Infrastructure as landscape as architecture

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Abstract

In a critical review this chapter shows how the Yokohama Ferry Terminal by Foreign Office Architects crossed the three distinct realms of 'infrastructure', 'architecture' and 'landscape'. This key individual project dissolved disciplinary borders between the three disciplines and achieved new methodical grounds for design. It is a precedent in a general shift in the development of the design disciplines of the built environment. The single project shows how deep conceptual shifts affect the disciplinary assumptions that initially limited this task for architects–and how versatile the strategies of infrastructure and landscape are in architecture. While the Yokohama Ferry Terminal is at first sight simply a passenger terminal, it is also an infrastructural transport-related building, used most of the time as a garden-like public space. At first elaborating on definitions of the three terms 'infrastructure', 'landscape', and 'architecture', the article will question how plausible and useful these divisions between the categories are for designers, or if we should rather focus on the crossings of these divisions. A discipline that wants to be dynamic is to be explored at its edges as well as preserved in its core. Such crossings become especially relevant in ambitious projects. With this example at hand, this chapter explores the disciplinary framework and will touch upon design methodological definitions. The case study is valuable to show the full depth of field that architecture with landscape methods can have within contemporary architectural production and how landscape and infrastructure can merge in new kinds of public artifacts beyond object centered design. The themes that make the Yokohama Ferry Terminal's form or 'scape' can be summarised under the term 'flow'.

1. INTRODUCTION

The following paper is a critical review of a design project that crossed the three *a priori* distinct realms of infrastructure, architecture and landscape. In their Yokohama Ferry Terminal (constructed from 1995 to 2002) Foreign Office Architects integrated their task of designing a building as both infrastructural and landscape design, unravelling new methods for architecture.

Alongside highlighting some specific features from the three fields infrastructure, landscape and architecture, this paper presents a single project that crossed disciplinary borders between infrastructure, landscape and architecture in a very distinctive manner. This key individual project dissolved disciplinary borders and achieved new methodical grounds for the architectural design of buildings, but also contains a disciplinary shift in the development of the built environment in general. The single project here is needed to show how deeply each of these conceptual shifts affects the disciplinary assumptions that initially limited the task at hand – and how versatile the strategies of landscape are in architecture.

The Yokohama Ferry Terminal 'Osanbashi' in Japan is a much-regarded work of architecture. Typologically it is simply a passenger terminal, an infrastructural transport-related building used most of the time as a garden-like public space. However, this project is remarkable in many respects – to begin, it has an astonishing structural design that integrates form, structure and space. And all the themes that make its form or 'scape' can be readily summarised under the term 'flow' (figure 1).

Figure 1 Yokohama Ferry Terminal (photographs by Daniel Jauslin)

The three terms 'infrastructure', 'landscape', and 'architecture' all seem to describe three clearly divided categories of objects and professional fields. 'Infrastructure' would be understood as public works designed by civil engineers, 'architecture' would be buildings designed by architects, and 'landscape' would be something a bit more difficult to define, but regarded more or less as settings for these others designed by 'landscape architects'. In speaking generally about 'landscapes' we can say that there are roughly three kinds: the garden, the cultural landscape and the natural landscape. As extensively described by John Dixon Hunt (2000), each of these modes of 'second nature' represent nature in different ways or 'stages of perfection'. In modern times gardens are designed by landscape architects, but their ambitions are now generally regional in scale. These designers do not want to be confused with gardeners anymore. Gardens, cultural and natural landscapes are creatively idealised by artists, poets and other more sensitive humans. In practice often this idealisation leads to overlapping between the three theoretical categories of landscape. For example, the urban community garden I am now designing in collaboration with my neighbourhood council is idealised by some of my neighbours to be a productive and beautiful garden, the site for group events in addition to a representative, functioning piece of nature in the city. Users and designers of projects alike are operating in between disciplines. Civil works, public buildings and designed landscapes are always attracting a great variety of interests. Infrastructures, architectures and landscapes literally become a projection of people's own interests, narratives, long and short-term agendas, daydreams or life plans.

In modern and more economic terms – and in relation to urban settings – the practical uses or functions of built human environments are now often categorised according to the terms 'infrastructure', 'landscape' and 'architecture'. Different economic concepts are contrived, creating value out of each. While utilitarian 'infrastructure' is valuable only within the network of connectivity, 'architecture' is often still valued as a precious object or real estate, and 'landscape' is an environmental setting, usually with less tangible value. Again 'landscape' is somehow more difficult to put into economic terms, unless explicitly in regards to real estate, resource extraction or food production. Leisure uses, for example, might conflict with landscape's other functions for food production – and each of these will in some instances be in conflict with the need to maintain underlying ecological continuity. A good design will somehow allow for each of these in such a way as not to be exclusive of the others. Likewise, the activity of gardening often involves managing entropic processes of growth and decay in relation to seasonal oscillations; a natural landscape can become multifunctional, and the experience of it a product marketed as a brand for tourism. The Algarve, as one example, is the name of a landscape that has been declared a marketing brand: *"Visit the*

Algarve − Europe's most famous secret" (Algarve, 2013). While it is a successful brand of major economic significance for Portugal, it also provides an example of how the priorities of the tourism industry can pose a high risk to natural landscapes (Nunes et al., 2009). With ten million visitors a year, successfully branded landscapes can become a threat to themselves.

However plausible the divisions between the categories 'infrastructure', 'architecture' and 'landscape' are, their usefulness for designers are questionable. For an innovative design agenda we would rather focus on the crossings between these divisions. A discipline that wants to be lively is to be explored at its edges as well as preserved at its core. It is a clear consequence of the life and dynamics of a professional and academic design discipline to work not only within decidedly common ground, but also to engage with the overlap of each discipline with other neighbouring disciplines. This becomes especially relevant in ambitious projects, sometimes referred to in martial terms as 'avant-garde', because the most ambitious designers fight on an imaginary frontline with an imaginary enemy.

If landscape architecture seems to have a more difficult, less defined place among the design disciplines, we might be better off starting with what it is not. Meto Vroom (1995) tried this when he said that landscape architecture is simply designed outdoor space. But his definition 'ex negativo' is at once hollow as a building block to theory and somehow sad as a perspective for practice. We could try to find a positive definition for each of the three categories. In all the three design disciplines we speak of a certain canon of types: typologies of structures, buildings and designed landscapes. Let's briefly mention two for each.

− A pipeline or bridge would be a type of infrastructure.

− A temple or a theatre would be a type of architecture

− A garden or a park would be a type of designed landscape

So some good examples of the above six types could clearly each be assigned to a discipline at first sight. But if we look closely, many great works usually engage the boundaries. Finally, defining each discipline with excellent historic, canonical examples does not help in dividing into categories. But then, if we look at water supply infrastructure: for example, the Pont du Gard, the religious architecture at the Acropolis and the great gardens of Versailles, each of them a masterpiece and World Cultural Heritage (UNESCO, 2013), we must admit that each of these great works involves a transgression across the disciplines. Such masterpieces, even though of undoubted value, are not easily attributed to design disciplines. Still, let us try to explain the departure point of the three disciplines through these examples and their craftsmen: the 'civil engineer', the 'architect' and the 'landscape architect'.
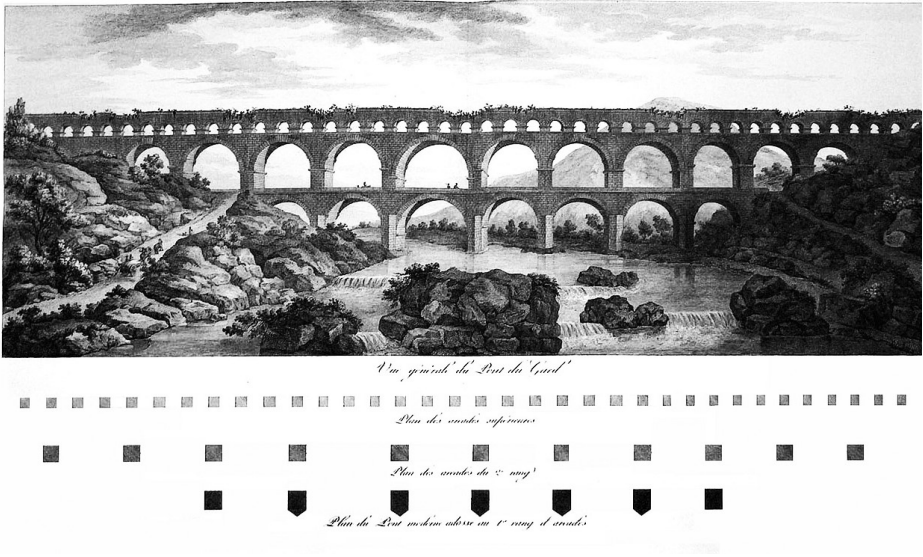
Figure 2 Pont du Gard, Gravure du Pont du Gard by C.-L. Clérisseau, 1804

Pont du Gard (figure 2) is related to water supply and thus infrastructure, notably a Latin word of Roman origin (in Latin *infra* means underneath, *structura* means fitting together). An infrastructure like this is the work of engineers (in Latin *ingenium* means talent) that uses scientific knowledge for building structures, engines and appliances. Both infrastructure and engineering come from military use, consequently 'civil engineering', the term still used today, was established as a discipline to distinguish the applications of engineering for civilian society from those intended for military use. The construction of Pont du Gard was also part of a military operation. It was probably initiated around 20 B.C. by Agrippa (64–12 B.C.) who had served as a general under Emperor Augustus at Actium. While Agrippa was situated in Gaul, he established taxation, road and water systems there. Agrippa was the founder and probably even designer of the first Roman Pantheon. The Roman Empire was then a military state at its highest power. Seldom is a brilliant man reduced to only one specialty: Agrippa was also a geographer and author of the famously lost *Orbis Terrarum*, a world map that represented the Roman Empire in the centre of a globe seen from below. It is not clear to us if Agrippa can really be called a designer, but at least he had a wide influence and versatile interest in scientific approach to measures and constructions of various kinds. All intelligence of the *Pax Romana* was used for control, and clearly infrastructure, like representation in buildings and maps, was vital to control of the empire. In French both terms are still used for the infrastruc-

ture of warfare (génie militaire) and of pacified societies (génie civil). The real power of the Pont du Gard however is not military or political but artistic. The real poetry develops in the interplay of the rhythmical arches of Pont du Gard, drawing a strong horizontal line onto the topography the wild fluvial landscape of the Gardon Valley.

The Acropolis of Athens is not simply architecture, but because of its many references from theorists and practitioners throughout architectural history, it is perhaps by now the most canonical of all building sites (figure 3).

Figure 3 Acropolis of Athens (photograph by A. Savin)

One of its most praised buildings, the Parthenon Temple devoted to Athena, was designed by Ictinus, an architect, around 450 B.C. Notably his profession is identified as the Greek word – arkhitekton (from – 'chief' and 'carpenter') still used today. The Doric style of the Parthenon and its architecture, the well-balanced tectonic composition of its facade, and the precise proportional measurements of its columns have been used by generations of authors and practitioners of architecture at such different times as those of Vitruvius (85–20 B.C.), Julien–David Leroy (1724–1803) or Le Corbusier (1887–1965); not to mention innumerable copies in classicist, colonial and postmodern architecture. It is not an exaggeration to call the study and representation of this single building one of the key representatives of the tradition and colonisation of western architecture as an academic discipline. But the many etches and prints and the replica of the Parthenon in Nashville, Tennessee, are all not nearly as powerful as the original, sited on top of four limestone

rocks of the Cretaceous ridge that have been joined in a landfill. Still today, ascending the Acropolis is the essential part of the artistic experience. And yet it is pointless to simply reproduce that one building. Its great power is deeply contextual: it is achieved by its unique position at the crown of the city of Athens, at the core of the powerful city-state.

The Versailles Gardens (among many others in and around Paris) were designed by André Le Nôtre (1613-1700), who carried the title of 'Jardinier du Roi' for King Louis XIV. Le Nôtre is undoubtedly a historical predecessor of modern professional landscape architects. The latter English term was propagated by Frederic Law Olmsted (1822-1903), who modernised the discipline in the United States alongside several of his contemporaries. The title of 'architect' should express a certain qualification, while the French modern word *paysagiste* does not need this 'awkward' expression (Hunt, 2000). The title 'Jardinier du Roi', was not only an appraisal but also an obligation. While Le Nôtre had worked for the Bourbon Kings since Louis XIII, he also served others, namely Nicholas Fouquet, a minister of finance to Louis XIV. Fouquet commissioned the building of his castle Vaux-le-Vicomte from the architect Le Veau, sculptor le Brun and gardener Le Nôtre (figure 4).

Figure 4 Castle and Garden of Vaux-le-Vicomte (photograph by Peter Bolhuis)

All together, the fireworks, dinner, water games, and a Moliere play evidently overstressed the king's patience – in addition to the intrigues of his adversaries. The Affaire de Vaux – when Louis XIV ordered the incarceration of Fouquet and commandeered all the artists for his own court – established

the 'monopoly of splendour'. Vaux is said to be the origin of Louis XIV famous saying *"le roi c'est moi"*, for the French even more important in political history than in art history. In reaction to Fouquet's display of ambition, the king literally re-established his rule of power with the building and grounds of Versailles. Before the site of Versailles had merely been a hunting ground that the Bourbon Kings received from their Florentine friends, the Gondi. The mathematical and compositional mastering of nature of the vast lands behind the absolutist king Louis XIV's giant new court, is of architectural order (Steenbergen & Reh, 2003). It is a manifestation of power in an artistic sense, overruling Fouquet's Vaux with a giant mark of power and control in the landscape. Further, controlling all of the arts at one absolutist court was the ultimate sign of godlike power.

With these few examples we could possibly argue that the deliberate crossing of a discipline's border is not limiting, but rather expanding the quality of a work. However, this might be an overly optimistic view; or the projects cited might just be some rare cases of outstanding artistic performance. The crossing of disciplinary boundaries can also possibly be interpreted as risking the loss of quality, or at least leading to some confusion about the potentials and influences of design practice on our environment. Let us discuss this blurring in the next section.

2. WHATEVER HAPPENED TO INFRASTRUCTURE, ARCHITECTURE AND LANDSCAPE?

Now, whatever happened to the division of the built environment into these three disciplines? As Marc Angélil and Anna Klingmann (1999) pointed out in an essay analysing the situation, the dissolving of boundaries between traditionally separated disciplines is the core element of Rem Koolhaas' crucial essays 'Whatever happened to Urbanism' and 'Generic City' (1995); both of which are roundly critical of the production of urban space at the end of the twentieth century.

"If architecture is declared landscape, infrastructure is declared architecture, and landscape is declared infrastructure, the precondition is created to understand the phenomenon of the city otherwise" (Angélil & Klingmann, 1999: 20). The term Koolhaas uses for this new urban mass is 'SCAPE©', without a land-scape or town-scape prefix. In the late 1990s architects like Rem Koolhaas and Peter Eisenman connected the creation of space to the idea of the smooth space of Felix Guattari's and Gilles Deleuze's *Mille Plateaux* (1980, English translation: *A Thousand Plateaus*, 1993). In their critique of the Cartesian deterministic model, these post-structuralist philosophers used spatial metaphors of the 'smooth' and the 'carved' landscape as alternative thought models, as the nomadic is introduced in opposition to the settled or resident inhabitant of

the world. These thoughts, often in literal translation, have strongly influenced architectural discussion.

As Angélil and Klingmann (1999) rightly observe, the form of the city is at stake here. The 'SMOOTH©' space, the 'MORPH©-ing' of disciplines is, in reality, a fluid continuum of interweaving systems. This is not always positive: while infrastructure is facilitating space and architecture is occupying space, landscape is suffering from loss of space. Of course there is also a positive side, and the relative forces of the three disciplines taken together can be seen as constructive for an urban structure. Such an argument can be regarded as a generally accepted aspect of current, although maybe less heated, disciplinary dialogues.

In the mid-1990s, however, architects – maybe in a 'fin the siècle' delirium – could not escape the idea that 'what ever happened to urbanism' is the loss of something. Something is broken. 'The City as Scrambled Egg' is another image, introduced by Reyner Banham (1959) as a counter concept to Le Corbusier's image of the medieval city as an egg. It is illustrated by Cedric Price's sketch (2003), often understood as a cynical or joking remark (figure 5).
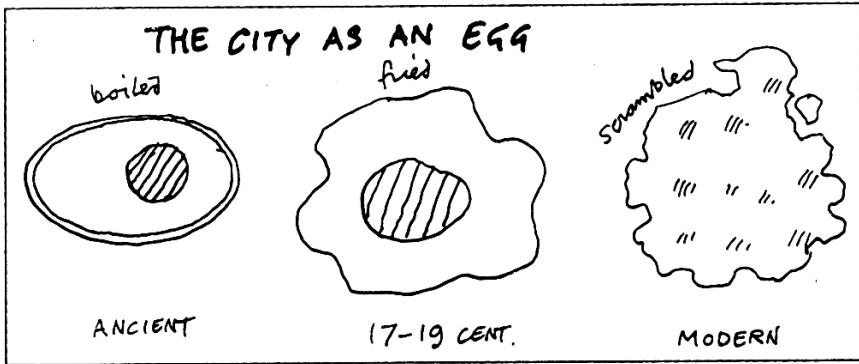

Figure 5 The city as an egg by Cedric Price, ca. 2001
(courtesy Cedric Price Fonds, Canadian Centre for Architecture, Montréal)

In his essay Banham may really have seen the scrambled egg as an image of loss. He quotes science fiction writer Isaac Asimov with *"a highly mechanised garden city spread evenly over a whole planet, its well-bred citizens communicating with one another electronically, not person to person"* (Asimov, *The Naked Sun*, 1957). Does this not evoke our current life in social media networks in the twenty-first century, more than 50 years after it was science fiction?

Architects and urbanists do seem too often deplore current urban situa-
tions, using negative images and dystopian imagery. Current economics can
lead us all to be pessimistic about the role of architects; Rem Koolhaas is also
arguing that the understanding of architects (in their profession) has not de-
veloped since medieval times, stating: *"[e]very profession has been inspired by
the market economy but we are still stuck in some kind of esoteric guild"* (Koolhaas
in Lee & Baumeister, 2007: 348).

We could summarise the current situation of urban theory and practice
with the aforementioned triangle of words. Reflecting on Rosalind Krauss'
essay 'Sculpture in the expanded Field' (1979), Angelil and Klingman illus-
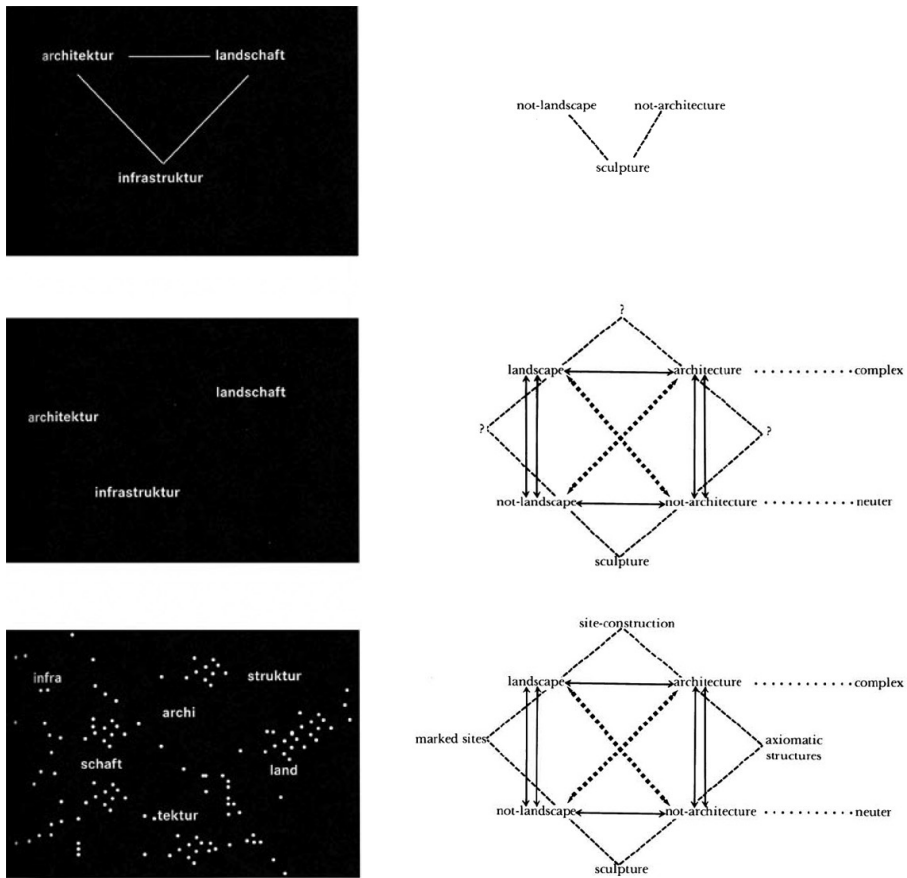trated this with the following diagram (figure 6).

Figure 6 Left:Diagram on the relation of Infrastructure, Architecture and Landscape
(Angélil & Klingmann, 1999) Right: Diagram from 'Sculpture in the Expanded Field' (Krauss, 1979)

But nothing bright and clear emerges out of that operation: from a clear set of distinct bodies of knowledge we are left to foray into a field of half terms, not excepting the author of this paper.

But can we live like that as designers? Can we just throw out word fragments, like tweets @Archi on the #scape of #land of the #tecture? In practice we see a new disciplinary model. I think rather than completely dissolving disciplinary boundaries, I would like to maintain the disciplinary triangle: infrastructure, landscape and architecture. But after introducing the subject with references like those above, I will use one single case for the rest of this paper.

As a practicing designer and design educator, however doubtful of preconceived notions and humble towards the natural environment, I am among those who should answer questions regarding the built environment of our time – be it that of urbanity or that of shrinking regions – with a creation. When I encounter a theory I often ask myself: *"can I make a drawing of it?"* If I find that I cannot, I find little value in the idea as an architect. One thing I have realised in my first years of practice (starting in 1997) is that what we propose as designers, rarely, if ever, gets any better in realisation than the actual drawings we made. Now, in order to draw clearly we must think clearly. How can we tackle such vast fields, these quickly developing forces that shape the contemporary living environment?

I rediscovered an earlier project of OMA with the influence (and collaboration) of landscape architect Yves Brunier when it was recently exhibited in Frankfurt (Elser, 2012): a masterplan for Melun Senart (1987). This project is represented by an astonishingly beautiful architectural model, depicting not the space to be built, which was designed seemingly randomly, an architecture left to uncontrollable forces of markets and the interpretation of builders, but designing the void that should not be built. The architects of OMA write:

"The built is now fundamentally suspect. The unbuilt is green, ecological, popular. If the built – le plein – is now out of control – subject to permanent political, financial turmoil – the same is not yet true of the unbuilt; nothingness may be the last subject of plausible certainties. […] At a moment when the complexity of each three-dimensional undertaking is infernal, the preservation of the void is comparatively easy. In a deliberate surrender – tactical manoeuvre to reverse a defensive position – our project proposes to extend this political shift to the domain of urbanism: to take urbanism's position of weakness as its premise." (OMA, 1987)

The project is creating the voids, and therefore preserving the real quality of the new city: its landscape.

3. MEGASTRUCTURE, MEGAFORM, MEGASCAPE

One reaction to the loss of control of space in architecture and urbanism is the strategy of increasing scale. The term 'megastructure' arose in the 1960s. Fumikhiko Maki (1964) explains the concept of megastructure as a principal of form, later differentiated from megaform large buildings within the urban tissue by Kenneth Frampton (1999).

"The megastructure is a large frame in which all the functions of a city or part of a city are housed. It has been made possible by present-day technology. In a sense, it is a human-made feature of the landscape. It is like the great hill on which Italian towns were built. Inherent in the megastructure concept, along with a certain static nature, is the suggestion that many and diverse functions may be beneficially concentrated in one place. A large frame implies some utility in combination and concentration of functions." (Maki, 1964)

Kenzo Tange's 1960 proposal for Tokyo's extension into Tokyo Bay as later used as an illustration by Maki to the concepts of that time (figure 7).

Figure 7 Extension of Tokio Bay by Kenzo Tange

The megastructure was taken to almost surrealistic extremes by Superstudio's 'Continuous Monument' (1969): by extending a single piece of architecture over the entire world, it was established to assert cosmic order on earth (figure 8). It's extremely abstract architecture is enjoyable largely because it is only just readable, and is only represented in contrast to natural landscapes or older city structures.
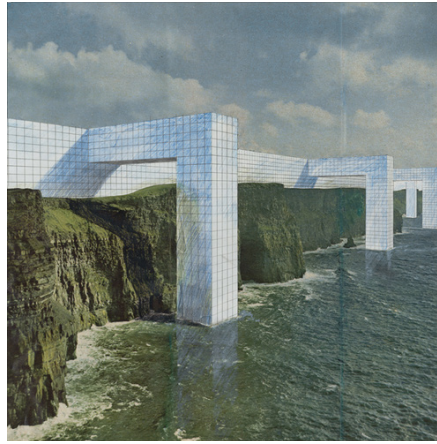
Figure 8 Continuous Monument Superstudio
(courtesy The Museum of Modern Art, New York 2009)

As multipurpose buildings, megastructures typically do not differentiate between building typologies. It is not uncommon in the history of architecture that large buildings change their use. For example, the Roman Market and Legal Court Basilica have become the prototype for the Christian Church, still carrying its original name in Romanic languages. However, the design of such border-crossing structures is truly, enduringly modern. Over time architecture became, among other things, a science of building types: multipurpose structures would not be considered architecture. Like Joseph Paxton's Crystal Palace (1851), which revolutionised industrial building production with pre-fabrication and standard elements. According to Kenneth Frampton (1980: 30) this was not a question of culture but one of engineering.

Of course, in reality designers are not only passively promoting typologies, but actively creating them. Since the end of the twentieth century, architecture, landscape architecture and urbanism have been shaking up the disciplinary framework from within each of their realms – after all, they had only recently been so differentiated. Again, Gilbert Laing Meason coined the term 'landscape architecture' in 1828, first being used as a professional title by Frederick Law Olmsted in 1863. Academic programs in urban design only began to appear after the Second World War (Harvard celebrated the 50th anniversary of their program in 2010). Between landscape and urbanism the term 'Landscape Urbanism' was established at the end of the twentieth century, and 'landscape infrastructure' came along at the beginning of the twenty-first century in the context of theoretical debate, since facilitating the naming of many educational or practicing design studios. In architecture 'bigness', yet another term propagated by Koolhaas (1995), ideologically fer-

tilised disciplinary grounds for the design of megastructures, megaforms or even megascapes.

The on-going negotiation between disciplines is probably a sign of quality. Each discipline is expanding methodological differences beyond the need for classification. If each specific design method is based on experiences of a specific discipline, that transgression beyond the discipline could be the stage of flow and the blurring of disciplinary boundaries could lead to genuine innovation. The flowing between disciplines is legitimate. I believe designs that result from an integration of the disciplines enhance each of them.

Pessimistic critics of culture warn us that craftsmanship falls apart, leaving our disciplines utterly powerless in navigating the forces of modern times. I would like to introduce one work of architecture that, in my opinion, successfully crossed these three disciplinary borders in a single stunning act of design integration.

4. FLOWSCAPES AT YOKOHAMA FERRY TERMINAL

Is the dissolution of disciplinary borders really a sign of the crisis of planning strategies? I do not think so. In the introduction paper we explained the roots of this concept as the marriage of two landscape architectural traditions represented in 'flow' and 'scapes'. We can see the introduction of 'flowscapes' as a way to operate within the contemporary, post-urbanist milieu.

The Yokohama project has been cited by many relevant experts as an example of a new trans-disciplinary practice. It has been cited in overviews of architecture as an expansion into the domain of landscape as Megaform (Frampton, 1999), Groundscape (Ruby, 2002), Groundwork (Balmori & Sanders, 2011), Landform Building (Allen & McQuade, 2011). In *Landscape of Contemporary Infrastructure* (Shannon & Smets, 2010) it is rightfully qualified to be 'infrastructure as public space'. All three disciplines seem to converge on this single building. But how has this been done?

Osanbashi was the result of an international competition that targeted a very ambitious architectural intervention. Yokohama, at the southern end of Tokyo Bay, prides itself on being the most important harbour city of Japan and hosting a terminal of national importance for the largest cruise ships. For the FIFA 2002 World football championship Yokohama was to build Japan's largest stadium, to be the venue for the final.

Alongside other city development initiatives the City of Yokohama launched the Ferry Terminal competition for cruise ships. Compared to other Japanese cities that historically reflect the culturally closed society of the archipelago state, as a port city Yokohama was more heavily influenced by Chinese and European culture and architecture. It became a relatively open city

long before modernism. The 1970s economic boom in Japan, and ship trade and transportation was certainly an important factor in this development.

The competition was announced in 1994, and finalised in 1995. Six hundred and sixty teams participated, roughly half of them from overseas. In the same span of time Rem Koolhaas was finishing his influential 1995 publication S,M,L,XL, which I have already quoted several times as providing examples of a kind of disciplinary confusion. In many ways the Yokohama Ferry Terminal looked like the answer to questions then being posed about the possibilities of form-finding within the architectural debate of its time. It seemed to hit a disciplinary nerve, and from the start the project grabbed the attention of architects, in both academia and in the profession.

From among the many architects who entered the competition, including both established architects as well as the young and ambitious, two complete unknowns Farshid Moussavi and Alejandro Zaera-Polo (2002) emerged as first in the selection procedure. In collaboration with structural engineer Cecil Balmond of Arup, they proposed a very innovative structure; while in terms of practical experience in construction, they were still relatively inexperienced. At the time they were teaching at the Architectural Association, and they said, *"this is a project we never planned to win."* (Salazar et al., 2002: 9) Rather it was designed to *"explore some possibilities that we had become interested in"* through three projects for publication in the AA Files, the magazine of the London Architectural School (which became the cover of AA Files 29, 1994) (figure 9).
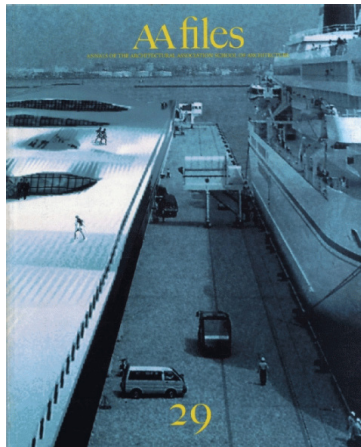

Figure 9 Yokohama Ferry Terminal, FOA 1993-2001,
on the Cover of *AA Files* nr. 29

In his appraisal juror Rem Koolhaas describes the winning design, stating: *"it is unique (there has never been a pier like it), and it is architecturally an experiment: an investigation in a new, more fluent way of organising flows – no longer everything 'put in its place' but a freer language that can make the familiar exciting again."* (City of Yokohama, 1995: 9)

Both young architects had actually worked at Rem Koolhaas' firm OMA in the early 1990s. At that time other members of OMA developed the Yokohama Masterplan and Jussieu Libraries (1992), and both evidently left certain traces (see Ruby, 2002). During the time of the Yokohama competition, AA published the Jussieu Libraries of OMA 1992–1993 (figure 10).

Figure 10 Two Libraries of Jussieu, OMA 1992-1993, on the Cover of *AA Files* nr. 26

It was the cover page of the same magazine that Moussavi and Zaera-Polo were developing their design for, and was a project of one of the assigned jurors. In the same period former OMA colleagues of Moussavi Zaera-Polo, Winy Maas and Jacob van Rijs of MVRDV, started their design of Villa VPRO (1993–1997), which in many ways applied the concept of OMA's Jussieu Library into another type of building. They would later postulate, *"The Building is the Landscape"* (MVRDV, 1999). Likely these connections are more illustrative of the context than somehow indicating a continuation. Even so, the Yokohama project must be seen as quite an exceptional case of successfully negotiating, through collaborative means, between disciplinary boundaries.

As an architect myself, I had followed the project ever since it first appeared in publications. It was then an interesting experiment, and many colleagues were curious whether and how it was actually going to be built. I still

remember my own surprise when I saw the completed building published (Salazar et al., 2002) – after having somewhat lost track of it while busy with my own early built projects. I first visited the building in 2010 on a conference visit to Japan as a field trip in my PhD Research on 'Architecture with Landscape Methods' at Delft University of Technology. Even knowing the building rather well, from the aforementioned publications since the competition's inception, in reality it has still many surprising aspects. Firstly, one's approach to it – from extremely busy Tokyo through dense Yokohama – provides for a sudden relief and surprising calm. While at the entry traffic lanes, taxi and bus stops dominate, soon after curb side begins a large and extremely calm world. The sea view and gently undulating surfaces create a very special atmosphere. One senses that the giant pier is totally encompassed by the sea, although the harbour situation at Yokohama is quite industrial when compared to a beach at the open sea. In this regard it is very much comparable to a English landscape garden, where movements and routings and views are guided through, and framed by, the manipulation of a designer in order to connect a space to the wider landscape of the fields – or, in this case, of the sea. Even for someone who studied this building the spatial appearance is surprising, even stunning, in reality.

The most surprising thing though is the usage of the building. In general it is quite unexpected to see joggers, people with baby strollers and couples taking wedding pictures in a building – here it is commonplace. Also common are bridal couples posing for their wedding albums. People oftentimes sit on towels or cushions, just as they would for a picnic in a garden or park. A friend of mine observed how people strategically reserve a little space for their families to see the fireworks by spreading blankets on the wooden deck. Many visitors alongside appear just to enjoy the building for leisure time, talking to friends, outdoor exercise and merely walking. It is obvious to the visitor that this infrastructural building is also used as a kind of a park or public open space. Its indoor and outdoor spaces are inviting for walking and experiencing as a landscape – this curious convergence of uses does clearly not match the above separation of disciplines.

The intended infrastructural use – the docking of ships, ostensibly the main purpose of the building – is actually not requiring much more than a continuous connection on one level, on two sides, to the entry deck of the ships. The buildings' main passenger flow is from street level to boat level, fixed in the competition brief at a height of 5.2 metres above the pier. This function requires large capacities for thousands of passengers boarding or clearing large ships at peak times. The traffic zones, designed to host large numbers of visitors, often remain unused. These halls, then, sometimes remain empty, but are often also being used for strolling and connecting: a conventional, if rather informal, leisure activity for a pier.

The Yokohama Ferry terminal design proposed a series of three continuous undulating planes, intersecting with each other on many levels with a total of eleven ramps. All of the passenger connections form one continuous flow through the building – or rather the projected flow chart diagram of the building generated its continuous form (figure 11).
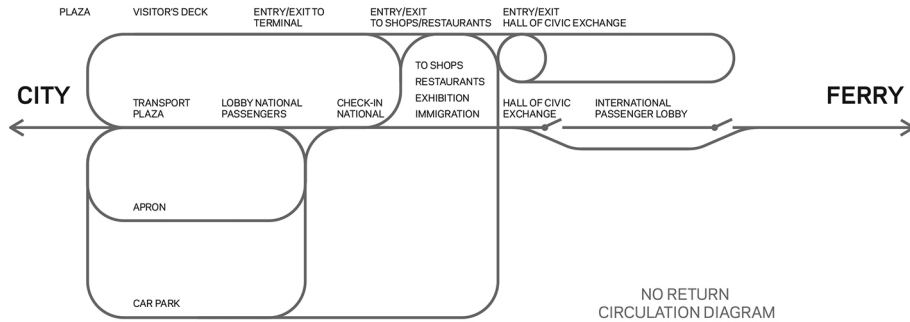
Figure 11 Circulation Yokohama Ferry Terminal (courtesy Foreign Office Architects)

This flow was designed with a flowchart: a diagram of the circulation pattern was drawn up to understand the flows of passengers across the building. In the original competition drawings this flow chart is broken down into a set of views, as a nonlinear, manifold storyboard, identifying a series of viewpoints in between the undulating planes in addition to framed views of sky and water. This method of using flows for creating a scenic route is practiced in landscape architecture as a 'sequencing of composed views' (Nijhuis, 2011). Having more in common with Frank Lloyd Wright's notions of plasticity and spatial continuity (perhaps best realised in his Guggenheim Museum of 1938–59), in architectural terms this organisation of the space in section and plan goes far beyond other modern spatial concepts – such as Le Corbusier's Plan Libre, or Adolf Loos' Raumplan (Risselada, 1988) – and to this day Osanbashi still remains a rare example of this high level of spatial, structural and formal integration.

Hokusai's famous woodblock print of a giant tsunami wave inspired the designer's formal approach to the problem, connecting the typology with a strong image. The building also uses the form of folding waves for the structural design. The main planes integrate the bearing system: there is no other structure of columns and walls to do the usual shifting and distributing of horizontal to vertical load bearing elements that architects call tectonics. It has also been described in architectural terms as an 'a-tectonic' building, although plate tectonics (the geological movement that besides erosion and

sedimentation shapes landscapes) could very well describe the analogy to the form-finding of this project. The theoretical discussion of architecture was then much revolving around continuous space, folding, etc. Such terms were vividly discussed by prominent architects such as Peter Eisenman in *Folding in Time* (1992) or Gregg Lynn's formative AD issue *Folding in Architecture* (1993) that both refer to 'The Fold' again – like Angélil's (among may other's) quotes from *Le Pli* by French philosopher Gilles Deleuze (English translation: *The Fold*, 1993).

The civil engineering side of the project is also mirrored in a novel structural 'folding' approach. The folded planes and main structure of the two large girders are structurally seen as steel tube bridges (figures 12, 13 & 14).
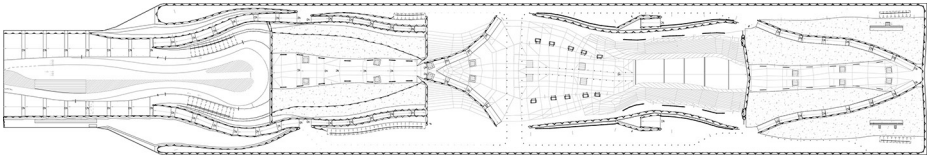

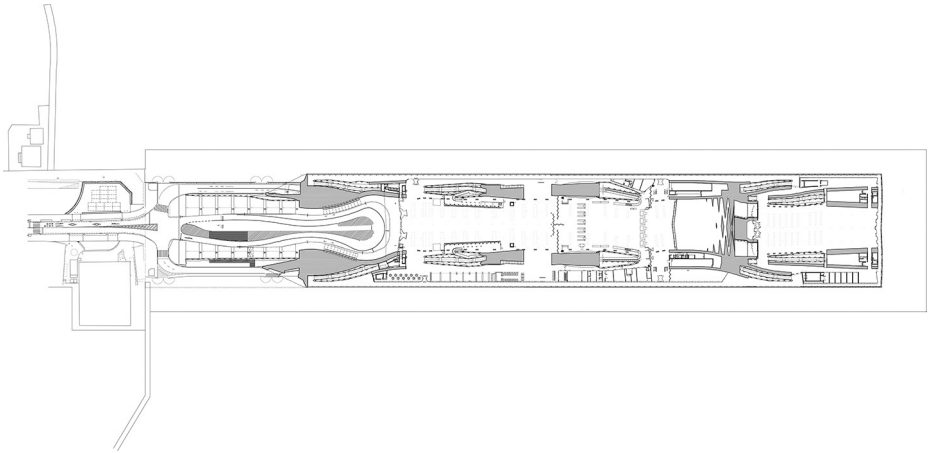**Figure 12** Roof Plan Yokohama Ferry Terminal (courtesy Foreign Office Architects)

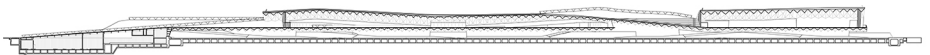**Figure 13** Floor Plan Yokohama Ferry Terminal (courtesy Foreign Office Architects)

Figure 14 Section Yokohama Ferry Terminal (courtesy Foreign Office Architects)

Figure 15 Yokohama Ferry Terminal (photograph by Daniel Jauslin)

In the first competition design the analogy with waving was translated into a bearing system of steel plates inspired by corrugated cardboard, the most common and cheapest packing material. Later in the design development that system was replaced by a steel truss system that consisted of spatial trusses as a primary structure, introducing the folding analogy into the secondary structure or actual form of the beams – providing more visual impact, while at the same time apparently dissolving the structure into space. In both structural approaches the tertiary longitudinal beams are four giant girders, comparable to trapezoid sections of steel or concrete bridges, though vastly more complex in geometry. Both structural approaches follow the same goal: the structure uses no columns, forming large continuous spaces that open onto the harbour city panorama and to the sea itself on three sides. This gives the impression of a passageway, the far-flung feeling one can experience on a ship deck – at a scale comparable to that of the longest ships of the world.

The application of a new form of structural design was solved in numerous interesting ways for this project. Precision and structural optimisation within the main structure could only be achieved by using the high precision structural welding techniques that are used for ship hulls: large pieces of structure were consequently prefabricated on several competing shipyards, and large steel units were shipped by sea to the site in a process very similar to bridge building. Certainly this process, guided by architects, is very remote

from the antique Greek carpentry that inspired the formal system of Western tectonic architecture.

Negotiating the whole range of disciplinary transgressions possible among the three disciplines in one single project, Yokohama is as much infrastructure as it is architecture and landscape. It uses all of the disciplinary frameworks, merging them but not losing ground, creating an anti-object with iconic strength, an experiment with technological vigour. In exceptionally good or intriguing cases of architecture, the formal and theoretical, the constructed and diagrammatic, are not only complementary but inform each other, of which this project is a proof.

The fascinating result of Osanbashi's intended experiment in spatial design methods is that several polar oppositions between disciplines are transgressed and replaced by productive relationships. The complex three dimensional spatial composition manages to multiply its utility and spatial experience in versatile ways: diverse programmatic configurations are based on flows of people, but also on the reuse of spaces conventionally optimised for only a few occasions in a manner that renders them useful for multiple functions in non-peak moments. They become inter-operative.

The spatial effect of this piece of the transportation network goes beyond its mere utility as a terminal; it could be called 'infrastructure as architecture'. Conversely, if we describe works of architecture as objects of design, then the landscaped infrastructure at Yokohama Ferry terminal is a non-object alternative we could call 'architecture as landscape'. Osanbashi provides what is perhaps an unparalleled example of a traffic infrastructure turned into a widely popular public space, enabling experience of the seafront in a dense urban situation: 'infrastructure as landscape'.

Most importantly, all three disciplines are integrated and mutually reinforcing one another, working together in an innovative, unified spatial composition, while facilitating diverse purposes. In short: infrastructure as landscape as architecture.

REFERENCES

AA Files 26 (1993) *Office for Metropolitan Architecture: Two Libraries for Jussieu University, Paris*

AA Files 29 (1994) *Foreign Office Architects: Yokohama International Port Terminal and other projects*

Algarve (2013) Slogan on *http://www.visitalgarve.pt* [accessed October 2013]

Allen, S. & M. McQuade (eds.) (2011*) Landform Building: Architecture's New Terrain.* Baden & New York, Lars Müller

Angélil, M. & A. Klingmann (1999) Hybride Morphologien: Infrastruktur, Architektur, Landschaft. *Daidalos* 73 (10): 16-24

Balmori, D. & J. Sanders (2011) *Groundwork: Between Landscape and Architecture.* New York, Monacelli

Banham, R. (1959) City as Scrambled Egg. *Cambridge Opinion* 17

City of Yokohama (1995) *Yokohama International Terminal International Design Competition* (Jury Report) Yokohama

Elser, O. et al. (2012) *Das Architekturmodell. Werkzeug, Fetisch, kleine Utopie; The Architectural model. Tool, Fetish, Small Utopia. Katalog zur Ausstellung, DAM Deutsches Architektur Museum*. Frankfurt a.M, Scheidegger & Spiess

Deleuze, G. & F. Guattari (1993) *A Thousand Plateaus: Capitalism and Schizophrenia.* Minneapolis, University of Minnesota Press

Deleuze, G. (1993) *The Fold: Leibniz and the Baroque Minneapolis.* University of Minnesota Press

Eisenman, P. et al. (1992) *Frankfurt Rebstockpark: Folding in time*. München, Prestel

Frampton, K. (1980) *Modern Architecture.* London, Thames and Hudson

Frampton, K. (1999) *Megaform as Urban Landscape*. Ann Arbor Michigan, The University of Michigan Alfred Taubman College of Architecture and Urban Planning

Frampton, K. (2011) 'This building intrigues me, because it is many things at once'. Transcript by the author Lecture at Roger Williams University, Bristol Rhode Island http://www.youtube.com/watch?v=-tI9h9bUJxPE [accessed October 2013]

Hunt J.D. (2000) *Greater Perfections: The Practice of Garden Theory.* Philadelphia, University of Pennsylvania Press

Lee, S. & R. Baumeister (2007) *The Domestic and the Foreign in Architecture.* Rotterdam, 010

Ruby, A. (2002) *Groundscapes: The rediscovery of the ground in contemporary architecture.* Barcelona, Gustavo Gilli

Krauss, R. (1979) Sculpture in the Expanded Field. *October* 8: 30-44

Koolhaas, R. et al. (1995) *S,M,L,XL.* Rotterdam, 010

Lynn, G. (ed.) (1993) Folding in Architecture. *Architectural Design Profile* 102

Maki, F. (1964) *Investigations in Collective Form: Three Paradigms.* Reprint in: *Nurturing dreams: collected essays on architecture and the city (2008).* Boston, MIT, p 44-56

Moussavi, F. & A. Zaera-Polo (2002)

MVRDV, Salazar, J. (ed.) (1999) *MVRDV at VPRO*. Barcelona, Actar

Nijhuis, S. (2011*)* 'Visual research in landscape architecture', in: S. Nijhuis, R. van Lammeren, F. van der Hoeven (eds.) *Exploring the Visual Landscape*. Amsterdam, IOS Press

Nunes, M. et al. (2009) Hazard assessment in rock cliffs at Central Algarve (Portugal): A tool for coastal management. *Ocean & Coastal Management*, 52 (10): 506-515

UNESCO (2013) Pont du Gard (Ref. 344) (Roman Aqueduct). Retrieved from: http://whc.unesco.org/en/list/344 [accessed October 2013]

UNESCO (2013) Acropolis Athens (Ref. 404). Retrieved from: http://whc.unesco.org/en/list/404 [accessed October 2013]

UNESCO (2013) Palace and Park of Versailles (Ref. 83bis). Retrieved from: http://whc.unesco.org/en/list/83 [accessed October 2013]

OMA (1987) Ville Nouvelle Melun Senart*,* France. Retrieved from: http://www.oma.eu/projects/1987/ville-nouvelle-melun-senart [accessed October 2013]

Price, C. & S. Hardingham (ed.) (2003) *Opera.* Chichester, John Wiley & Sons, p 92, 119

Risselada, M. (1988) *Raumplan versus Plan Libre, Adolf Loos / Le Corbusier*. Delft, Rotterdam, 010 (reprint 2008)

Salazar, J. et al. (2002) *Verb Processing (Architecture Boogazine)*. Barcelona, Actar

Shannon, K. & M. Smets (2010) *The Landscape of Contemporary Infrastructure*. Rotterdam, NAi Publishers

Steenbergen, C. & W. Reh (2003) *Architecture and Landscape: The Design Experiment of the Great European Gardens and Landscapes.* Basel, Birkhäuser

Vroom, M.J. (1995) *Outdoor Space: Environments Designed by Dutch Landscape Architects since 1945.* Bussum, Thoth