects.

On the scale of the units (apartments), there too there are some problematics. All of the units are identical without any possibility to extend them and to adapt to the needs of the inhabitants. As we can see in the picture below, people are stacked in those units. This happens all over the world and in France we call that phenomena the “cages à lapins” (rabbit cages). Meaning that people live in those identical boxes

which have no identity and are piled one above another to form what would be later called a building.

Most of the time, these projects do not relate to the context and the climate which is bothering for the inhabitants living in them. For example, solar protection in hot climate (as we can see in the picture below) usually is lacking.



“Cages à lapins” effect in Metro Manila

What I noticed during the visits of these relocation projects, is that even though people do not have the possibility to extend their units they however manage to transform them into little shops (Sari Sari for food) or manicure or hairdresser. There units become very tight between the living space and the area where they work and generate income. It also shows that the way people were used to live before always manages to come back in one manner or another.

If we follow the theory Habraken discusses in his book, where the built environment must mutate over time in order to persist and develop, the relocation project above will have to be put down in order for the built environment to change over time. Indeed it is a mono functional project which does not allow any changes and



adaptation to future needs. In that way it is not a sustainable project as everything will have to be built from scratch again. While if an incremental approach would have been applied, over time parts of the project would be changed step by step without having to put the whole area down.

I believe that a way to solve the problems I discussed above in the example I took from Manila, could be for the most part solved by using the tools of the New Urbanism movement and the tools of incremental design .

The New Urbanism's way of thinking and planning seems to be a solution to consider in nowadays growing cities. It has seven main principles that should be taken into consideration.

A mix and diversity of uses and residents: The urban neighborhood is primarily a diverse environment. We find a wide variety of commercial uses there, business places, institutions and types of housing, as much on the neighborhood scale than of the block as the building. Businesses that serve the neighborhood are sufficient to meet the needs of residents during the week. The era of segregated zoning is over. The neighborhood is composed of a diversity of residents of all classes, of all ages and cultures that enrich each other and form a real community.

Higher densities: Without being excessive, residential densities are found in the “urban villages” are more important than in our suburbs. Proponents are encouraged to develop such projects more compact row houses and small apartment buildings grouped together. When properly designed, projects with a higher density are more user friendly and offer greater quality of life than suburban neighborhoods which have isolated houses and tall buildings. The residences, cultural and community businesses and services are grouped so as to be easily accessible to residents.

Increased pedestrian accessibility: The roads network should be designed to encourage walking, reduce the number and length of automobile trips, and conserve energy. The streets offer an interesting view from all angles and are lined with places of relaxation and exchanges. The streets and parks must be safe and welcoming places for pedestrians. Designed in harmony with their natural environment, they attract walkers and facilitate relationships between people. The majority of commercial and institutional services are easily accessible for a majority of residents. The location of the houses, located close to the street and the sidewalk, promotes communication between passersby and residents.

A variety of housing: In the same neighborhood, there is a wide choice of accommodation and prices to encourage the establishment of people of various ages, origin and income, strengthening links between individuals needed a real community. To this end residential projects in villages reserve an important place for affordable housing. Often the residences have secondary housing integrated with the main residence or yard where parents can stay or be used as an office or as a workshop.

A quality of architecture and urban design: architecture and urban landscape combine to create a "sense of place" to which residents identify. The area has a clearly identifiable center where green spaces are often present around where one can find important commercial and institutional activity. Public transportation is easily accessible. Buildings and residences are on a human scale. Public, commercial and institutional buildings were designed in a spirit of aesthetics and high architectural quality and are always accompanied by public spaces of great excitement and creativity. The most strategically located sites and often the best are reserved for civic and community buildings and where residents can meet to educate or participate in cultural activities.

An intelligent transportation system: In urban villages, pedestrians and cyclists priority and feel safe for easy and direct access to local services. The transit service is exemplary, because the hierarchy of the road network facilitates accessibility in the heart of the nearby neighborhood of higher densities and residents within the area have easy access to lines by paths specially designed for them.

Sustainable Urban Development: Real estate projects are developed in the respect of the natural environment in their design and environmental impacts are minimized during the implementation of projects. Homes and buildings are effective regarding energy consumption, travel patterns promote public transit and non-motorized transport. All residences, businesses and industries are actively involved in waste management programs in place. Finally, the town is governed largely by its residents who decide on their priorities and the City consults regularly.

Incremental design's approach of thinking and planning seems to be a solution to consider in nowadays growing cities. Incremental architecture is a building, a house or a unit which is able to expand and develop itself throughout time. It therefore adapts to its inhabitants needs and makes the inhabitants part of the process of evolution/growth.

## 4 The Role of Architects

Architects who deal with housing and urban shelter projects should take into consideration the incremental design method as Alejandro Aravena did. New Urbanism and incremental design are a contribution to make our rapidly urbanized world a better place. But they should not be used alone, in other words addition of other methods will strengthen them and make them more efficient. This is what Aravena did as not only did he use the incremental design but he also involved the future inhabitants in the design and the construction of the project. The combination of incremental design and participatory design has been shown to be successful in Aravena's project. It is a way to build faster and with a lower budget, to build on a longer period (incremental approach), and to get the people involved which will make them feel at home rapidly even though they have been relocated. The human approach is therefore very important.

In most cases, projects are designed for the present without acknowledging the evolution of a city, a building or an apartment in the future. While landscape architects do take time into consideration in their projects as nature evolves in an organic pattern. As Habraken discusses in his book, *The Structure of the Ordinary*, the built environment follows an organic pattern in constant mutation to fit at its best the time it is in. Shouldn't architects learn more from these methods and the landscape architects in order to have sustainable cities in the future?

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