

Nature-inclusive approaches in Architecture for the urban poor

1 Introduction

In the context of growing urban densification, the attention paid to green spaces in our cities should be a landmark of urban planning. Knowing that housing or urban development of many kinds, has an impact on humans and is designed, first and foremost, for humans, we must take into account the needs of human beings for comfort, spiritual comfort as well as material comfort. Human and nature live in a delicate and fragile symbiotic harmony, in which one needs more than the other one does. Indeed, the human body, as well as the human spirit, has a particular relationship with nature, the disconnection with nature has non-negligible consequences on the mental and physical health of the inhabitants, as a tendency to depression and respiratory disorders (Making Urban Nature). Therefore, it is necessary to think of different ways to include a human and natural dimension in the architectural thought, in the sense of that nature would have its full place in the design process. In the context of the urban poor in Manila, it is all the more necessary to think about including green spaces. As the cost must be low, the spaces considered per person are much smaller, so the inclusion of 'green spaces' does not necessarily mean enlarging spaces but perhaps a different arrangement of spaces, especially considering vertical walls and their different uses. As humans, we can only experience things that we can perceive through our senses, at our own scale.

As designers, our memories from previous experiments interweaved with potential projections based on various elements coming from our own soul. Because the designer uses his own scale to draw and project, small, detailed, optimised spaces are spaces on our own scale and should not be overlooked but emphasised. The spaces we consider in the context of urban poor in Metro Manila are small, narrow, cramped, and that is why there is a great interest to think about how to integrate green spaces to these dwellings or spaces of the minimal size in this extremely dense context. The optimisation of space in small scale

project is an opportunity to experiment nature inclusive design with more restrictive guidelines than in another project, is, therefore, more interesting for future implementations.

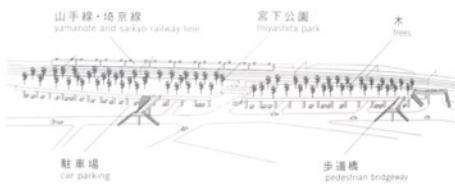
This theoretical essay is enlightening a project on social housing for urban poor in Manila in the Philippines and is dealing with strategies of how to include green spaces in buildings having, both, small budget, and scale. In this essay, we will first focus on the theory of the subject to then compare it regarding what is done in practice, in other words, the already implemented. We will then try to propose practical alternatives through sketches that include these previously studied concepts. And finally, condensed guidelines will be written about how to include nature in small scale projects for the urban poor.

2 Literature Review

First and foremost, the increasing urban densification in developing countries such as the Philippines is raising some necessary questions about how, in an architectural way, deal with densification. To, first, understand the context, and second find new approaches to this matter, we need to study others examples of densified city in terms of urbanisation strategies as a contextual approach and then study the theoretical history of garden making and green spaces in architecture to finally end on practical case of how to design for the urban poor.

A. Modern urban planning for densified cities

The book "Made in Tokyo" from Kaijima, Kuroku and Tsukamoto is a comparative study of densified buildings in the metropolis Tokyo in Japan and how these buildings resort to a superposition of programmes in the same structure. It is a study of how in densified city mixed-used buildings can interweave their relations between different functions in terms of structure, category and use relation. This use relation can be generative or mono-proliferating. The goal of the catalogue format of this book is to highlight the behaviour of architecture dictated by the simple mean of use. They are not taking account aesthetic or any formal value to evaluate each building but the study is more about a the current state of a building and how architecture is growing depending on the city as an environment. But it is more a comparison of each building on the same characteristics, which are category, use and functions. Every buildings can have different relations between the different uses superposed within itself. Buildings are considered as environmental units sharing the structure or the category or a use relation or even all at once. Some examples which could be useful in the context of Manila



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パーク on パーク
park on park

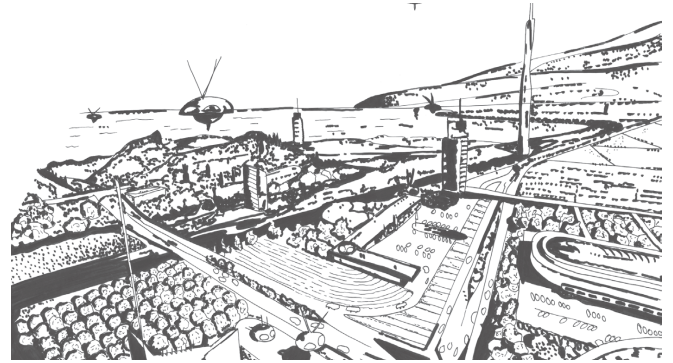


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ダムマンション
dam housing

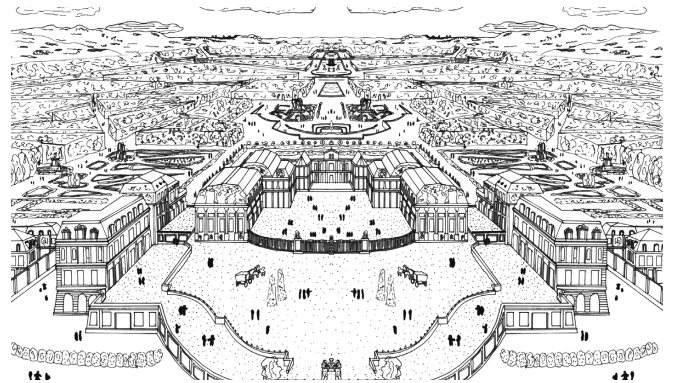
can be the Park on Park, Dam housing with the reservoir for the river (flooding buffer zone) with flats or the green parking. If we consider Manila as a densified urban city, mixed-used and superposition in urbanisation are key measures which could be taken in an urban area when it comes to dealing with densification and optimisation of space, regardless outside or inside spaces, but more liveable spaces, in both cases.

The theoretical essay of Mirko Zardini, "Towards a sensorial urbanism", is dealing with urban planning with an alternative approach from the traditional one. A city is an urban landscape based on the five senses. Olfactory and auditory urban landscape draws attention to green spaces, among others considerations, such as sequencing a pathway than doing straight lines without visual or olfactory sequence.

A sequenced street can provide pocket areas with a specific atmosphere such as we can experience in the old city center in ancient towns like Venice. A city present multiple characters and this approach is not taking only vision as a determining factor in planning and designing. A city with multiple faces is the book' theme of Italo Calvino "The Invisibles cities ». A human dimension is necessary for this approach and the mixophily principle from Bauman is here used to describe how we « live together in peace in taking profit and benefits of those various differences, stimuli » eg (translated from Zardini, 2015). It is all about a characterisation of a space depending on its atmosphere, by paying attention to green spaces by example. Manila is here considered as a sensitive milieu, an auditive and sensory city, where vegetation helps. Adding this dimension usually creates both a social and sensorial area, for people to keep the contact with nature.



Broadacre city by F.L.Wright: example of a sensory city



Versailles: Antithesis of a sensory landscape, constructed by visual perspective.

Before including nature in an urban design process, we need to notice that a city in itself is a biotope, where urban and a new type of biocenosis are co-living and growing together, the one depending on the other. The book "Making urban nature" by Vink, Vollaard and de Zwarte is explaining how the city is becoming after years and years a new shelter for some species of animals and how urban planners needs to take that into account when designing or planning for cities. Humans are also in a symbiotic relationship with nature, meaning that, any human being needs to have

a connection to nature in some way to be healthy physically and mentally. Nature inclusive design, as a concept explained in the book, means that it is necessary to include it in the design for architects: considering nature, a living entity, as a non-negligible element in conception is, now, necessary. City biodiversity depend on combining stable and dynamic areas but also mineral and vegetal areas. In Baubotanik, another concept introduced in the book, nature, such as bamboos in the example, is used as a part of the load-bearing structure in the construction. Nature is, not a simple ornament anymore, but used also as a structure in a sustainable way in this nature inclusive example.

To conclude briefly this contextual approach of our subject, to include nature in the design process itself, in urban areas, we need to come back to a more human scale in thinking and designing, to come to what we, as humans, but more certainly as architects, are experiencing to create for others.

B. Theoretical history of garden making and green spaces in Architecture

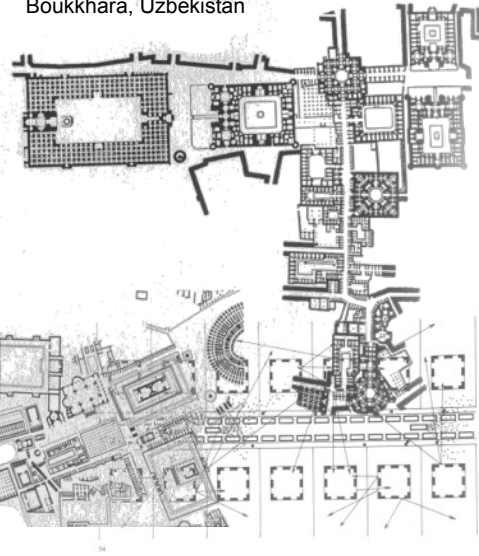
"Liveable Environments" from Roland Rainier is a book dealing with outside spaces and their relations with the habitat with attention given to green spaces and nature. This is really inspirational in terms of approaches for nature inclusive design in architecture and how to include some practical projects with examples from all around the world and all along with history. Firstly, Rainier is introducing the topic by making a summary of the current state of our society as a growing industrial one by presenting it as an alteration of the natural milieu. The car is the issue of modern life because of the place it takes in our cities and not only its pollution. According to several different studies conducted in Germany living in a high-rise is causing respiratory problems but also as it creates a de-connection from the environment is bad for the well-being of humans. The book is divided into two parts after this introducing chapter on the current situation, we first read an analysis of what makes outside spaces in relation to architecture valuable and soothing. This analysis is categorising outside spaces in four types: 1. pageantry of our homes: the enclosure wall; 2. inner courtyard and patio houses; 3. court, plazas and streets and finally 4. gardens (including green spaces in general). After this typology study, Rainier is analysing the garden and green spaces and their constitutive elements. Firstly, it is a discussion comparing decorative attitude or feeling of wild nature. And then trees and water are discussed as necessary elements of green spaces, themselves necessary to any landscape, urban or not, to end on some considerations on how to treat them (urban or countryside landscapes).

The enclosure wall is separating the dwelling from the traffic and can be a hedgerow, a wall as Turkish cities with oriel window as openings in it where the wall is giving human scale to the city. In China, the ghost wall is used in traditional house to make a gradation from the public street to the intimacy of the house. The wall is also used in vernacular houses in the Balkans.



The ghost wall in China

Boukhhara, Uzbekistan



The garden must be used as an additional living room and that is what a patio is bringing and not as in scattered houses where the garden is merely a stripe bordering the square pavilion house where there is not common or private space but unused space. Despite the courtyard creating a corridor street, a life between the walls and optimise space. For instance in Europe, Orient or China before the industrial era, the courtyard was the most common typology in cities because of numerous



Residence of a scholar eg (Rainier, 1977).

advantages in terms of privacy and climate. Plants inside a courtyard are in China, Anatolia and Spain usually in a mobile pot as moveable furniture whose position according to seasons. In northern China, the sequence of the courtyard in this residence that we have below is showing how the house is in the garden or the garden in the house as a mutual relation where one and the other are interwoven into each other. A quick reference to the roof terrasse of Le Corbusier is saying that it is more suitable to have one with different levels in colder climate e g (Halen, Berne by Atelier 5, 1953), (Hoffman, terrace sketches), (Aalto, Interbau, 1953).



The courtyard house against the pavilion cottage eg (Rainier, 1977).
Spangen, Rotterdam (1976)

Courts, squares and streets are a transition from noisy to calm and quiet spaces. They are usually a synonym of concentration, isolation, protection, a symbol of the community as the sequence of enclosing squares fresh and verdant are in the city of Bukhara in Uzbekistan or in Grenada in Spain in the Alhambra. St Marc in Venice is more a square assimilable to an inner courtyard but of the city itself: « The city is becoming a house and the house a city » e g (Aldo Van Eyck). Despite these considerations, a wish from the author is also to separate different circulation e g (Rotterdam, Spangen, 1976) because there is a differing speed of appreciation of details from a pedestrian at 7 km/h to a car at 50km/h and we must not plan spaces the same way for both of them.



Ispahan, Iran



Gardens are bringing a sense of human scale and are also part of the dwelling instead of being used as a decorative non-intimate garden that we observe from our big windows. The problem in the present age is the scale used for landscape, it is made as what should be part of the dwelling, as if everyone wanted to model their one landscape according to their tastes without really experiencing nature as it is, which creates a loss of space and prevents a direct link with nature. After the Renaissance the gardens

became ruled by perspective and symmetry in Europe against what was practice in the

middle-age which was more about sequencing the garden by doing surprise effect. In between the symmetrical formalism of classical French gardens and the Virgilian idea of an untouched nature we can also find the English garden which is a genuinely balance extension of the landscape, exalting nature. Conversely, the Asian treatment of gardens are showing a different relation to nature: « The Oriental metaphysical approach which does not see man as the « lord » of « soulless nature », who is entitled to dominate the world, i.e., to exploit it ruthlessly as Western civilisation has done for 2000 years, but sees man as one of many members of a world that possesses soul in all its parts, a world in which he must merge. » e g (Rainier, Liveable Environments, p.115).



Traditional Chinese painting

Therefore, we can understand that the creation in architecture and how the connection between humans and nature is perceived in different cultures is depending also on spirituality and beliefs coming from cultural backgrounds and influences e g (Tea House, Japan).

This comparison between these two approaches is then continuing in the chapter asking the question about gardens as decorative elements or gardens as an experience of nature. For instance, the gardens of Alhambra are showing a nature guided by architecture as a Western approach but keeping the soul of a small country-house composed of two pavilions with a modest orchard within it.

Trees are bringing shades, freshness, protection, invigorate the air with oxygen and are an infallible witness of the seasons. In this part describing elements of the what makes a green space soothing, Rainier is advocating for trees and how a simple tree can produce 18 litres of oxygen per hour when the industry is producing twenty times more carbon dioxide emission in 1972 than what are releasing human being by living. Another striking fact is that a car consumes one thousand times more than its driver, which is going in the sense of the author who wants us to avoid a car in cities and split the circulation pathways. Trees are a water tank that is refreshing the environment when it is needed by evapotranspiration.



Traditional french painting of gardens during middle-age.

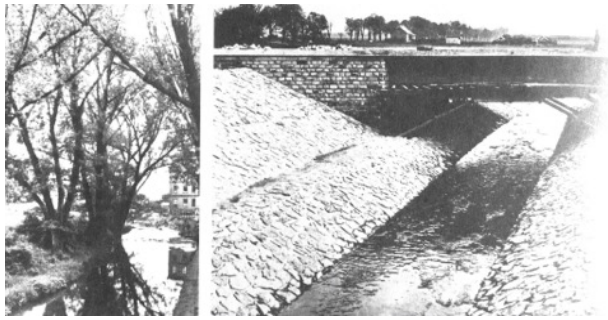
Generalife, Alhambra, Spain.



Balkans house with courtyard and trees



River before and after masonry work.



The second necessary element in green spaces is water which is used in several cultures. In utilising the example of the new infrastructure made for the Rhine in Vienna, Rainier is explaining how this interference with the biotope has done a lot of damage to the regulatory faculty of the river. In this example, we can also highlight that the natural meandering pattern of a river is to avoid a too fast flow and flooding in allowing the water to enter the

groundwater level, slowed down by trees roots and vegetations on river banks.

To sum up his comments Roland Rainier is referring to the Genius Loci used by Otto Wagner which is the following guideline: « The art of composing a coherent unit, functioning naturally in accordance with the vital needs of Human and the conditions of the place ». And finally, after the industrial age that is now getting to an end and with the global warming awareness that is growing, it is the responsibility of humans to express their values and, as a society what we want as a body and spirit culture, this will reflect on the architects.

If we look back to how nature considered in different regions of the world, we understand a particular correlation between culture and religion, as variables depending on the region of the world playing on how vernacular architecture is dealing with the place of nature within itself. For instance, the small writing on "winter's garden" of Gottfried Semper is talking about how winter gardens were a necessary element in the traditional Domus in the Roman empire taking the form of a central atrium. The winter garden became, from now and then, a new room, part of the dwelling, as a different living area. In Roman culture, a glass-covered winter garden is just closed in the coldest times of the year and then open again when days are warmer. A winter garden is also five to six degrees warmer than outside but not more, this rule work just if we keep native trees and species inside and not exotic species. From this European approaches from the mid nineteenth

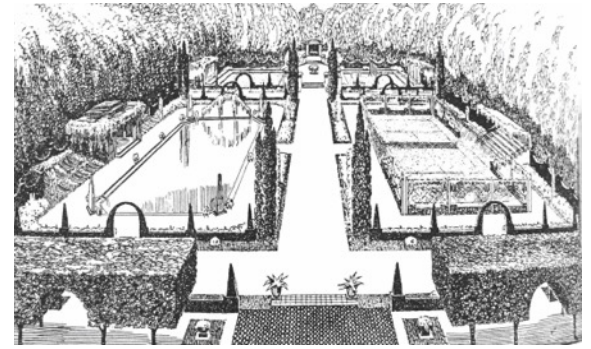
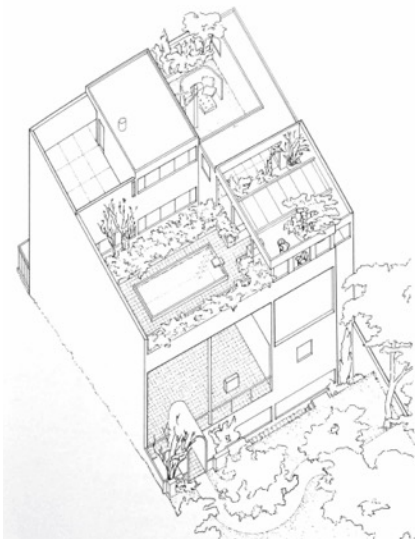
century regarding a roman concept we can keep the important fact that a winter garden is an essential part of the house, a particular category of room, whose use is changing depending on the weather and seasons.



André Véra

Furthermore about the history of garden making in European culture, the book "Modernist garden in France" by Dorothee Imbert is giving an overview of various ways of treating the garden in relation to an architectural project. First and foremost, at the beginning of the twentieth century some architects, for instance Henri Duchêne and André Véra, are still keeping a formalist attitude in terms of treating the garden as simply and only visual perspective as classical French garden from the seventeenth century (Versailles is still the best example of this rigid visual planification of a man-made and controlled nature).

Villa Meyer, Le Corbusier

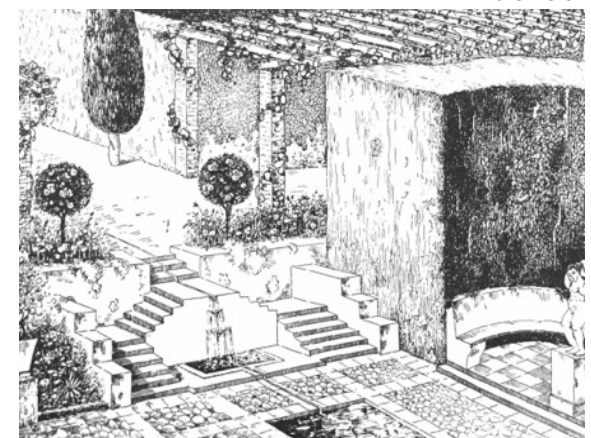


Moderns are caught between a call for functionalism and a certain pursuit of aesthetic when we are treating the garden. We can see from this combination two extremes approach in shaping the garden; one ultra-decorative with severity and even grotesqueness sometimes and the Virgilian ideal of untouched nature. Gabriel Guevrekian is employing cubism to produce graphic controlled gardens as hyphens between architecture and nature. He is linking them and dividing them at the same time as we can observe in the Villa Noailles and in the painting representing the Jardin d'eau et de lumière from 1925. With Le Corbusier, we can see in his projects

Villa Noailles & Jardin d'eau et de lumière, Guevrekian



that he is treating nature distinctively as a landscape or as a garden. L'immeuble villas with their hanging gardens are using this concept so important to him: air-sun-vegetation entering the dwelling itself with integrating a covered terrasse completely part of the unit. In others projects, nature is entering through a large glass, even the wall is disappearing to leave room for a huge window like in the Unités d'habitations de Marseille to look at nature as a wallpaper, as a landscape in the background. In the first example, nature, because it is controlled and planned inside the dwelling itself is treated as a garden.



André Véra

Nevertheless, in the second one, nature is treated as a landscape, as an untouched artefact that we observe from our comfortable inside. All the duality from the modernist way of dealing with the garden is there, explained. Both the idea of



an aesthetic garden inside the dwelling is advocated but an untouched nature is also something to aim for. The Villa Meyer is within and against a naturalistic

Immeuble Villas, Le Corbusier

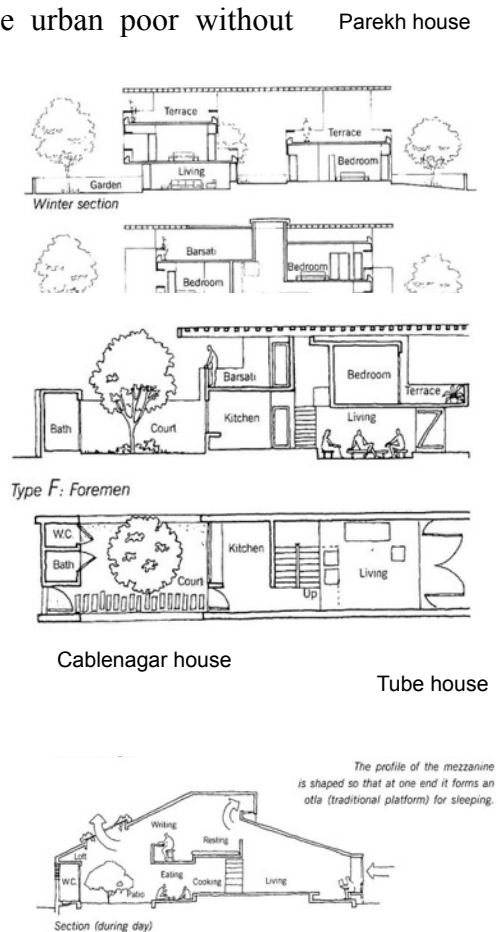
landscape as described by Imbert: « This smooth volume is standing against the foliage of the park with keeping a domesticated nature on the roof playing as an architecturally framed view that treated the park's vegetation as only a backdrop ». An active visual borrowing of scenery as a polite nature is, thus, returned to the house, while keeping contact to nature inside the dwelling itself with roof garden. The roof terrasse, in Le Corbusier's work, is a significant hygienist consideration for him, because of the dirty and muddy ground, but also a distant point of view on the horizon additionally to be a generator of sunlight (Villa Savoye). To conclude, what is common in every culture is the relation and the contact with nature which is, always, existent. Everywhere nature is both used as an inherent part of the habitat or as a landscape, a background, but in any case, it is always present.

C. Designs for the urban poor: practical cases

To include relation to nature in Manila, we need to come back to the small scale in our study and look at how to design for the urban poor without forgetting climate aspect and spatial considerations.

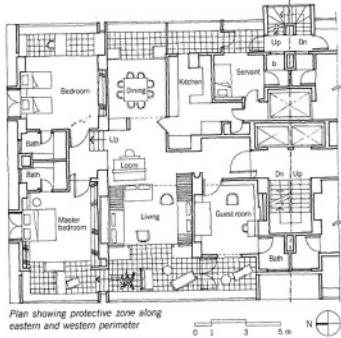
Hence, we are getting interested in Charles Correa's work described in his book « Housing and urbanisation ». Correa is dealing with how to make the everyday habitat in which we live with considerations from micro to nanoscale in his thinking for the urban poor. Despite the fact that all his projects are rich in lessons, several projects are more useful for nature inclusive measures in urban poor architectural projects.

First of all, Correa has several principals for climate responsive design to make passive buildings with natural cross-ventilation. For hot dry climate, Correa is advising to lower the temperature via humidification in trapping the air inside and humidifying it. Whereas for hot humid climate lowering the temperature can be achieved via cross ventilation with a porous built form, for instance. As we can see in the PAREKH House and the CABLENAGAR project, he is protecting the roof from overheating by adding a pergola with long eaves acting as a protecting membrane. For cross-ventilation, slightly altering the position of the opening to create a natural movement of air or using semi-levels to have two openings is quite a useful strategy as we can see in the TUBE House. In the PREVI House, we can observe a kind of porous built form made by a central double height wind-scoop with plants as an atrium where the breeze is taken from the top of the roof and through all the rooms on the bottom of the house. Another strategy for hot wet air is the



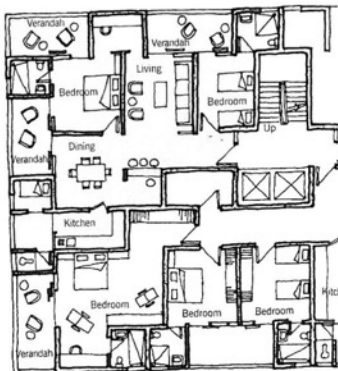
Rallis project

buffer zone as used in the RALLIS Appartements (DCM) where a veranda is protecting from the sun in making two

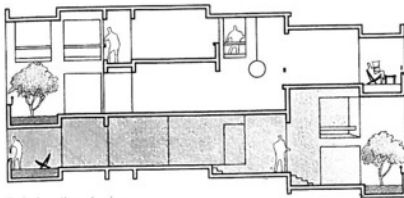


Plan showing protective zone along eastern and western perimeter

Somnarg project

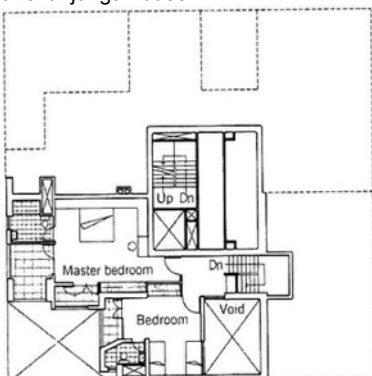


Floor plan



Typical section, showing interlock of basic units

Kanchanjunga house

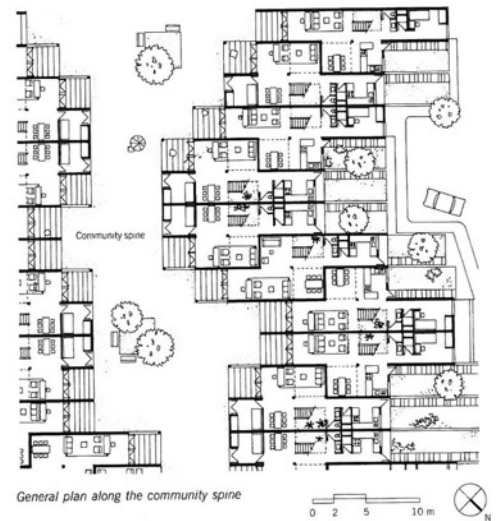
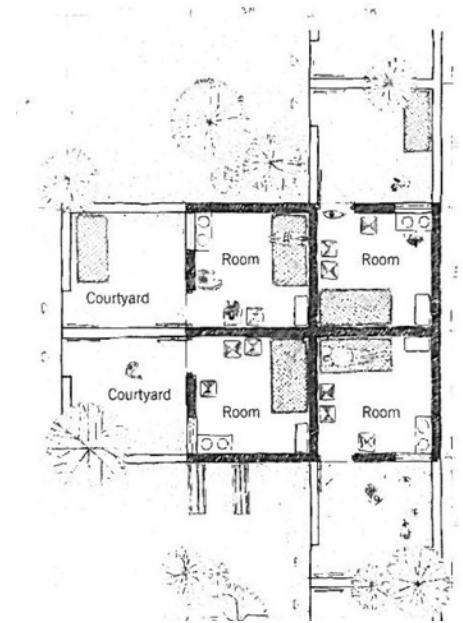


Four bedroom unit: upper level

there is an interlocking pattern with living units creating massive double height gardens. In the same project, the verandas as buffer zone are also used. Secondly, he is also using summer and winter sections by layering the spaces in the PAREKH House. Besides, a substantial topic in Correa's architecture is open to sky atrium. The centrality is a major theme in his architecture, the HUTHEESING house is like following: « nine squares have been modulated to a tartan grid, and the central square transformed into more casual flights of steps, arranged informally around an indoor garden ». This tartan grid turning around a central atrium is good for ventilation as the fact that each semi-levels of floors have a difference of one quarter-landing, creating a dynamic air flow. Under the topic of centrality, there is also the inner courtyard that comes back a lot like a good alternative for both privacy and creating an additional room where a micro-climate can be settled. The SQUATTER housing project is a variation on the inner courtyard by using one and only roof to use the courtyard as an additional room. Four units are put together in a pattern to form a cluster where the courtyard is a multi-purpose community space.

And at last, Correa is also referring to the problem of affordability of the elevators in his buildings. To solve the issue created by an elevator, noise, privacy and preventing cross-

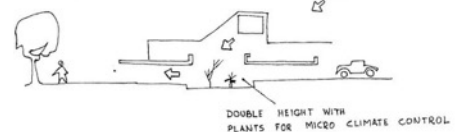
Squatter house



General plan along the community spine

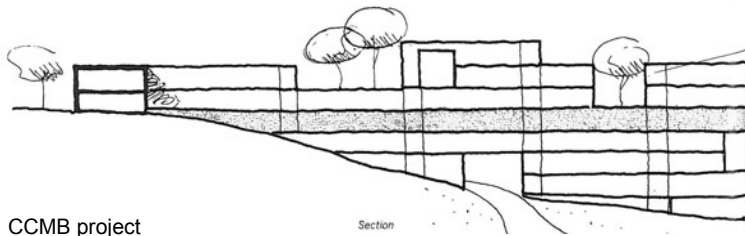
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Previ house



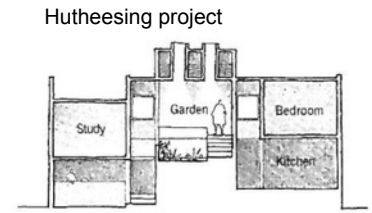
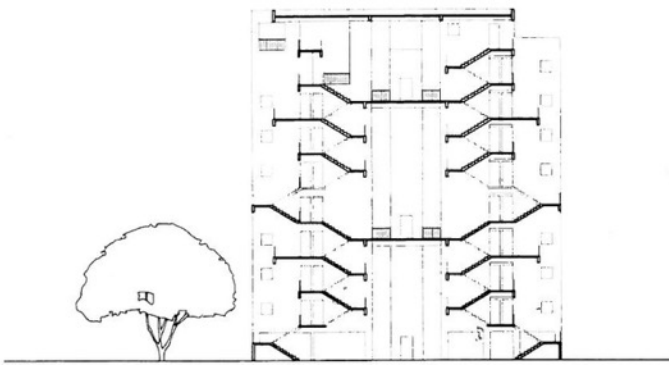
DOUBLE HEIGHT WITH PLANTS FOR MICRO CLIMATE CONTROL

ventilation and elevation of the cost, Correa is using the topography in the CCMB low-income mid-rise to produce different levels, from two to five storey. Units are in a continuous sweep but the elevator is positioned at the fourth floor and is still accessible from others floors for disabled people. In the MHADA



CCMB project

MHADA project



Section

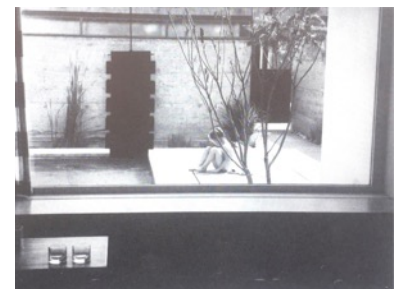
project, the elevator is stopped just at the third and seventh level with a gateway to access to the building cores because the elevator is placed in the centre of the four columns corner buildings linked by a footbridge. The type of windows with double ventilation shutters are also a noticeable artefact in this project, as well as the double height communal space in the middle with the terrace which can be used by everybody. Correa is in his thinking inviting us to design housing, not as built-up boxes but more as a composition of open-to-sky spaces with enclosed structure interweaved by using threshold spaces, atrium, inner courtyard, in-between spaces and playing with semi-

coverage and so forth.

3 Nature in Architecture: Argument, Critique or Discussion

A non-limited list of architectural elements establishing nature within the dwelling itself is, here, enhance with practical projects to show means to introduce nature into architectural projects. The architectural qualities of an ensemble where nature is included within it are defined by the relationship between nature and habitat. The spaces of transitions and connections between these two categories of space are therefore primordial. Here, we are considering that a project thought for the urban poor must not be in anyways devaluated because of its small scale and a small budget and must be considered of the same importance as any project in terms of refinement. Because there is no such thing as budget to define the architectural quality of a project, to design for the urban poor is first to draw architecturally detailed spaces, because in the end, in having less than others, we can give them more just by adding more thoughts our design.

Puchenau, Rainier



« As the royal palace of Split has become the heart of the city by times, and rooms became streets, squares and buildings: The city is a house and the house is a city. » e.g (Aldo Van Eyck inspired by Alberti's writings, 1960)

A. Small scale: the house as a city

1. The wall: Enclosure and limitation

First of all, the wall can be used as a transition between public and private enclosing the privacy and intimacy of a piece of nature. In many kinds of ways, architects are trying to make a clear separation between the private sphere and the public realm, and the enclosure wall is one of them as we can see in Puchenau project by Rainier or Utzon's Fredriksborg settlement. The retaining wall in Souto de Moura, Moledo house is playing with the landscape to camouflage the house within it. Alvaro Siza's sea pool in Matosinhos (1961) is building a dialectic relation between nature and the artificial. The geometrical aspect of the linear wall with irregular breaks inside the organic raw rocks is a play of overlapping and superposition between two ambivalent entities. In that case, linearity and geometrical elements play with its opposite character: organic nature.

Leça pool, Matosinhos, Siza



Moledo house, Souto de Moura



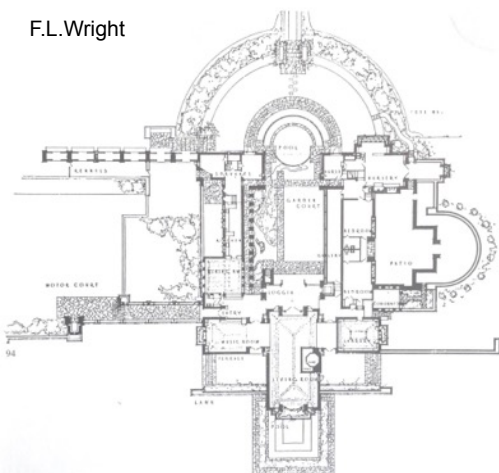
Palais de Tokyo, Atelier le Balto

In the Philippines, a numerous amount of fences are covered with vegetation, the wall, in this case, is made out of the vegetation to separate the private sphere from the public one. This use of vegetation as a barrier is getting more and more used like in Paris with the M6B2 Tour de la Biodiversité made by E.François where vegetation is embodying the fence. In terms of architectural harmony between the linearity of architectural artefact and the natural structure, the Palais de Tokyo in Paris made by Atelier Le Balto has a stunning inner courtyard utilising this principle with a simplistic wood gateway going through luxurious vegetation.

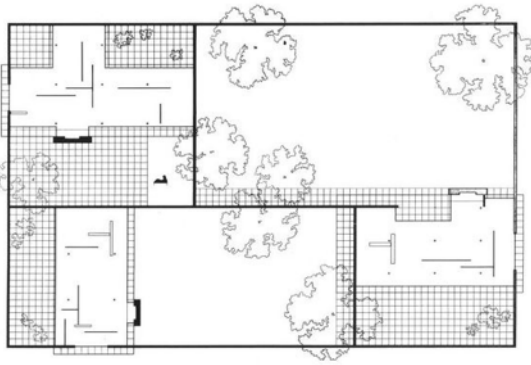
2. Courtyard Houses and Patio

Courtyard houses and the use of patio are really effective means to introduce greenery inside the dwelling. The garden becomes a part of the house, it becomes an additional living room. As we can observe in the Kingo Houses from J.Utzon, the L shape of housings creating a kind of open courtyard and a slightly shifted composition is developing much more privacy and, thus, begets a living area. The courtyard has been studied and implemented in several projects of architects. We can count F.L.Wright, Mies Van der Rohe and Chermahneff as thinkers around that subject.

F.L.Wright



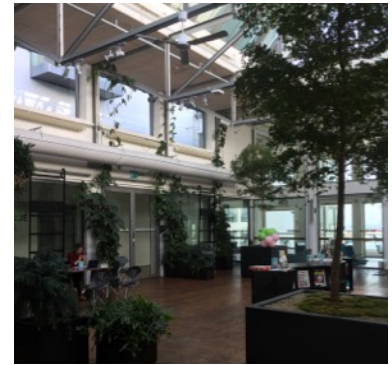
Mies van der Rohe



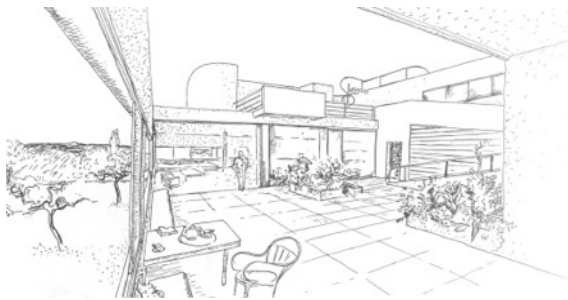
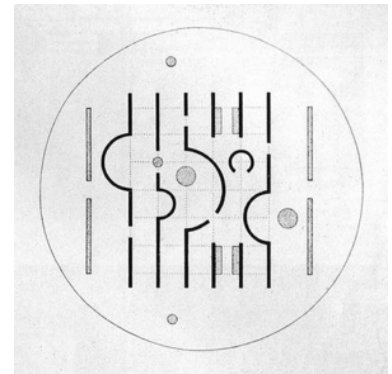
In the Philippines, we identified some architectural qualities in the informal settlement that we wanted to keep for further developments. That leads us to observe a natural and organic formation of a small common courtyard shared by three households where vegetables were being grown and a bamboo cubo house (traditional semi-open bamboo hut with benches and a roof) was standing to welcome people to relax inside and discuss with neighbours.

A patio is an open-to-sky courtyard set within the dwelling itself and enclosed by it. The patio can be introduced in any kind of building from private to public ones. The covered patio of Kim Utzon in the Kulturhus of Helsingborg is a way of adapting patio for colder climate as the Scandinavian one is by covering it with glass. We can also notice that the patio is at the house what the square is at the city in line with Aldo Van Eyck's thought e.g. (Jaschke K, 2009). His exhibition pavilion in Arnheim in the Netherlands (1956) is using this idea of the house as the city by playing on variable degrees of urban densities with spatial tension points with strict parallelism deformed by semi-circle of various sizes creating pockets, patio or just spacial dilatation as we can see them, where we can relax and contemplate.

Kulturhus, K.Utzon



Arnheim' pavilion, Aldo van Eyck



Villa Savoye, Le Corbusier

3. Terraces and loggias

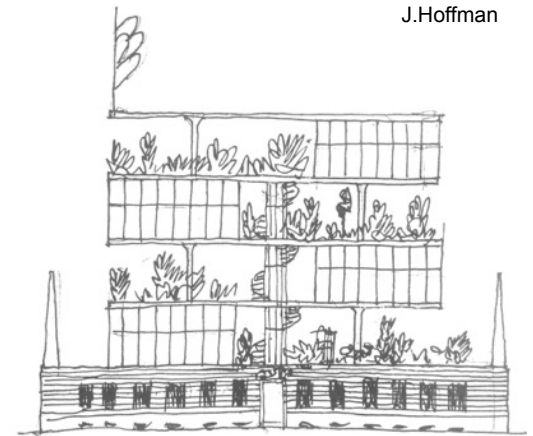
The roof terrace as Le Corbusier extol in his architecture can usually be developed on one simple level in a warm climate and is best interpreted on several levels in cold climates e.g. (Rainier, 1972).

The semi-covered loggia in the Pavillon de l'Esprit Nouveau of Le Corbusier developed in double heights is embodying this thinking and shows how an outside space can totally integrate into a smooth and defined volume. Joseph Hoffman had written down his thoughts on the vegetated terrace as a real integrated room inside the dwelling as we can see below, not just as a decorative « green » vegetated rooftop as we can see nowadays. A similar approach but realised is clearly the KANCHANJUNGA apartment from Correa that we mentioned earlier.

Pavillon de l'Esprit Nouveau, Le Corbusier (1928)



In Manila, people who are relocated from informal settlements to new buildings projects are usually in mid-rise buildings with a roof terrace used, most of the time, as a laundry facility to dry clothes. Moreover, balconies are also used as a place to watch kids playing downstairs on the street if the visual proximity is allowing it. The project House for trees in Ho Chi Minh in Vietnam (2012) is bringing nature to the densified city: « Building is a necessity when a city has a density of 3530 inhabitants/km² (Wikipedia, 2012), but it is a matter of conscience to build in a way that not only offers dignified living conditions but encourages people to realise that respect for themselves means respect for their environment. » e g (Corradi, 2014).



J.Hoffman

Urban gardening in Manila



House for trees, Vo Trong Nghia Architects



B.Large scale: the city as a house

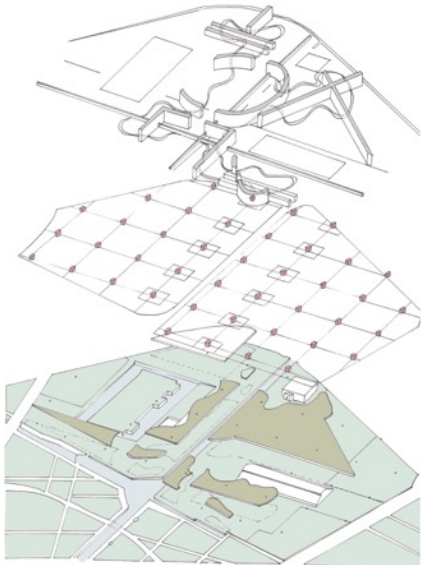
1.Squares, courtyards & streets

As the house is a city and the city is a house e g (Alberti, 1450): If the patio is the lung of the house bringing light, air and vegetation within it, the squares and courtyards are lungs of the city. They are the spatial point of dilatation of space, place where we are going to contemplate and admire. For some courtyards, it is isolation and protection that they are bringing, as Aldo Van Eyck's Orphanage in Amsterdam. For others, like San Marco in Venice, squares, as they are conceived, can produce an inner courtyard feeling but at a city scale, breathing a warm feeling of safety and semi-enclosure. We talked earlier on the Pavillion in Arnheim of Van Eyck where a play of density is made. Not only, this construction is creating different tension point and densities, but he also creates a path in sequences with different permeabilities and fluidities that settle. In terms of urban planning, this is really

significant to draw public spaces and how to conceive them for the pedestrian or the car, the sequences will be different if it is at different speeds.

In the Philippines, communal gardens as in the riverbanks project are now used both as a way of saving money but also a way to strengthen social bonds between the people of the community. Squares and courtyards are not the most popular planned urban artefact in Manila because they are often squatted so their roles must be fulfilled by other structures. These can be urban gardening places or structure offering shelter for animals living in the

Parc de la Villette, Tschumi.



city as the Buzzbench of Annemarie van Slumter (2003), a sculptural bench doubling as a stay for wild bees without being dangerous for people sitting on it. The street is usually playground for children but they can be developed with nature as a constitutive element, like in the Tunnel of trees from Jerez de la Frontera in Spain, who covered the street with climbing shrubs creating shade and freshness.

Street for trees, Spain.



Woodland cemetery, Asplund

2. Gardens & green spaces

Despite that not a lot of attention to public parks and green spaces in current Manila, nature does not wait for humans to grow everywhere it can and planning it will be preventing some bad consequences from it. However, a free space instead of an ornamental decorative garden is usually more efficient for people to enjoy walking on the grass, children to lay on the rocks and climb on the trees than following a straight or slightly meandering path drawn in a simplistic two-dimensional thinking. Indeed Asplund' cemetery (1998) in Stockholm and the Parc de La Villette in Paris from Bernard Tschumi (1987) are two examples of how a less formalist approach of park or/and gardens planning can produce fertile results. La Villette by its free order, without tissues, was thought with an indeterminate beginning and end. It is a territory conceived as a palimpsest keeping within it the mark of its past uses. Playful, experimental, this place of initiation and discovery but also relaxation facilitates meetings between people who can take their own journey

Garden Nikki de St Phalle, J-C.Choblet



MFO park, Burckhardt + Partner and Raderschallpartner

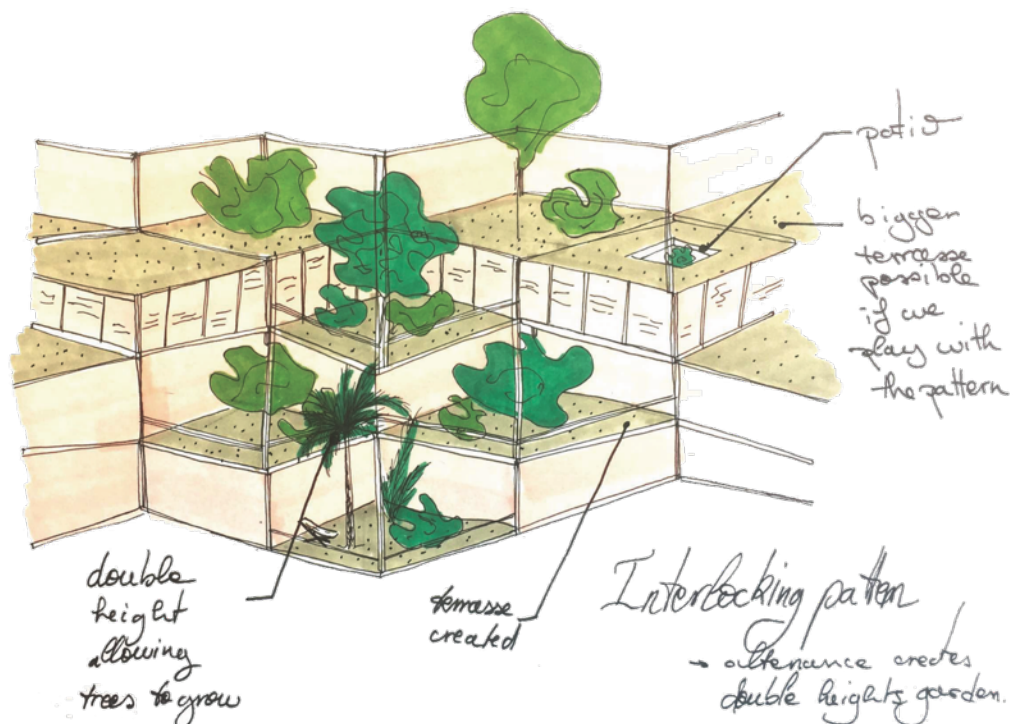


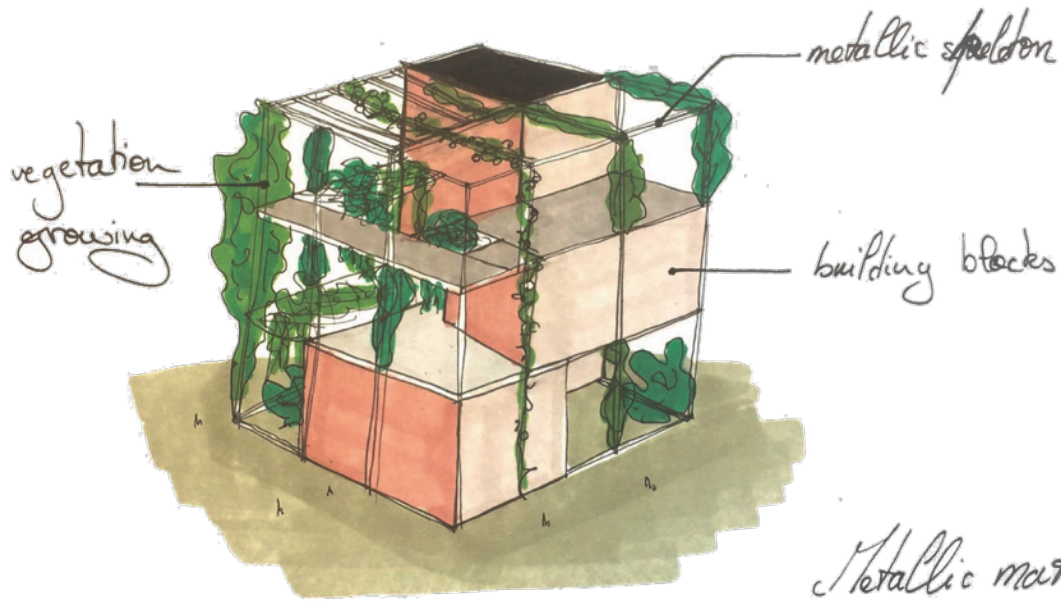
inside. The implantation of these hazardous "folies" as landmarks in the landscape guides the visitor immersed in an environment that can not be more sensory in the sense that Zardini understands it e g (Zardini, 2005).

The Floating garden of Nikki de St Phalle in Paris (2013) by J-C.Choblet is introducing a park inside the city by using riverbanks of canals as entrance and barge as ground. This floating park is based on a barge in a canal which can be an alternative in the city of Manila where being next to the riverbanks can be dangerous when flood but creating a public park on the river could be a solution. The MFO park in Zurich (2001) made by Burckhardt + Partner and Raderschallpartner is a vertical structure made out of metal where people can climb the steep stairs to go up on several levels partly covered by vegetation climbing on the structure becoming the structure creating a park. This example shows directly how to optimise space in a city, and, at the same time, engendering the even better experience of nature.

4 Urban Shelter Design

Including nature does not need to include all the criteria or typologies that we mentioned earlier on, this is just a matter of inspiration and references. By finding your inspiration in your observations on the culture, the site, the people targeted but also personal literature and architectural references, by respecting simple principles, designing a sustainable nature inclusive design is accessible. Here are some inner thoughts concerning what we can call nature inclusive design applied on the scale of a project for the urban poor in Manila.





Metallic matrix

- vegetation vertical park
- park in the building and vice-versa



bigger eaves to protect from the sun depending on the climate

possibility to put a buffer zone as a verandah to protect living areas from overheating.

Living nature

- alternative balcony loggia
- relation plain / wide

5 The Role of Architects

To take account nature-inclusive approaches, like all specific measure, we need a specific understanding and consideration of some cultural particularities linked to nature (in that case), but also connected to habits of the community. This is possible to do only by observation but, to facilitate the process, here are some practical guidelines to include nature to a project for the urban poor. First of all, we will begin with general conceptual guidelines to design for the urban poor to then continue on some basic green spaces design, to end on guidelines about constitutive elements making green spaces: trees and water.

A. Principles to design for the urban poor

- Incrementality
- Pluralism
- Malleability
- Participation
- Income generation
- Equity
- Open-to-sky space
- Disaggregation

B. Few basic principles to design nature-inclusively in architecture

- Think as much at the negative space as the positive one.
- Genius Loci: Locals materials to create a dialogue between the natural context and the architecture. e g (Norberg-Schulz referring to Otto Wagner, 1979).
- Maintain natural cycle and natural balance.
- Motorised traffic and pedestrian traffic will be treated differently.

1. Constitutive elements: Trees

- Use native species of trees.
- Ground conditions must be considered.
- Climate must also be considered.

2. Constitutive elements: Water

- Promote permeable surfaces to supply groundwater and retain and absorb surface water.
- Pleasure streams in green areas will be treated differently than pipelines.
- Instead of taking water from rivers into pipelines, taking advantage of the surrounding vegetation to absorb it and unloading the urban pipelines.
- A river that is meandering, instead of a linear canal with banks in masonry, limit the rapid flow of water and overflowing and, also, feeds the water table.

- Natural riverbanks are made of trees and vegetation, not cutting them down means not having to redo a masonry canal afterwards (forest can be used as parks).

To conclude, this essay will end with a quote from Correa that fits in with the general ideas implied in this essay on how to include nature in a project for the urban poor: « too often we think of housing only as built-up structures, i.e. the boxes - and not as an open-to-sky spaces which are so crucial to their proper functioning. This is why so many attempts at low-cost housing perceive it only as a simplistic question of trying to pile up as many boxes as possible on a given site, without any concern for the other spaces involved in the system. Result: the desperate effort of the poor trying to live in hardware totally unrelated to their needs.». eg (Correa, 1999)

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