

EPsn  
437

ALI HIJAZI



WRIST TWIST

LIVE IT > RIDE IT > RACE IT

EP<sub>sn</sub>

437

ALI HIJAZI



**WRIST TWIST**

LIVE IT > RIDE IT > RACE IT

| only bikers know very well why dogs stick their heads out of car windows |



# Contents

Mission Statement .....	1
Intro .....	2
Intro to Motorcycles.....	2
Motorcycles Culture.....	4
Motorcycles sub-cultures .....	5
History in Lebanon, Why Motorcycles? .....	6
Superbikes Subculture in Lebanon .....	7
Clubs of Motorcycles .....	7
Lebanese society .....	8
Self-Identification and Architecture .....	8
Mental and Physical Relief .....	8
Design Evolution of Superbikes .....	9
i ride   my own experience .....	10
My Aim.....	12
Site choice .....	13
Initial Design Approach .....	14
Initial Precedent Examples .....	15
Fiat Factory, Torino .....	16
Vegas Exhibition .....	18
BCD F1 Racetrack .....	20
The Site .....	23
Site .....	24
The FIM Track Standards .....	28
Track Configurations .....	30

Conceptual Design Investigation ..... 33

Intro .....	34
The Sense of Identity and The Sense of Place .....	35
Portability, Transformability, and Free Movement .....	36
Defining What Mobile Adds .....	37
Human Perception of Portability .....	37
Nomadic and Conquerors' Examples .....	38
Portable Architecture Erection and Sensation .....	40
Composition and Methods .....	41
Machinery in Ephemeral Building and Idea of Movement .....	42
Precedents Analysis .....	43
Moblie Theater by Emilio Perez Pinero .....	44
Blow-out Village by Archigram .....	46
AVLB .....	48
Elements of a Deployable Structure .....	50

The Program ..... 53

Preliminary Design ..... 56

Sketches .....	57
Models Experimentation .....	63
Models: THE DRIVING FORCE .....	66
Interaction with the Highway .....	70
The Foldable Bridge .....	71

References ..... 74



## Mission Statement

Everyone wants to live forever, but aspirations differ, some prefer to exist. My purpose is to live.

One way to live is motorcycles; they have been associated with freedom and rebellion since their early days, they are about the creation of an identifiable picture of yourself as an individual, it is a lifestyle by itself.

I want to create a hub for all bikers in Lebanon that can stretch to the surrounding countries as well.

My aim in this project is to translate the soul of superbikes into an experimentation of portable and transformative architecture that celebrates this phenomenal culture.

But what is the relationship of users with the place? And how their "identity" that is anchored to their "sense of place" is formed?

How can the powerful and aggressive figure of a superbike get translated into architecture? How can the riding sensation get spatially realized?

How the design should respond to both the scale of the project and the materials and state-of-art craftsmanship of the motorcycles themselves?



## Intro

First I would like to introduce you to the motorcycle, what it is, and its main parts and have a glance on its aspects.

The evolution of superbikes design through time was driven by advancing technology, more aero dynamicity, contemporary design, ergonomics and most importantly the user experience and critiques of the bikes themselves. The same special aspects that companies are proud of during the release of each model: attractive design, technology, simplicity of use, top speed, sharp acceleration, ability to conquer corners with extreme ease, comfort...

Here is a diagram that describes the main parts of this state-of-art machine that turn this beast alive.



Front tire and suspension, all about stability and control



The chain, transfers the power from engine to rear tire



rear tire, it is the tiedown with the road to transfer the massive engine power



crankshaft, the main element of the engine



Odometer that shows speed and other vital information



main chassis frame

GSXR 1100

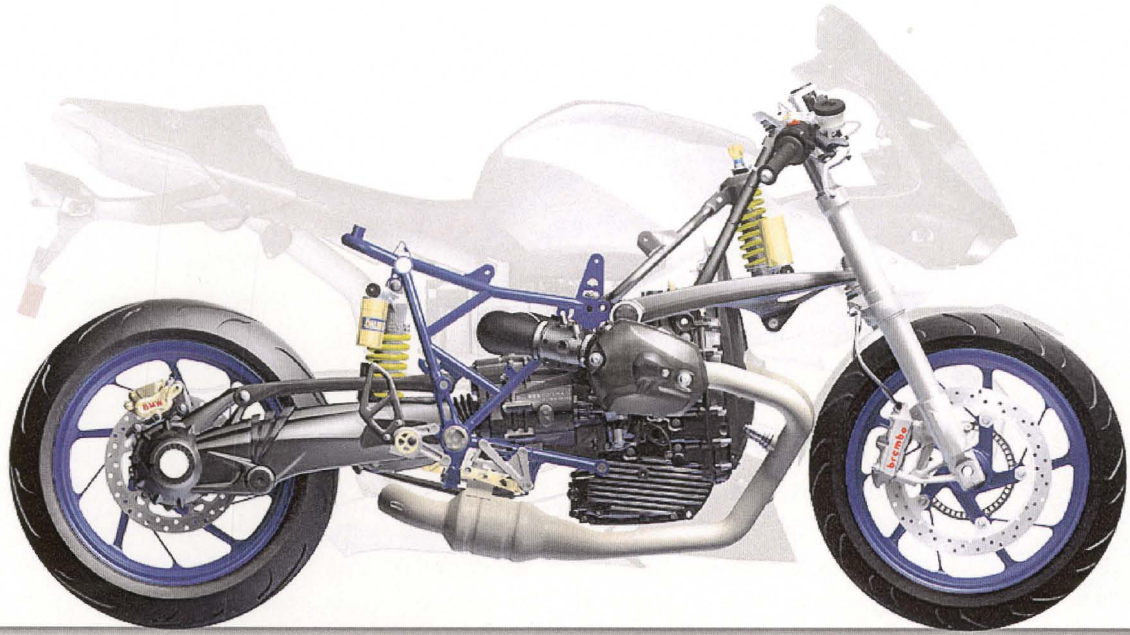


rear air-flowing design



secret of the glory, the engine

From Suzuki's website





Sarcastic road sign for superbikers

## Motorcycles Culture

The culture of motorcycles can be tracked to the beginning of the last century; bikes were still preliminary but ensured a different feeling and a new unique experience. The American bikers have always been the pioneers, with the development and the spread of this culture, sub-cultures arose from within, clubs were formed and wide varieties of motorcycles types were designed giving the rider nearly open choices to ride.

### Why motorcycles?

Riding a motorcycle provides the alternative that goes out of the norms. What I mean by norms here is concerning our daily experience on the road, like traffic, speed, attraction, power, parking ability. This experience is a pleasure by itself, it is directly associated to freedom and rebellion against the inner self, family, society and the state. The rider feels free, not restrained to anything and feels superior on the road, somehow it plays on the ego, the king on the road.

In the movie "Torque", one of the most powerful superbike movies, the director Joseph Khan chose as the starting scene two car racing at a very high speed

and out of nowhere a superbike comes from behind and just conquer them as if they were not moving. Khan wanted to imply the motorcycles' superiority right from the start, to introduce us to what bikers believe in and then proceed with the narrative of the movie.

Motorcycling as risky business is definitely one of the key iconic figures of the sport. And make no mistake, far from ignoring the risks, most of the people opting to swing a leg over a bike, do consider the dangers.

Motorcyclists are rapidly increasing in numbers. Sure motorcycling in general and sport biking in particular, is becoming more and more an on-the-edge kind of sport, attracting people who are risk-takers and interested in an accelerated excitement outside the norms. These days there are likely far more motorcyclists who are professionals and working class citizens than there was twenty years ago, the progress is captivating.



Member of the Straus Club in California

## Motorcycles Sub-Cultures

The subcultures that have emerged are sort of closed on each other and they are exclusive in their own characteristics and behavior, here is a glance about these sub-cultures that they primarily include:

Harley Davidson subculture:

which could be tracked as the oldest, part of it was associated with outlaw life in the states and gained a dire reputation, whenever there was Harleys there was dipping into trouble, this could not cancel or fade the good side of it that celebrates the freedom correlated to this type.

Motocross subculture:

Motocross is the technical term for off-road motorcycles that can go theoretically anywhere, it is a famous trend with people go to discover new places and feel the danger away from the road, the Rally of Paris-Dakar is a good example.

ouring subculture:

Touring is the kind of bike that is designed for long journeys that go across countries, like the famous Alps tour, this is a very peaceful trend compared to the two above, the riding class of this genre are older in age.

Superbike subculture:

superbike is the fastest kind of motorcycles on the planet with some extreme performance like top speed of 300km/h while reaching 200 in less than 6.2 seconds. The top notch of any manufacturer is their production superbike, it is the elite of their line. It is the most dangerous and exciting type because of the thrilling performance it offers.



Harley Davidson



Motocross



Touring



Superbike



Early bikers in Lebanon



## History in Lebanon, Why Motorcycles?

The sport started in Lebanon only for the elite and remained for a long time this way, this culture was not widespread, it was a lived pleasure for some, a dream for others. (Please note that when I mention motorcycles I automatically exclude scooters that you encounter every day).

In the Lebanese society where the one has some pre-drawn paths to follow in life, and this is one of our society characteristics that we can't easily escape, motorcycles have presented a way to express freedom and rebellion over family, society and the state representing the body-politic itself.

In his book "Philosophical Ridings, Motorcycles and Meaning of Life", which constitutes a thought-provoking examination of philosophical issues relevant to motorcycling, from aesthetics to justice and, ultimately, the nature of death and existence, Craig Bourne states that "motorcycles are well-placed to illustrate profound philosophical ideas and the practice of motorcycling raises a host of important philosophical issues, such as the meaning of life and the significance of

danger and death, individual freedom and the legitimacy of state interference, our obligations to humans, animals and the environment, and the boundaries of our concept of art." We can observe the phenomenon he discusses in the Lebanese society where we negotiate the facts he states subconsciously in our daily life.

Motorcycles as a hobby and sport beyond the figure as solely means of transportation was based on personal initiatives from the wealthy personnel after the Second World War and on till the late seventies. Tiego Augustin or the "survivor" is one of the oldest riders still alive, as a retired general in the Lebanese army, he is now running the Kawasaki dealership as a part of Rymco Corporation, he is still riding and organizing road trips for superbikes, he was so helpful enlightening the history he has experienced. Since the eighties and on, the sport has taken a broader range but was still limited with a bad reputation chasing most of the bikers because of some bad behavior and some pre-drawn judgments by people.

During the last few years, the sport spectacularly increased by all means, number, awareness, apparel, behavior, used technology.

## Superbikes Subculture in Lebanon

Superbikes are the extreme in motorcycles, extreme in speed, cutting-edge technology, aggressive shape, leading design, performance and aerodynamics. So it simply represents the utmost way for this freedom and risk-taking that is part of shaping the lifestyle and even personality and thinking of bikers.

This super sport type of motorcycles was notorious till the last few years where personal initiatives in buying brand new state-of-art superbikes that are beautiful, fast, powerful and – most importantly – calm, started to be fruitful in spreading this phenomenon that multiplied in the last three years.

## Clubs of motorcycles

Every motorcycle type has its own clubs and gatherings because of the distinctive riding style of each type, a motorcycle club becomes like a brotherhood that ties the bikers together. Sometimes it becomes an alternate family, they spend time together, go out together, even outside the world of motorcycles, this atmosphere creates real friendships.

Spatially, each group has their own routes to follow, their gathering cafés, and even they prefer to take different lanes when they are on the highway, so their deployment in space is special than each other, but this is not quite the matter of my investigation.

*it should be!*

## ATCL (automobile et touring club du Liban)

This club has been established in 1919 and developed ever since to host Lebanese, Arab and some international events like car races and rallies, also ATCL organizes tennis events, and nautical events on the coast of Lebanon. ATCL has been affiliated and recognized by A.I.T. (Alliance Internationale du Tourisme) and F.I.A. (Federation Internationale de l'Automobile).

It represents a good example that a similar motorcycle association could be established to handle the sport and have the local and international links to promote the sport further ahead and render it more professionally spread.



## Lebanese Society

Lebanese people by nature tend to be magnetized by everything new and trendy, they love the joy of life and show-off, whether we have our personal position and opinion about how Lebanese think or not, we cannot deny this fact. So people will love to come and watch races, stunt shows, events, or even just a show of best bikes in town like as if they were in an auto show.

## Self-Identification and Architecture

The significant expansion of the leisure and 'lifestyle' market and the continuous creation of new activities and sports demonstrate that leisure activities are already a necessity of modern urban life. Escape and compensation may be the more of the negative side keywords, enjoyment of nature and relaxation the more optimistic and positive ones.

1  
So, what are the characteristics of an architecture that is fully adaptable to this variable living and working pattern? Easily recognizable now is the interdependence of architecture, furniture, appliances, clothing, vehicles and consumables –all the required

aspects of modern life. For instance, this is simply fashion and marketing, in fact architecture is frequently used to sell associated products as part of a lifestyle. But it is also about creating an identifiable picture of yourself as an individual, how to create this picture as 'me' as a biker through architecture, it would be a mutual intimacy.

## Mental and Physical Relief

The mental pressure of work requires physical activities such as sports. Certain kinds of sports are more relieving than others depending on the level of adrenaline rush and excitement involved in action.

It is in sport and leisure activities where people are finding this integration of physical and mental being, lost through "separative thinking" in philosophy and science over the last three centuries. People who fly, sail and race are exploring the forces of nature (wind, water, gravity) in a playful and relieving way. They are learning in a more sensual approach to nature, lost because of our highly alienating modern life. Indeed sailing, gliding and road racing need an intense mix of the two most precious human capabilities: thinking and feeling.

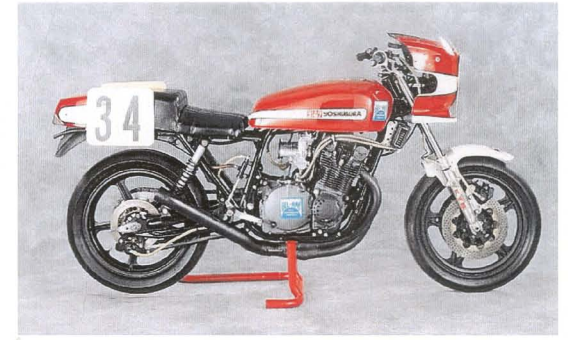
8

## Design Evolution of Superbikes

I will show a series of photos that will illustrate the evolution of superbike design from the seventies up till this year. They are all of one brand (Suzuki) to better clarify the progress.



1974 650cc



1979 850cc



1986 GSXR 1100



2007 GSXR 1000



2001 GSXR 1000



2007 GSXR 1000

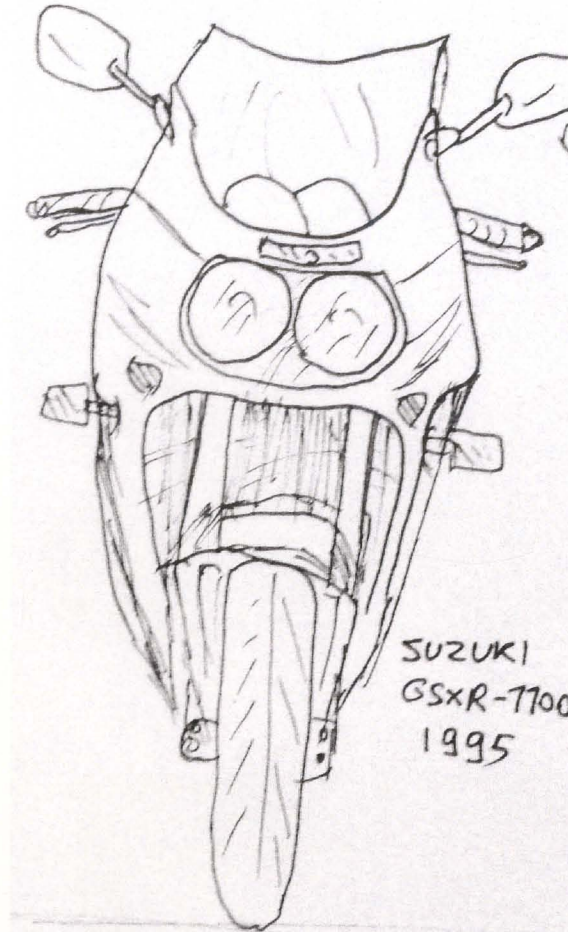
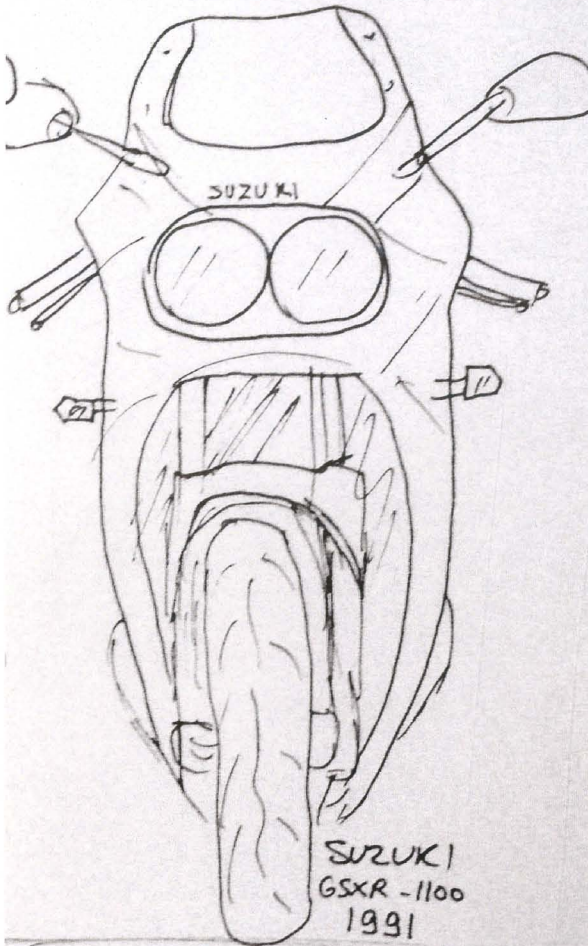


2011 GSXR 1000 (visionary)

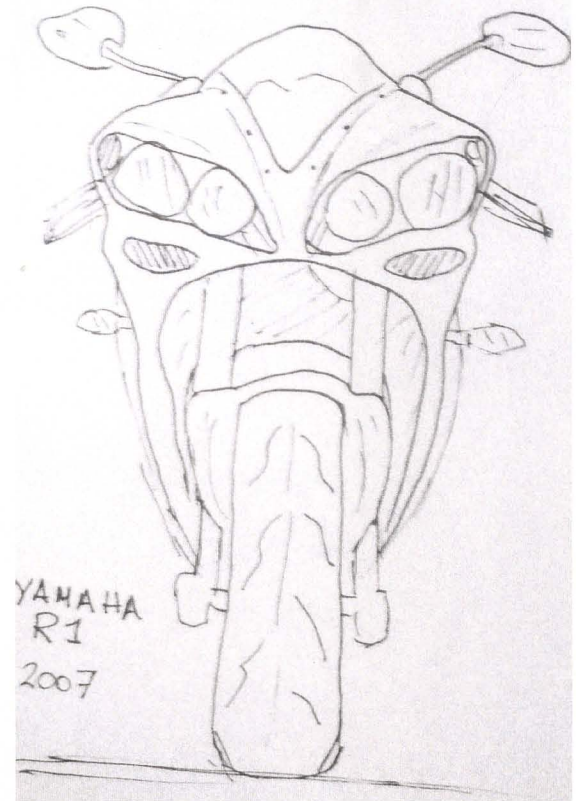
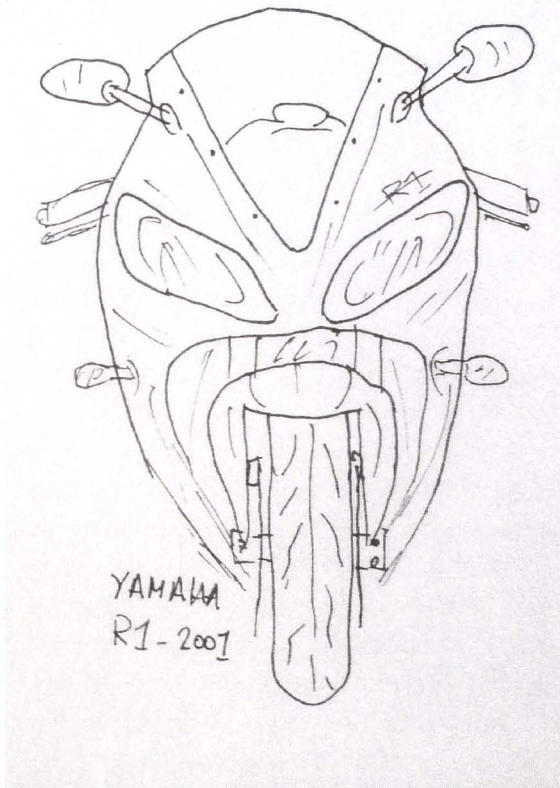


## i-ride | My Own Experience

I have owned four superbikes in my life, and I climbed the ladder step by step, from a conventional old school superbike to the most advanced one on the road, here are the sketches I drew of the front views of each one of them, they show how their design has developed over time, and how I perceived them, back in school days, I used to sketch the shapes of superbikes on my copybooks, even on my match and physics ones, dreaming of the day that I will own one. I used to think and wonder how they evolved in design, why, if the shape is like this what would it change in the course of the bike, if the tire is bigger or flatter, what can the exhaust system take different shapes, what if headlights were to the side instead of in the center, and all sort of thoughts and speculations of an early teen-ager offering freedom to his mind to dream about his inner-conscious fantasies.



The life that I lived has affected my interest in design, this evolution of design was driven by the technology of engineering that controls and limits the shapes. I still recall that during the Contemporary Architecture course, we had to write a paper discussing and investigating our personal interest in architecture that we accumulated through education years, it was based on what we see and what we feel when we observe our objects of interest, and then I chose the ways structures are expressed in buildings facades and interiors, the hidden factor behind my choice back then for the course, was eventually my interest in superbikes architecture (art of making it). I figured this out while writing my thesis! It certainly has affected my thinking as an architect.



With my daily extensive interaction with my superbikes, I know every single detail in my bike, how every single device works, by now I have a good exploration of tools, application of assembly skills, how to attach, join, unfold, upgrade, remove... this also affects my thinking as a designer because it adds the layer of experimentation and real-world experience to the design attempt.

when I am out on the road riding my superbike, I feel I am the king on the road, I feel superior to cars and even other motorcycles, I feel free to do anything and go anywhere, whenever I go, there is people staring at me fascinatingly, traffic would bother just a bit, there is no machine that can chase me or even catch up with me. I feel unique!

How?

## The Aim

I want to create a hub for all bikers in Lebanon that can stretch to the surrounding countries as well.

Worldwide, superbikes require a specific type of driving license other than the rest of motorcycles, special education is required, complete apparel is also mandatory and not an option. Bikers have accumulated higher standards through experience and time. The alternative for road racing is riding on a closed course or a track, where riders find distinctive pleasure with a different environment, where there is no one but the biker and his machine on the road, races can be held, local or international events, gatherings, and most importantly riding could be educated. I want the users to experience the thrill of burning rubber, speeding shadows and thriving engines in a magnificent atmosphere that will reflect the high mobility and technology of superbikes.

As I stated earlier in the prospective motives for riding in the Lebanese society, I am not only interested in attracting bikers to use and take benefit of the project, but also to have a certain impact on the whole society as well, by spreading out this culture and celebrating it.

## Site Choice

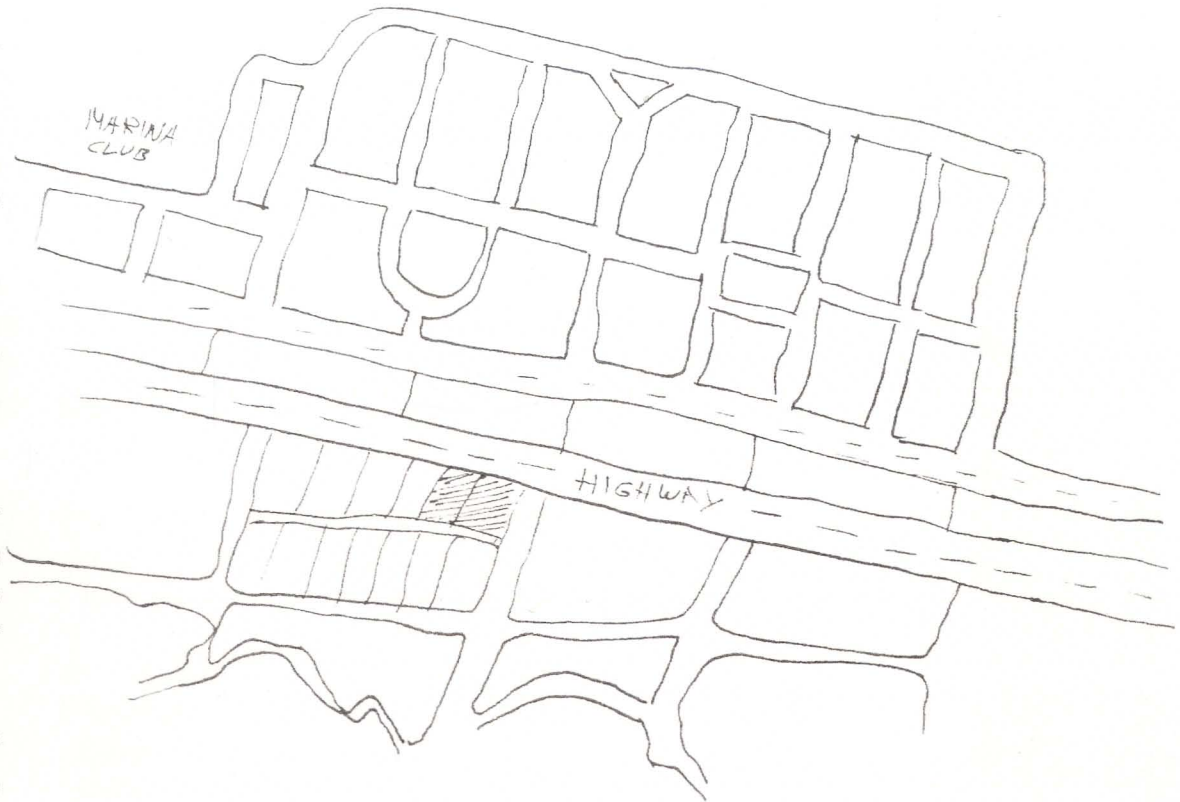
The favorite course for bikers is to head north, on the coast line to Byblos, Shekka and Tripoli, or to the mountains like Fakra and up to the Al Qorna Ah Sawda the highest mount in Lebanon.

Their gathering point has been on the highway between Antelias and Dbayeh because it is there where it can lead to any of their destinations and they are already outside the clutter of the congested city.

My site is right opposing the Dbayeh Marina, on the highway, and the empty road network of the frozen Marina project.

It has become a sport attraction center there because of the continuous events organized by ATCL as nautical activities and car drifting and racing that gather up in the Marina area.

When the construction process of the Marina Project starts, the whole project could be transported to other alternative sites that will accommodate the sport.



## Initial Design Approach

The main part of the thrill that will catch the attention of not only bikers but also ordinary people is the design of the project. Walking into my project should be as exciting as walking into a typical classroom is boring.

Ok, what makes a superbike a state of art, and the top model for any manufacturer?

It is the simplicity in design using the minimum requirements to make it function

It is the cutting-edge technology used in them

It is minimum weight, the fact that every piece is essential; the joining of those pieces together is an art work by itself

The design strategy will not try to imitate a superbike's design, instead it will try to extract the soul of this design from the roots and redefine it in order to translate it into architecture.

The intervention would be temporary for a maximum of 10 years where the Marina Project is expected to be re-launched, and then the facilities would

be transported to a new site that will host the sport for the next period of time assessed by bikers and organizers themselves. The structure will obey their will whenever they desire the move.

## Resemblance between architecture and superbikes

When we observe many contemporary buildings, we notice some shared elements between them and superbikes, the same flowing aerodynamicity, further more in similarity is in details and structure, joints, and the high technology implemented for optimum performance.

*Yes where is this?*

## Initial Precedent Examples



## Fiat Factory, Torino

What is it?

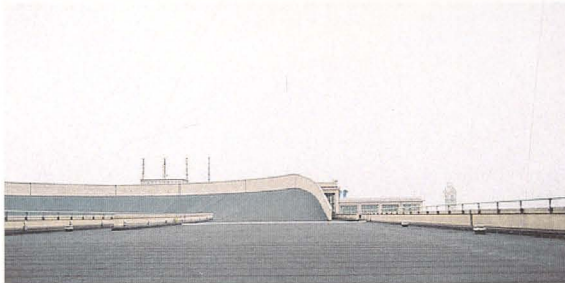
When it opened in 1923, Fiat's Lingotto Building was the largest car factory in the world at that time. It featured an entirely exceptional design where raw materials entered on the ground floor, and the cars were constructed on an assembly line which climbed rotationally through the building. Eventually, the finished cars emerged onto the roof - directly onto a rooftop test track! The roof was used as a race track for different kinds of racing sports. The factory closed in 1982, and has since become a multi-use complex featuring a theater, concert halls, and a Meridien hotel.

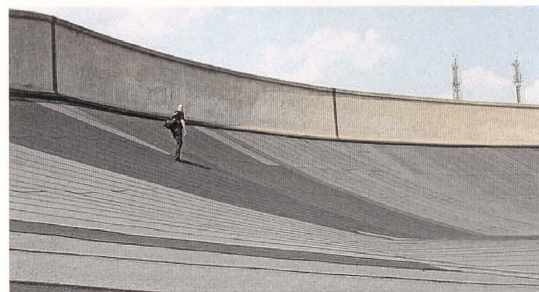
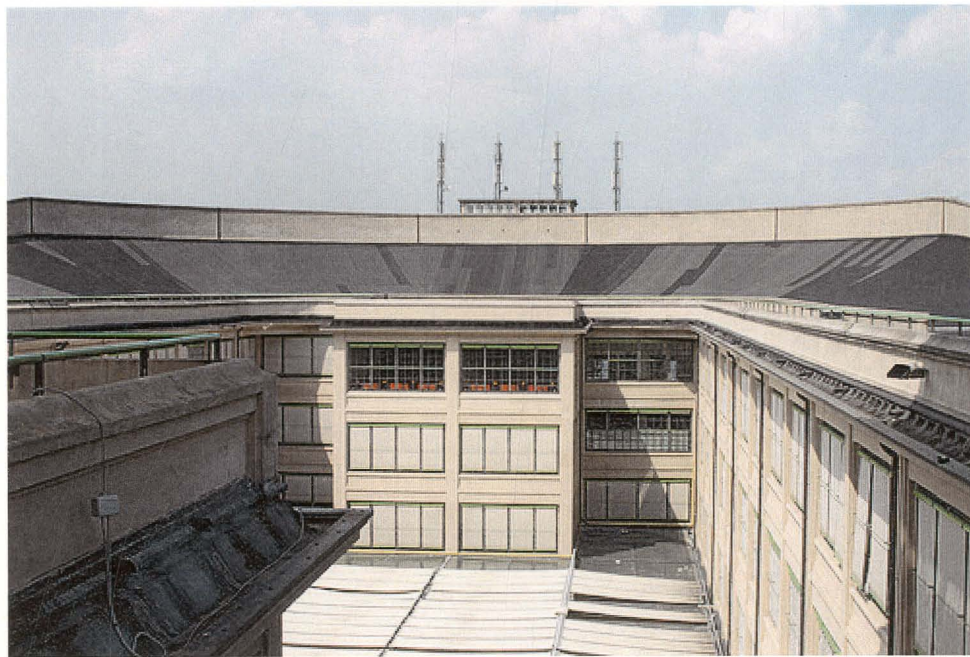
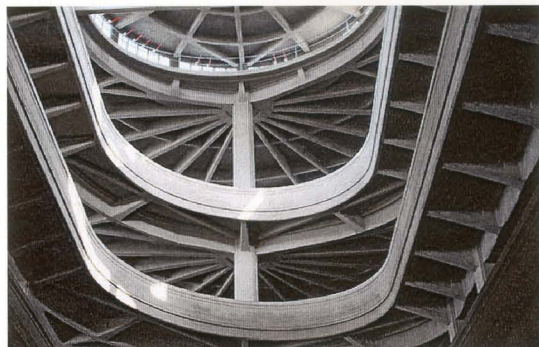
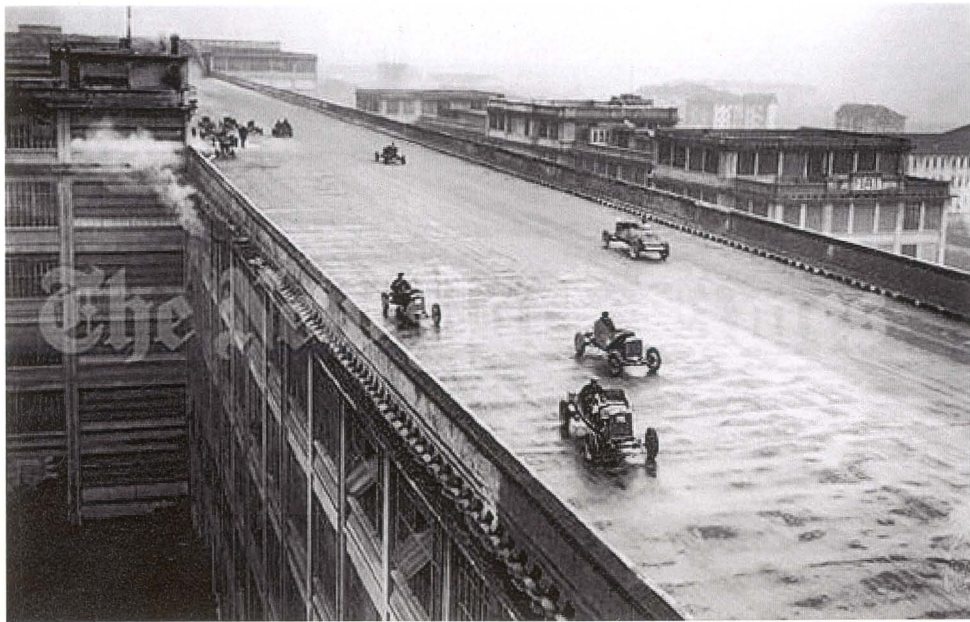
In 2008, Yamaha Racing Team released their top racing superbike YZR-M1 in this building on the roof in a ceremony of the superbike and the facility environment as well.



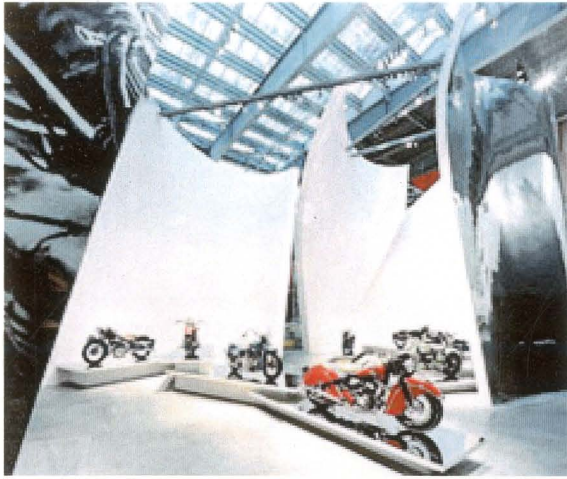
Why is it relevant?

The way the assembled cars in the factory are being rotated through the building to reach their full completeness at the roof test track, commemorate this industrial process and the outcome as well. This metaphor of reaching the top which is the roof in this case, means climbing till the reach of perfection.









## Vegas Exhibition

What is it?

Frank Gehry was assigned to design an installation under the name of "The Art of The Motorcycle"; it is an exhibition organized by the Guggenheim for the celebration of 100 years that have passed since the production of the first motorcycle.

Featuring curved polished stainless steel walls, towering chain-link curtains and glass floors, the new design responds to both the massive scale of the new Guggenheim Las Vegas and the materials and craftsmanship of the motorcycles themselves. The exhibition explores the motorcycle as both cultural icon and design achievement.

The exhibition chronicles the most compelling moments in motorcycle design and technology. The exhibition explores and celebrates the motorcycle as a quintessential symbol of the Modern age.

The Guggenheim Las Vegas' media wall further provides a cultural context for the motorcycles. The wall is divided in segments, each piece displaying different manifestations of the motorcycle as seen in moving images. The media wall will broadcast images

of motorcycles in documentaries, video segments, news and other television programs from around the world, and will feature images from films including "Duck Soup," "The Great Escape," "The Wild One" and "Easy Rider."

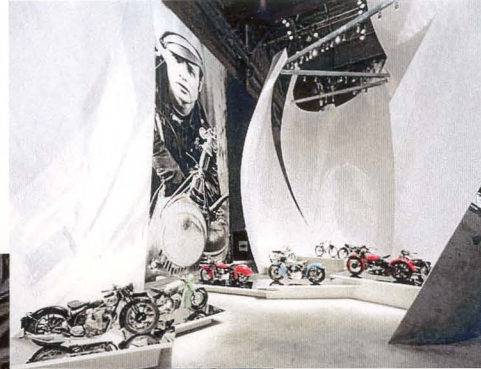
The wide appeal of themes of freedom and rebellion through motorcycles helped "The Art of the Motorcycle" set attendance records for the Guggenheim.

Why is it relevant?

As Thomas Krens, Director, Solomon R. Guggenheim Foundation described it: "the exhibition is adventurous in both form and function. As the motorcycle embodies so many of the themes of our age -- technology, speed, rebellion, transformation -- it serves as a perfect vehicle, if you will, for an exploration of the twentieth century."

The way Gehry succeeded in translating the soul, essence and philosophy of motorcycles into a spatial installation that reflects all this art is a masterpiece to observe and learn from.





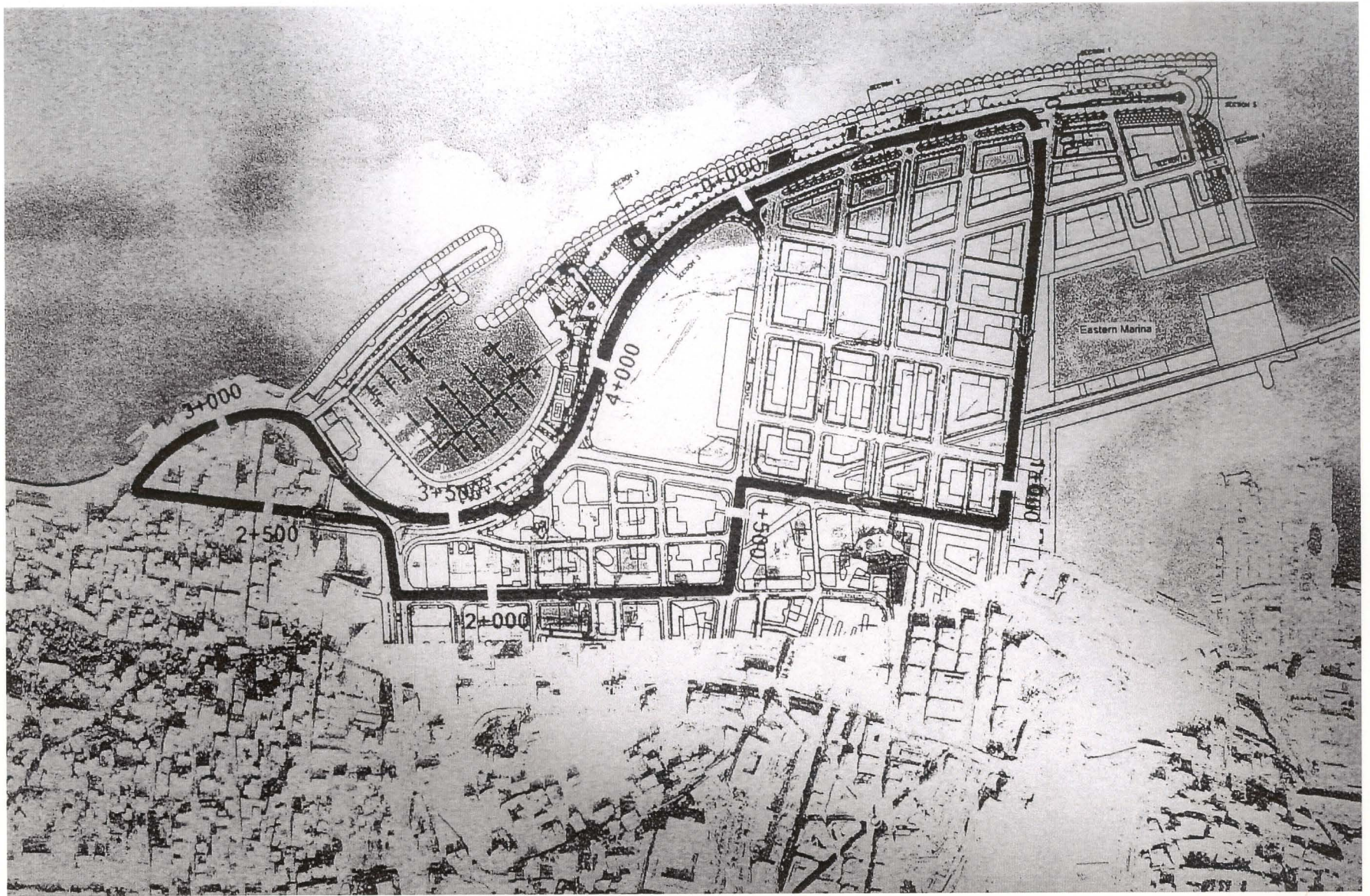
## Beirut Central District F1 Racetrack

What is it?

A proposal study of a formula 1 racetrack in BCD, which required the amendment of the Phoenicia interchange and the reclaimed master plan of the BCD. It identified the necessary modifications of the road layout and other infrastructure to accommodate the track, and it had to secure the approval of the FIA (Federation Internationale de l'Automobile) on the proposed design.

Why is it relevant?

It was a real case that would have happened in Lebanon, the fact that the track is on ordinary roads that need to be altered and geometrically modified to host the F1 race, everything was taken care of, geometry, drainage, safety equipment and fixtures, signing and marking, pavement, lighting, pits and mechanical plant, media and advertising facilities, clearances, timing, spectator stands, parking requirements, and finally temporary and permanent installations on the track.



The suggested course of the F1 track



## The Site



## The Site

About the site:

The site is located on the highway in Dbayeh area facing the Dbayeh marina, the frozen huge plan with some serious stuck legal issues has what is ideal for a track to be established with minimum effort and budget, and that can allow for different settings and configurations on the ground.



Bikers when going for a ride gather on the highway near the site, so they can reach one of their favorite destinations right from this point.

The same highway that we head south to reach the port and Beirut downtown, north to head for Jouniyeh and Byblos (Jbeil).



The superbikes phenomenon is becoming bigger and bigger day after day, with this huge increase in just 2 to 3 years, the need for a central place to embrace them all becomes inevitable. When bikers gather up and plan for a ride, they always need a place to gather, a place to be comfortable discussing their plans, check their bikes, have their service, feel their importance and uniqueness, feed their ego!

The most famous courses to ride across Lebanon are:

- Jbeil ride
- Tripoli ride
- Fakra ride
- Al Qornet Sawda ride
- Syria-Turkey ride

- Regional uses and attractions: Marina itself, Emile Lahoud conference center, retail shops and restaurants on the sides, office buildings as well, Le Royal Hotel to the north, Nahr el Kalb tunnel north.

- Drivers education offices already there: most of the regional offices take advantage of the inside area of the Marina to teach driving skills there, it is an empty place and people would only hit the side of the road in worst case scenario.

- ATCL boat racing and maritime activities there, car racing gatherings: ATCL organizes maritime activities and races from the Marina of Dbayeh, it is known for nautical sport with regular competition held there.

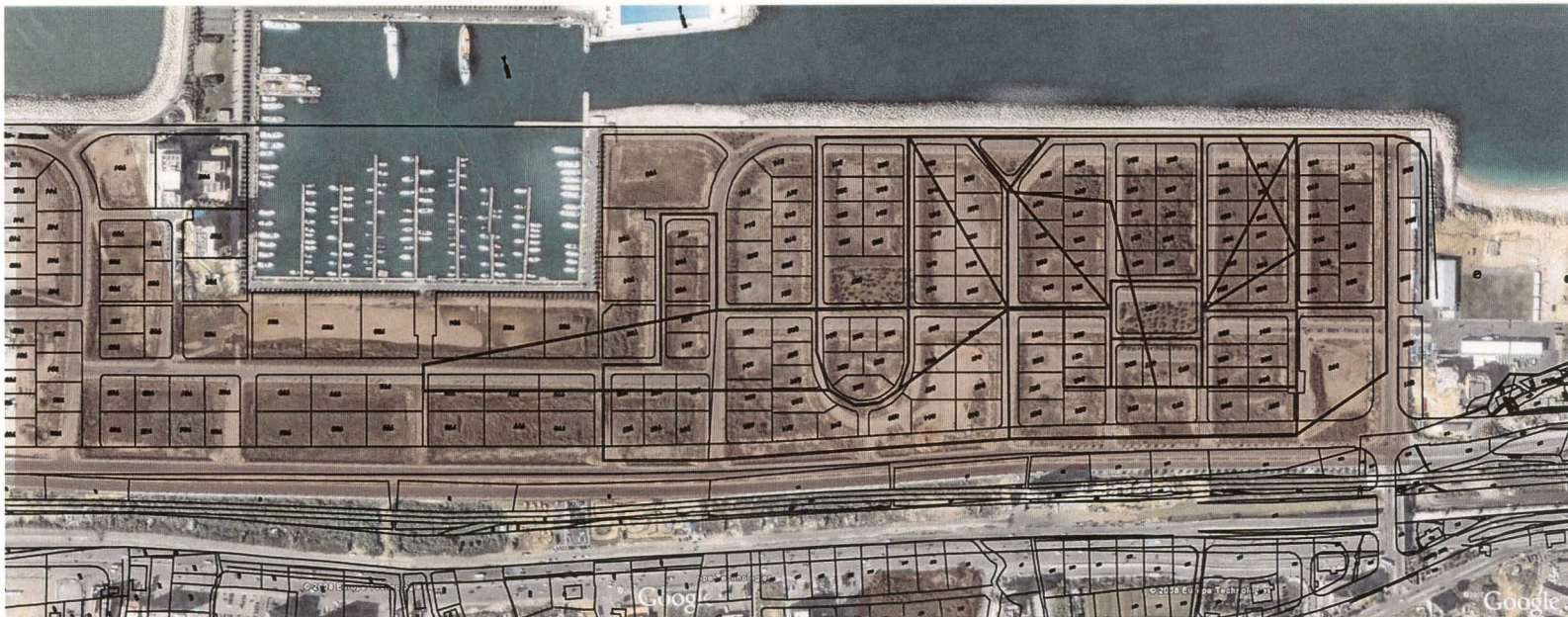
Also car drivers that pimp their cars and go for cruises together gather up

at the edge of the closed section of the internal Marina road network.

- Potential of this site: Marina sport center, the whole district is already a known spot for sport activities and assemblies, this will just be joined by a new heavy-weight champion.



My superbike on the Marina road network, racetrack-to-be



The two opposing sites are marked in light red, the huge area is for street use





The courses that bikers take on their journeys are marked in red

## Bikers Courses

When going for a ride, bikers gather on the highway near the site, so they can reach one of their favorite destinations right from this point.

The same highway that we head south to reach the port and Beirut downtown, north to head for Jouniyeh and Byblos (Jbeil).

The most famous courses to ride across Lebanon are:

- Jbeil ride
- Tripoli ride
- Fakra ride
- Al Qornet Sawda ride
- Syria-Turkey ride



# The Track

The FIM (Federation Internationale de Motocyclisme) has its standards for a racetrack as for dimensions, corners, clearances, side barriers, shock absorbers and track installations.

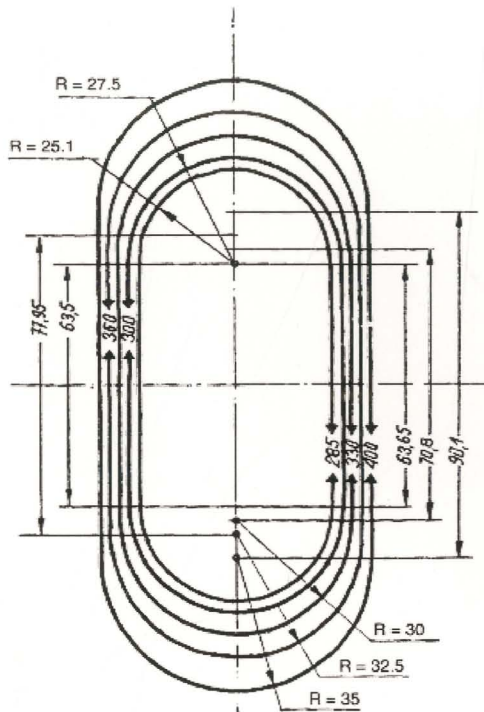
Art. 079.3.1

Art. 079.3.1

Art. 079.4.7

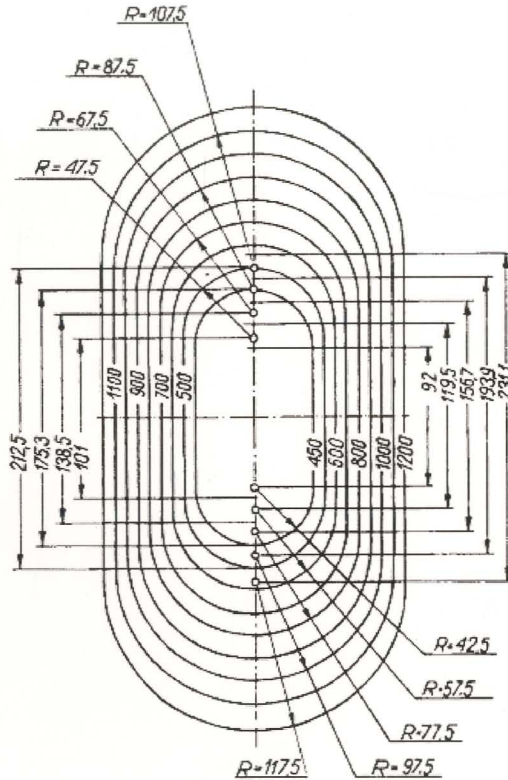
## TRACK MEASUREMENTS - SPEEDWAY

(Radius of bends to length of straights - metres)  
Examples but not compulsory

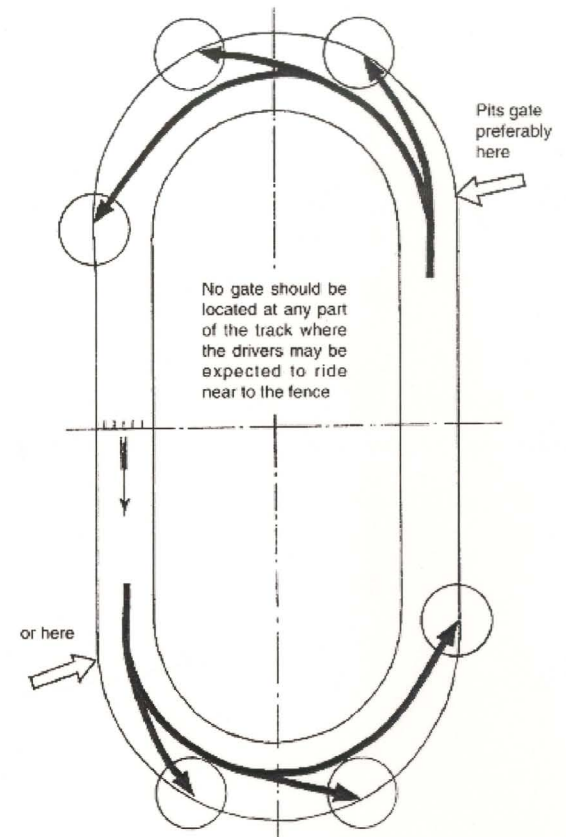


## TRACK MEASUREMENTS - LONGTRACKS AND GRASSTRACKS

(Radius of bends to length of straights - metres)  
Examples but not compulsory

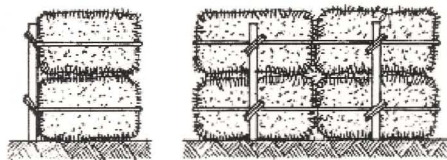
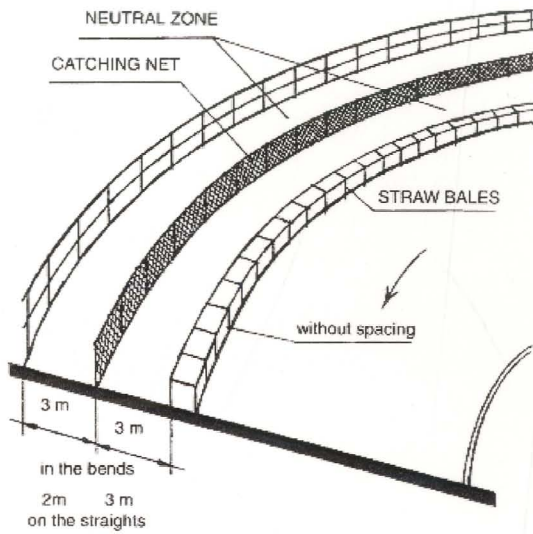


## DANGEROUS PARTS OF THE FENCE



Art. 079

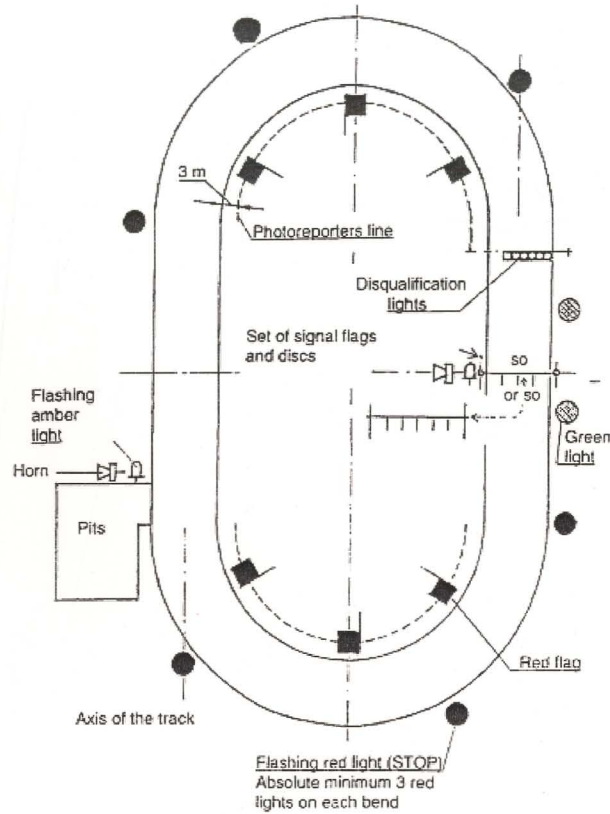
TEMPORARY FENCE OF STRAW BALES



STRAW BALES MUST BE ATTACHED TO EACH OTHER

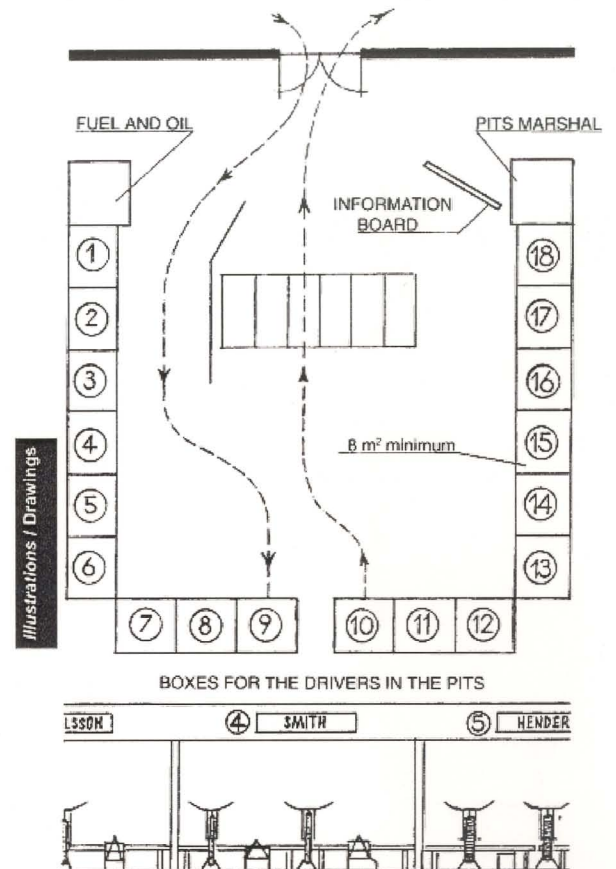
Art. 079.7.4  
Art. 079.7.5

TRACK SIGNALS  
(SPEEDWAY, ICE AND LONG TRACKS)



Art. 07

THE PITS



Illustrations / Drawings







## Conceptual Design Investigation



## Intro

To realize the potential of the project and render it feasible, I was opting for a form of architecture that can respond to change (in place, size, need, or even cost) and that is sensitive to differing needs in different environments that the project might be subject to in the future.

It is about the exploration for viable alternatives to meet the bikers' requirements for shelter and comfort (use of space) that could lead to not only more appropriate modes of using the space but getting to new sensitive ways of defining this particular human condition and the space which they engage in.

Time and events are profound factors in shaping how well architecture is perceived and how it performs. Though architecture is an enduring aspect of human creativity, this factor should not result in a restrictive regime in its design. Pierluigi Nicolin comments, quoted by Robert Kronenburg in *Flexible*: "in architecture the notion of time inevitably calls to mind the role of duration, usually assigned to monuments. Because of the aspirations to a condition of imperishability, architecture continues, in

spite of everything, to seek... the utopia of a timeless dimension. As a result, it seems to me that architects end up missing the opportunity to creatively include the temporal dimension of the event in architecture".

The built environment is commonly perceived as a quite static entity, change occurring slowly over long periods of time. In the culture of motorcycles, there is no deep significance of the place as a fixed element, bikers tend to travel and go through different varieties of places in a strong motion retaining little memory of these places.

## The Sense of Identity and the Sense of Place

The way I am envisioning architecture in this project could be deemed radical, the intervention is considered separate from the plot it occupies and is a facility rather than a property. Such architectural intervention may require the owner to relinquish the idea of architecture that is inextricably linked with property and ownership of land.

The sense of identity associated with a particular place is intimately linked with the human consciousness. Martin Heidegger, the German philosopher, states in "Being and Time" that: "place" places man in such a way that it reveals the external bonds of his existence and at the same time the depths of his freedom and his reality. In the creative field, the usual assumption of how this sense of place is realized is by the establishment of some permanent artifact that, over periods of time, acquires a "history" of activities and events associated with its location that lend it significance. It is also assumed that this possession of "history" is somehow accelerated by the adoption of an identifiable architectural form; an apparent example is neoclassical architecture, which already has a place

in human understanding. In fact, such achievement of a sense of place is artificial, far from being original.

The inarguable presence of a physical object is essential in human understanding of that object, but not less than the personal subjective feelings it may create, although these may be more difficult to quantify. Architecturally speaking, this means that the human relationship with places and buildings is identified by a complex matrix of observations that stem from the psyche as much as the conscious mind. Back to Heidegger, who also states in "Being and Time" that: 'a person by definition, is one who is "placed", one who is there', so there is this craving for an anchored existence for every human being.

The significance of the realization that architectural 'sense of place' is not related to a specific geographical location is that enables designers to contemplate new criteria when devising architectural forms.

## Portability, Transformability, and Free Movement

Till the last years, the perception of a portable building has usually been a low-quality appliance, low-cost and sometimes disposable. However, temporary in siting does not automatically signify temporary in existence and it is their ability to move that makes such installations somehow liberated of the strong affiliation of a certain site.

The fundamental nature of movement is freedom, and the technological challenges that accompany its exploration could effectively lead away from the stiff static approach found in much conventional building design. As with motorcycles' ride, arrival and departure are integral to their unique character, as will be their qualities of power, speed, intelligence, beauty, attraction, vitality and excitement conveyed to the deployed installations, the environments such installations or structures create therefore confiscate an exceptional quality correlated with the event and memory that motionless static architecture can never match.

Those installations constitute a portable, demountable and

relocatable architecture – underlying the philosophical, cultural and social issues that have shaped their creations.

Truly transformable architecture must go far beyond the minimal changes allowed by moving chairs or painting the walls. It must enable a dramatic alteration in the character of the whole architectural environment. A transformable building should change shape, volume, form or appearance by the physical alteration of structure, skin or internal surface, enabling a significant alteration in the way it is used or perceived. This is architecture that opens, closes, expands or contracts. Transformation of this kind is not an easy characteristic to introduce into building. Kinetic, constructional elements that are capable of relocating on a regular basis require far greater design and manufacturing effort. Problems occur in three main areas: movement mechanisms, joining of internal and external partitions, and operation of service under different conditions. Turning the building kinetic at the touch of a button, it is magical and like giving it the quality of being alive.

## Defining What Mobile Adds

A mobile "building" in its straightforward terms is a building that moves - portable is so similar in meaning, but some argue that the term portable means probable easier transportability, however, when I mention either one of them, I mean the same while envisioning my project - mobile architecture implies that it does have much more; it already encloses all the potential that permanent architecture has to create, meaningful, identifiable, recognizable environments that enable users to come to terms with their physical existence and the relationships based on distinction that they have encompassed between the man-made and the natural world.

## Human Perception of Portable

In the human understanding of the nature of object and place, portable buildings also have an exceptional place as they can be artifacts that negotiate cultural and symbolic boundaries. For example, It is so common for people that are so bound to their land, to admire the elegance and beauty of a sailing ship; its main purpose and function are manifested in its shape and form, and further more

in our pre-conception about it, yet the structural principles of pneumatics, tension, and compressive systems are part of architectural design as well as the fact that this vehicle also includes the function of a lodging which adds to the fiction and excitement created in the mind and heart of admirer, the visual forms of transport: ships, trains, cars, motorcycles, airplanes, and even spaceships, have all been exploited by architects to add a specific image to their designed building, even though the intrinsic significance for a static structure should eventually be sterile. Truly mobile buildings hold the essence of this romance in their purpose; therefore they have this extra potential to make use of an additional creative dimension to that of the permanent structure.

## Nomadic and Conquerors Examples

. . . location or position is neither a necessary nor a sufficient condition of place, even if it is a very common condition. This is of considerable importance for it demonstrates that mobility or nomadism does not preclude an attachment to a place.

Edward Relph, *Place and Placelessness*, 1976



Small nomadic groups camp together. They choose the camping place on a prairie or desert depending on the natural determinants, such as access to water (camps close to oases, well-centers or rivers), protection against the desert winds (camps in the topographical niches) and protection from solar radiation (camps in the shade of bushes or trees or camps on high ground to catch the breeze and observe the surrounding as well for better feel of security). Though the concentration of tents is variable, depending on the number of well-centers, the pattern of each camping cluster is repeated from camp to camp throughout the nomads' movement. This pattern reflects the hierarchical order and social relationship within

a group. The tents are arranged linearly, with fronts facing east. Each tent relates to the other one according to family and social structure.

When comparing it with the behavior of the bikers when travelling long distances journeys, the prime principle of Nomadic wandering, is the freedom of passing through space and staying in any place at all. For bikers, the principle is so close regarding the freedom of exploration; however their stay is for hours or a day max rather than longer periods.

The nature of nomadic and migratory peoples' relationship with the lands they dwell in and pass through, could also be observed in order to develop our understanding of one of the crucial factors in creating new environments and eventually understanding why bikers seek this infinity in their riding journeys: the formation of a sense of place. These people have an intimate understanding of their place in the landscape which expands to the relationships between their houses and even to the layout of the interior spaces. Sophisticated and symbolic patterns have been developed which help in

this spatial understanding that seems to be a vital factor in human existence.

The conquerors' example, though the purpose and motives of expansion are different, conquests have often hidden tragic dimensions expressed in the history and spatial manifestation of losers' land. The comparison between the motives of conquerors and bikers is so powerful regarding similarities, except that in the first there is rush of blood, the second has rush of adrenaline, with the same feeling of the conquest of space.

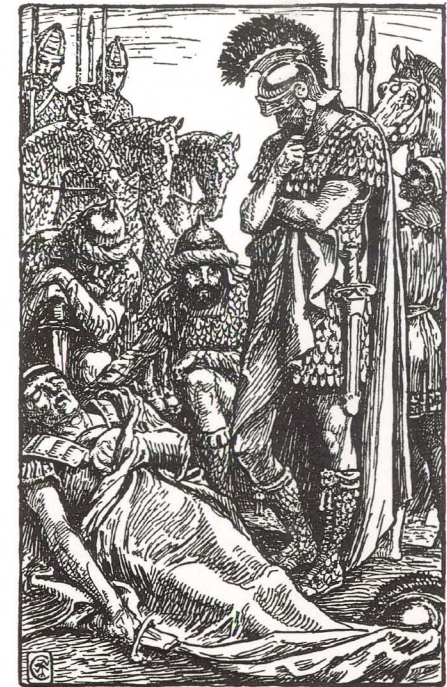
The conquerors use the space dimension to supply the fulfillment of the "promised land", information and profits. "Promised land" announces a future awaited happiness, therefore it results in an infinite seek out for it. It seems to be a symptom of being unsatisfied by existing circumstances, caused by a lack of possibilities for self-realization, leading to a loss of hope. Dreams of the new land, new beginnings or new chances generate conquerors' expeditions. Information hunger and curiosity are also causes for making journeys to distant places.

Being there, seeing, touching,

experiencing or exploring – is always an intrusion into a distant land. There is no reason to think that "there", contrasted with "here" as possessive confirmation, belongs to anybody. "Being there" means taking possession of a distant land by egocentric force of intellect or wish. Journeys of exploration are therefore conquests of space. I see it crystal clear in motorcycles' expeditions!

Real or expected profit is the most common motive force for conquering a new territory. Even if the expedition is connected with the risk of loss of health or life, a man usually takes such risk to win a fortune. However, this fortune does not necessarily have to be materialistic, one essential aspect of it is feeding the ego and the confidence feeling of the capability of accomplishing this task.

In opposition to nomads' wandering as a changing of place without a final ultimate destination, the conquerors' way of crossing space is directed to a certain aim. It means that every aspect of the expedition is planned according to its purpose with the choice of the goal taken on certain criteria depending on their broader long-term strategies.



HANNIBAL & MARCELLUS



## Portable Architecture Erection and Sensation

Portable architecture in project should not be perceived as some unique hybrid manifestation, partway between transport and building design. Although the aim of the project here is to translate the soul of superbikes into an experimentation of portable architecture that celebrates this phenomenon, it is ultimately still a feature of mainstream broader-scope architectural design. This can be justified with a number of reasons, some practical and others more philosophical. All fine portable architecture sets out to create a particular sense of place the same way a permanent building does. The fact that its physical existence on a specific site may be subject to dramatic erection and dismantling procedures and be relatively narrow in time, also adds a level of exciting sensation associated with event. This phenomenon may be measured up to the accelerated motion of a fast-forwarded movie that offers a fascinating observation that condenses a process that usually takes much longer for it to be well accomplished. No matter how long the building is present on a particular site, for that period the portable buildings'

with the possibility of offering more, as a similar permanent facility – and that is the main advantage - to provide shelter and foster the activities that are accommodated. Ways achieving this should not be compromised by the facility's portability and the users, not only bikers, should not have to undergo lower standards simply because the building is movable.

## Composition and Methods

Because of the specific conditions of their erection, portable buildings are generally composed of relatively light weight components, including light military installations other than the heavy bridge. This is an attribute that can be traced from vernacular and traditional examples through to the latest computer-aided designs that are made in industrial process factories. In general, materials are expressed in their construction to camouflage them is to add avoidable complexity and some additional weight. This applies as well to their structural composition which allows a clear recognition of the difference between supporting elements and cladding elements. Well-designed portable buildings displays in my opinion a clarity of architectural expressions that makes them exemplars of functional form generations, and they therefore occupy a place at the forefront of the architectural design development. The structural language that is creating the form in such cases must be evident. This emphasizes the reason why portable architecture is part of the mainstream mentioned earlier, the methods of construction and techniques of production it pioneers are appropriate to all kinds of building.

The use of light-weight pre-fabricated componentized construction can reduce site work, building time, and transportation costs. New building methods initially designed for demountable (but not disposable) buildings have been transferred to permanent constructional operations – components developed for a primary market in permanent buildings are now being used in portable structures. It is therefore clear that the study of the design, construction, and operation of this particular architectural field has potential benefits in all related fields later on in the design development, more intrinsically into my investigation interest, and the manifestation of this exploration into my design.



## Machinery in Ephemeral Building and Idea of Movement

Deployable military bridges are a good example of this type, they are held on vehicles modified for this purpose, like a tank with no turret, instead of this artillery turret it carries a heavy deployable steel bridge that can be erected and projected in minutes in the intended site, above rivers or deep craters using a powerful hydraulic arm. Then after use, the same deployed bridge elements connected with some weighty joints, are folded again and mounted on the back of the tank for it to move elsewhere for looking for a new application in a new battlefield.

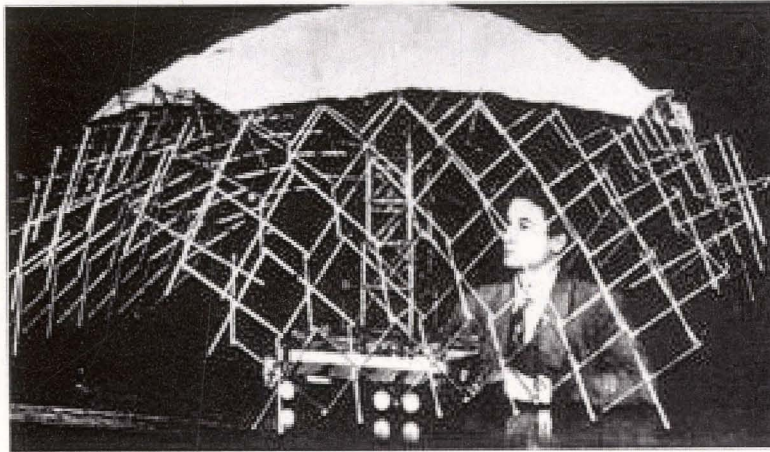
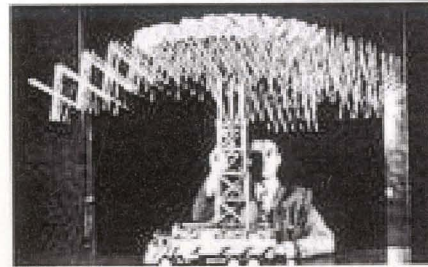
Factors that have driven the design of military bridges have been the speed of erection coupled with rugged reliability. The thing is that the vehicles used were ordinary military ones conveyed to this specific logistic use, so can this occur in motorcycles where they become the driving force of movement?

However, the idea of ephemeral building is a powerful one in experimental architecture. The figure of machinery particularly when associated with motion has essential nuances of power and speed. The inborn tendency for movement is associated with freedom, and creative freedom is at the heart of experimentation. In several ways, experimentation in architecture also means a shift or rejection of a tradition, in particular as to have the contrast, the static conventional building methods that could arguably be the cause of stiff, inflexible building designs that constitute the norm. One of the early attempts was the movement of the Archigram architects that negated the building as a static, largely unchanging object, instead they theoretically experimented ways in which they could alter this norm.

## **Precedents Analysis**

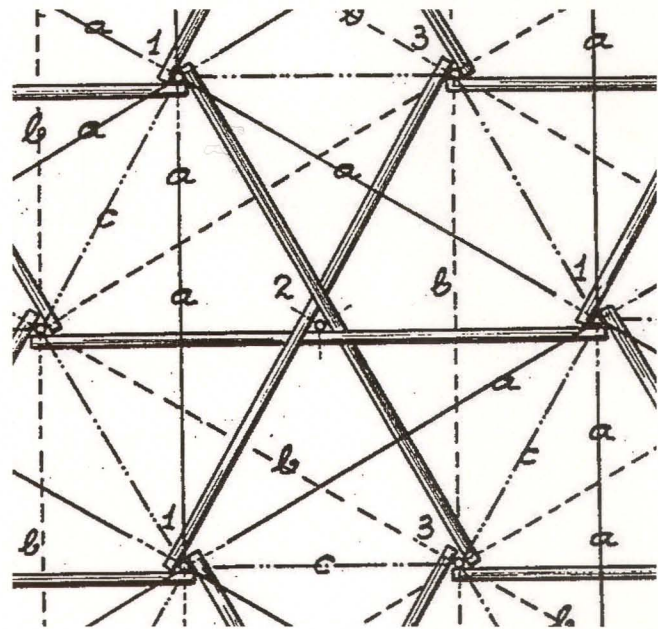
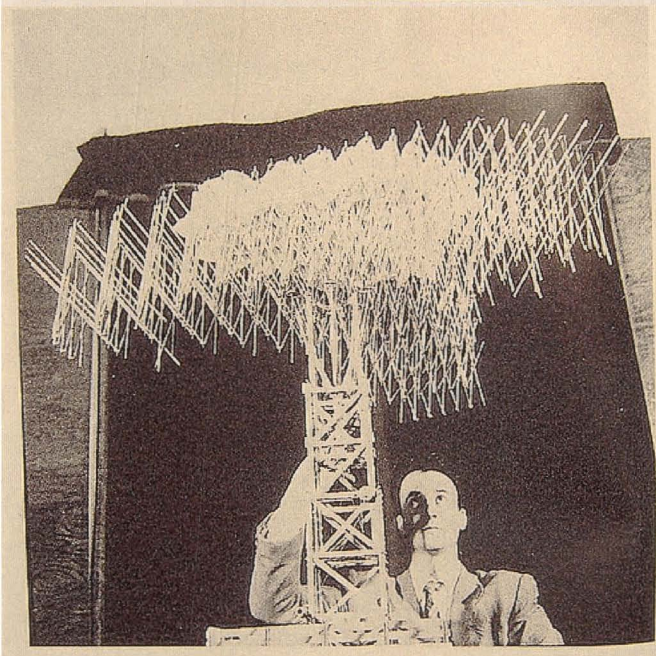
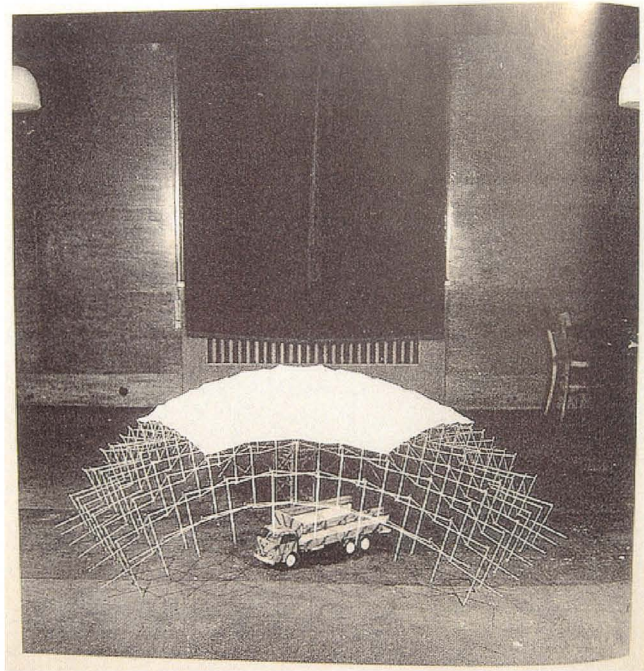
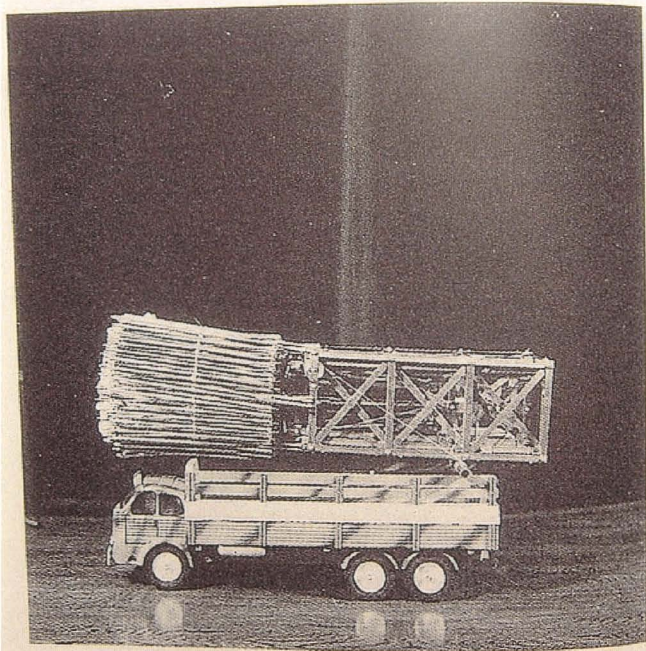
Precedent studies and analysis have an important role to play in the creation of a forward-looking enlightened architecture, in that they provide an establishment of data and knowledge for existing work and investigation, and allow successes and failures to be evaluated with this offered advantage of retrospection.

## Mobile Theater by Emilio Perez Pinero



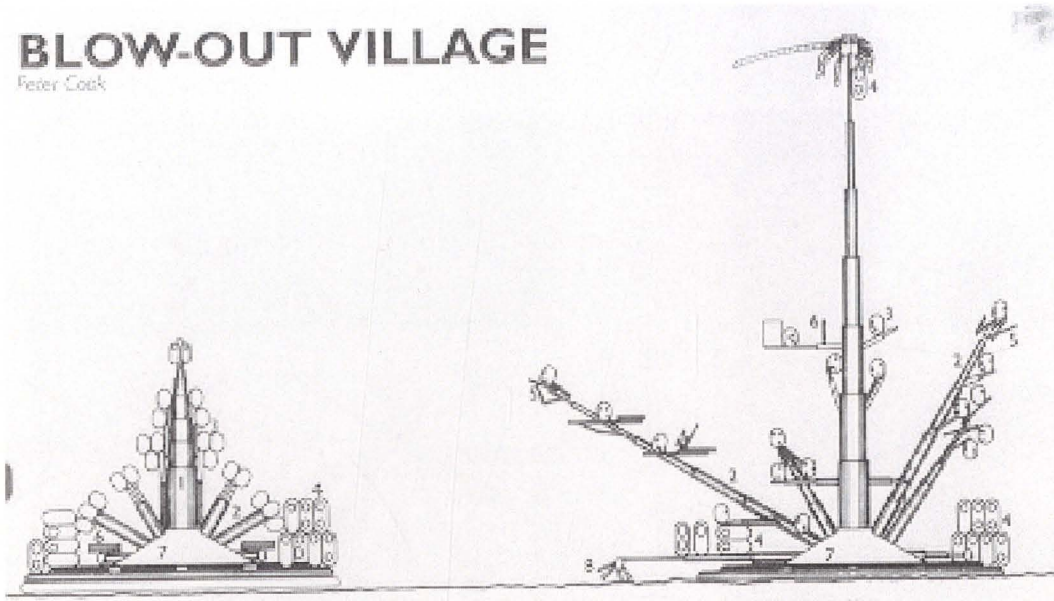
This transportable theater was designed by Pinero who was well known for designing deployable structures in the form of reticulated foldable space grids, the theater is carried on a truck modified to embrace the design, the folding system is consisted of a unit that contains two elements connected close to their centers to produce a scissor mechanism, so united to form a truss-like web.

What interests me the most is how the whole structure can be folded in the back of the truck and travels to its destination, very simple mechanism that needs no machine power; the deployment is a smooth process of this complex looking yet simple truss. The scheme is so inspiring, in my case, the motorcycles and racing life is all about packing and journeying, the aspects of portability and transportability concern the most, and to a lesser degree, the used mechanism.



# BLOW-OUT VILLAGE

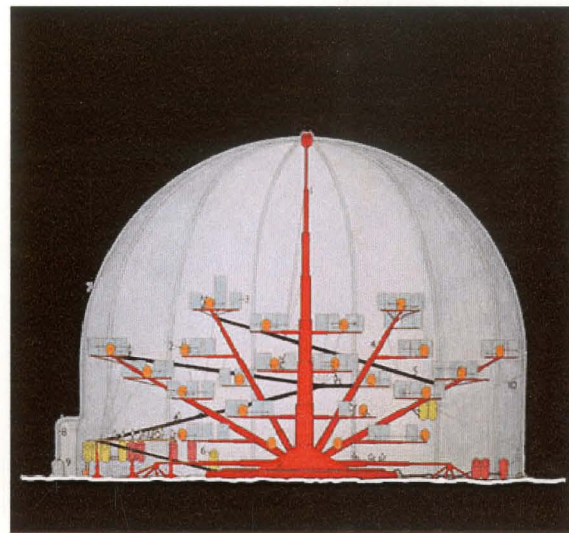
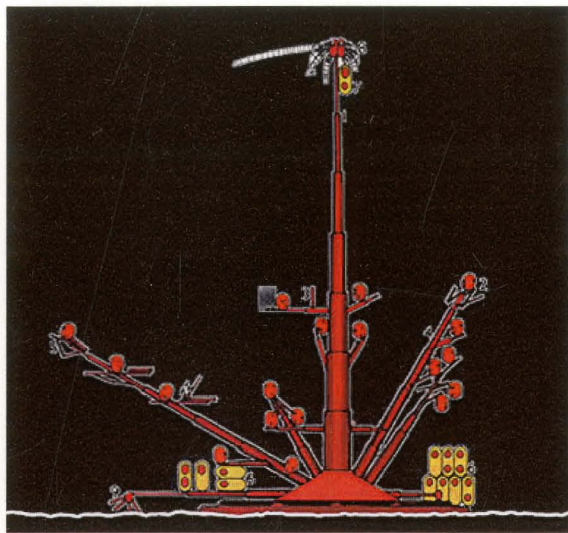
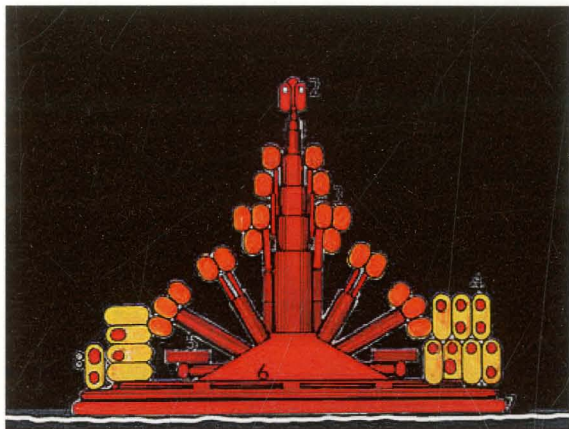
Peter Cook



## Blow-out Village by Archigram

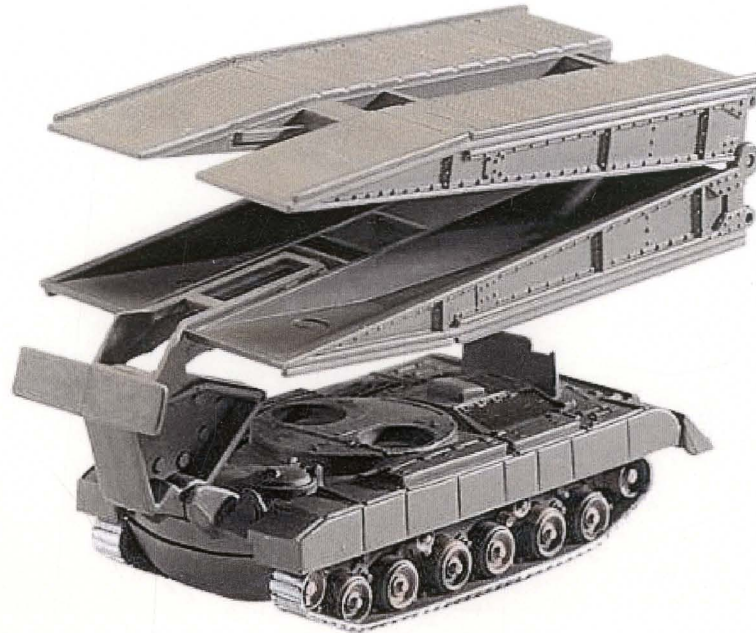
Part of the futuristic visions of the Archigram group, suggests how an aggregation of modernist objects such as World's Fair Pavilions might be arranged three-dimensionally within a larger enclosed space. The dome recalls the interior of the US Pavilion and the 1967 Montreal Expo by Buckminster Fuller, which had exhibits similarly floating on disengaged planes hovering in the great space.

The utopian vision inspired me design wise, how can all this development pop out from the main feeding center, and then create an entourage around it, making it a self-sufficient entity, the further enhancement that I imagine is that all what popped out can be folded again, and then the whole structure to be transported into another site when needed.



## AVLB (Armored Vehicle Launched Bridge)

The AVLB is one of the most important elements of military machinery in the engineering brigade of any army. This bridge layer is mainly a tank that pulls oversized walk boards jointed together in a scissor form. The hydraulic bridge launcher is mounted as an integral part of the chassis. When in place, the bridge will support tracked and wheeled vehicles with military load.



One good feature is that the bridge can be retrieved from either end so that after last vehicle crosses it can fold it up and continue.

The idea can be developed with lighter weight materials and more elements to produce a more complex yet simple-functioning unit capable of deploying and folding the load which is none but one component of the project.





## Elements of a Deployable Structure

Many designers have developed systems for use in hostile environments on earth, such as Richard Horden's design of the Ski-Haus, a portable shelter deployed by helicopter within the Alps and capable of subsequent easy movement.

The next two paragraphs are quoted from Robert Kronenburg's Transportable Environments book; he classifies the categories of portable structure according to the following:

The type of structure and constructional system influences the building form. In portable architecture all systems can be categorized under either 'deployed' or 'prefabricated' structures.

'Deployment' concerns not the pre-manufacture of elements but more or less pre-assembly of an entire structure in a factory and the unfurling or deploying the structure on site. As such the building form tends towards a finite element as a complete form or a series of add-on elements. Deployable structures can be divided into 6 main elements:

1- Flat packed: these can be the pre-hinged type such as the Terrapin system or a kit form.

2- Pantograph: sophisticated hinged systems which use a scissors mechanism or pantograph to produce a shell when unfurled from a lorry. Examples would include: 1963 Emilio Perez Pinero competition to design a mobile theater, 1996 Chuck Hoberman folding structure, Mario Botta tent for 700th anniversary of the Swiss conference.

3- Membrane systems: these would include the MOMI tent by Future Systems, Cardiff Bay Visitors Center and recent developments on military tents by Dundee University.

4- Pneumatics.

5- Tensegrity structures: Buckminster Fuller, Californian Schools Systems lifted into place by helicopter.

6- Pods or capsules: Monocoque ski-lodges, Hull system housing, Terrapin volumetric unit.

There is no doubt that prefabrication and portable architecture are inextricably linked.

(Quotation ended)

Kronenburg also defined the different elements according to their aim and function:

Transformable elements: spaces that are nominally dedicated to a specific function, thereby fulfilling the present brief for the building, are also designed to support and even encourage other methods of use.

Adaptable spaces: the building makes use of space in a multi-functional way. All the spaces need breakout space in between for optimum free circulation. Merge the two spaces with this breakout to form a continuous, fluid, flowing volume that expresses no particular function, but instead suggests many.

Movable elements: all the elements can be relocated anywhere within the provided surface of the building, entry routes and areas of privacy realigned.



## The Program

The program is so straightforward, due to the transportable nature of the project and the sharpness of the design concept. No room for just filling up space.

## The "Technic"

- Simulation rooms 3 x 35sqm
- Seminar rooms 2 x 25sqm
- Garage 1 x 250sqm
- Technical rooms 2 x 25sqm
- Café 1 x 150sqm
- Dormitories 8 x 25sqm

## The Multipurpose Track

- Pits complex 1 x 380sqm
- Stands 4 x 400sqm
- CCTV Technical room 1 x 95sqm
- Media center 1 x 145sqm
- Safety control room 1 x 35sqm
- Deployable maintenance hangar  
1 x 300sqm
- Small medical clinic 1 x 80sqm

## Professional Service Station

- Tuning-up center 1 x 50sqm
- Paint job 1 x 65sqm
- Performance consultation 1 x 25sqm
- Washing/polishing service 1 x 75sqm

## Deployable Units

## **The "Technic"**

The "Technic" center is the technical part of the project, with latest technology of simulation rooms that simulate the real riding before going to the track for enhancing the biker's level and rendering them rougher on the road with better skills. It is the place where people learn and experiment in the garage first with static objects; and since bikers love and seek freedom, open spaces strategy will be adopted in design with flowing relationships between different spaces. A compact medical clinic will provide medical care and first aid in case of emergencies. The café is one the most key spaces a biker want, nothing more beautiful than sitting in a café after a long riding journey or even for gathering before departing.

## **The Multipurpose Track**

The track is the experimental education and entertainment for bikers of different levels, it will follow the international standards for road racing of the FIM (Federation Internationale de Motocyclisme) and will have latest technical details such as the air flow fence that is designed to minimize

impact of accidents and slides on the body and absorbing the shocks even on short distances. The track will have pits complex for storing the bikes and applying minor amendments, also the maintenance hangar will have everything necessary for maintaining the quality of the road and track overall. The CCTV room will have the control over the cameras arrange over the track, it is connected to the media center where could be live coverage of events, the safety control room keeps monitoring of the safety and any emergency case on the track. All the mentioned spaces are compact in size, structurally simple, light-weight and easily transportable.

## **Professional Service Station**

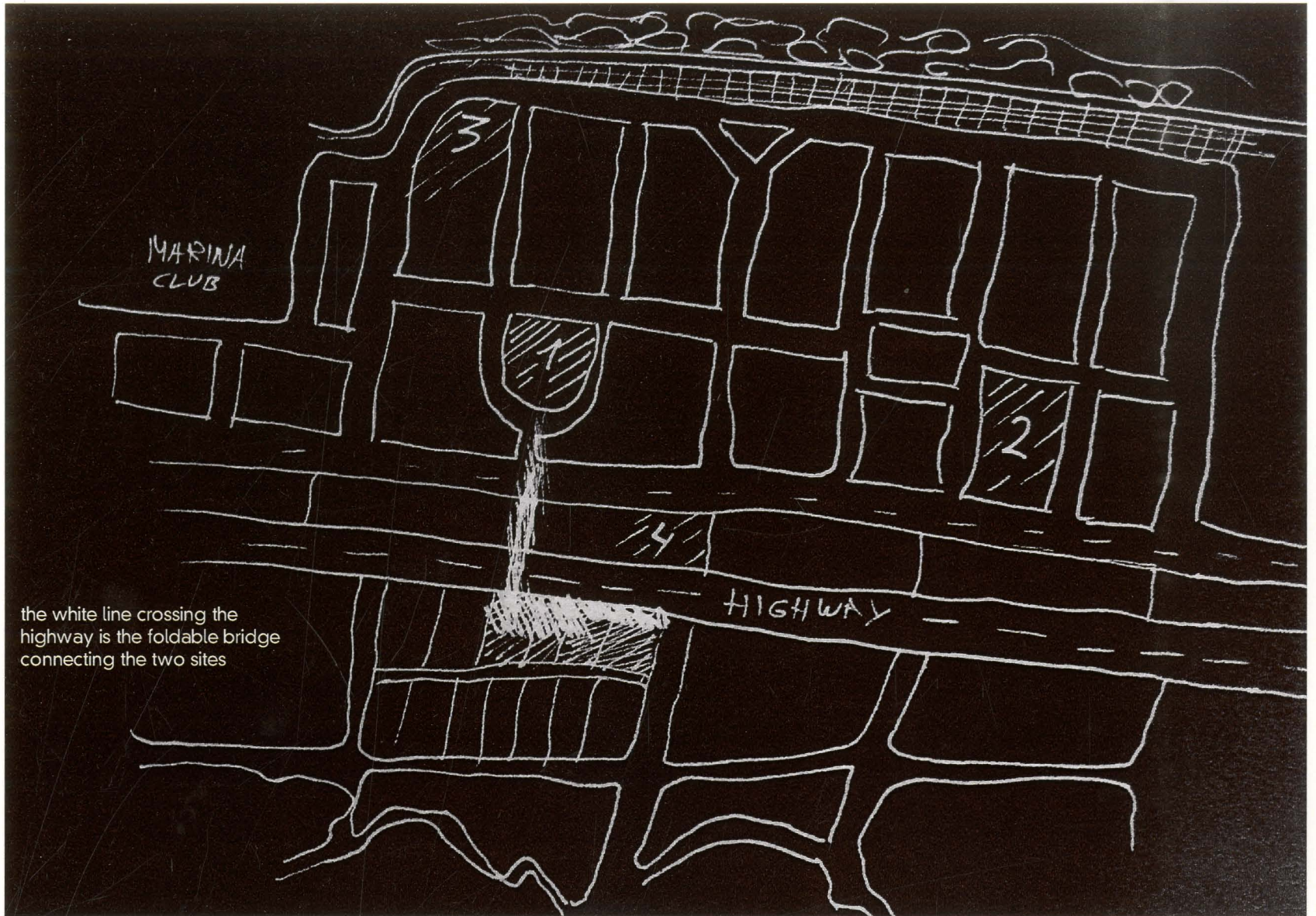
Since most bikers treat their bikes like their babies, it is an utmost obligation that a professional care center be provided, where bikes could be maintained up to the best standards, tuned-up to performance chosen by the owner, custom paint jobs could be done as well, with wash and polish services also available to boost the attraction.

## **Deployable Units**

These units will be transportable, folded up and moved wherever there is an event taking place in a far place, they can go there and when they are done, pack up and go back home.

# Preliminary Design

Sketches and Models



the white line crossing the highway is the foldable bridge connecting the two sites

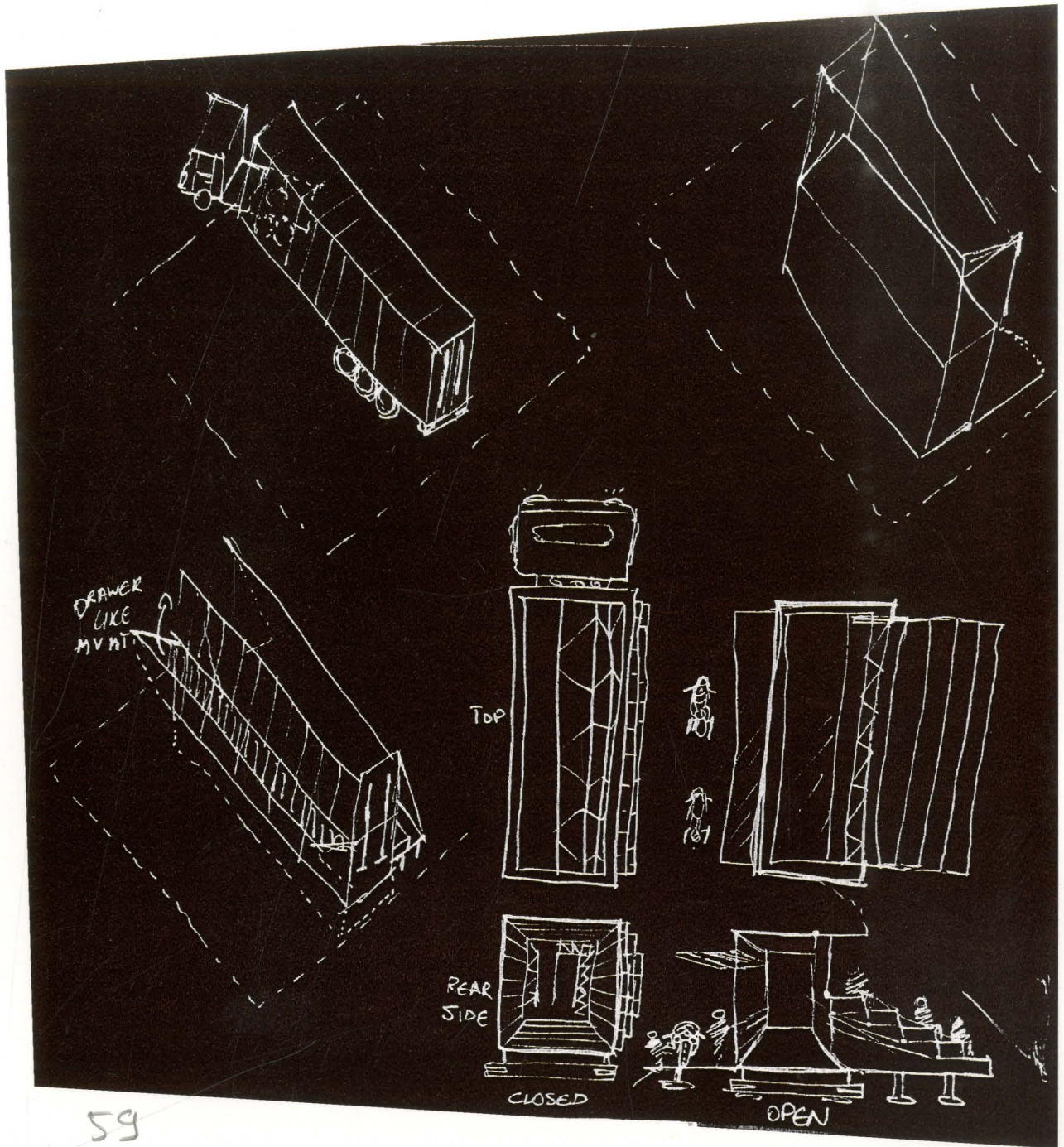
Since the intervention is eventually temporary (in years), it will displace escaping the construction sites when the Marina Project is launched. meaning that lets say that my intervention is in zone 1, and construction at this zone starts, the intervention will automatically shift to zone 2, and so on if zone 2 gets the OK as well. Untill one day the whole facility will be transported to a new site.

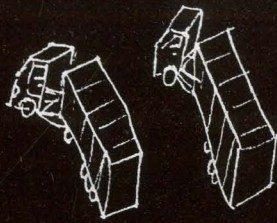




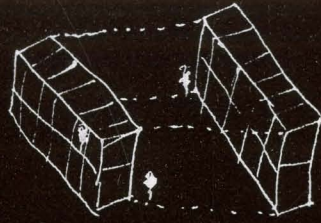
sketch of a bike crossing the bridge  
above the highway

Transportable stands carried on a truck on the form of a container then deployed to form a spectators stage that can be deployed anywhere with enough clearance, then folded up and packed into the truck again.

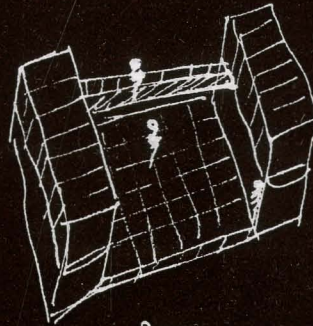
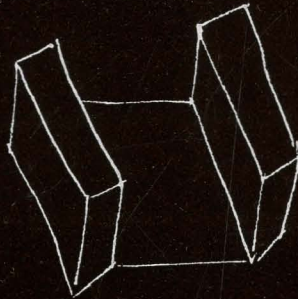




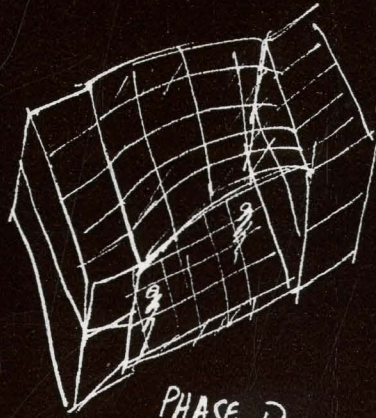
PHASE A



PHASE B

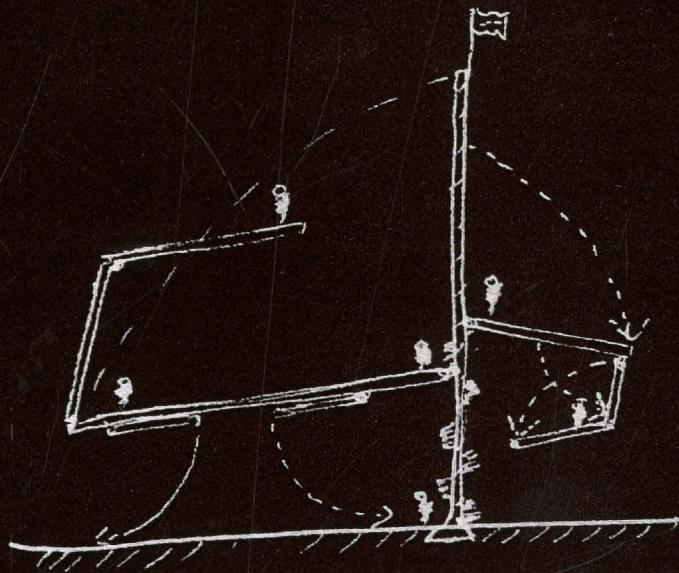
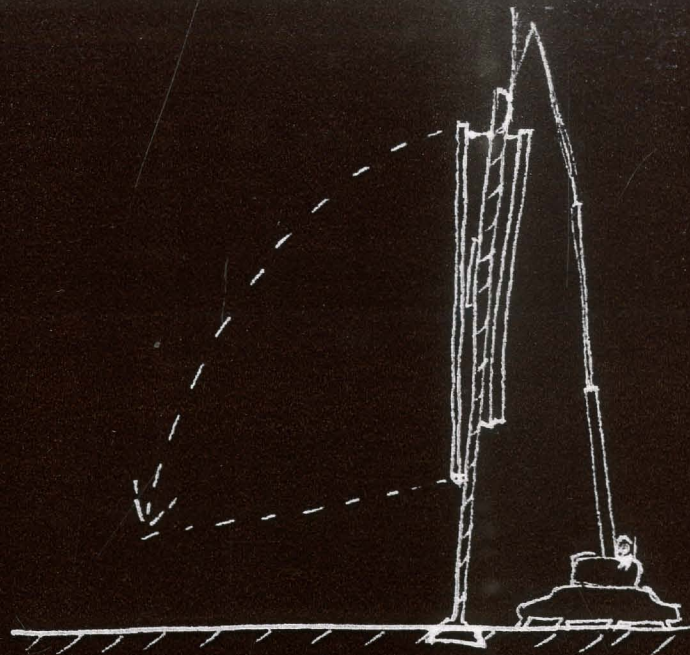
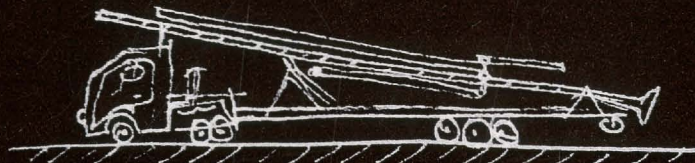


PHASE C



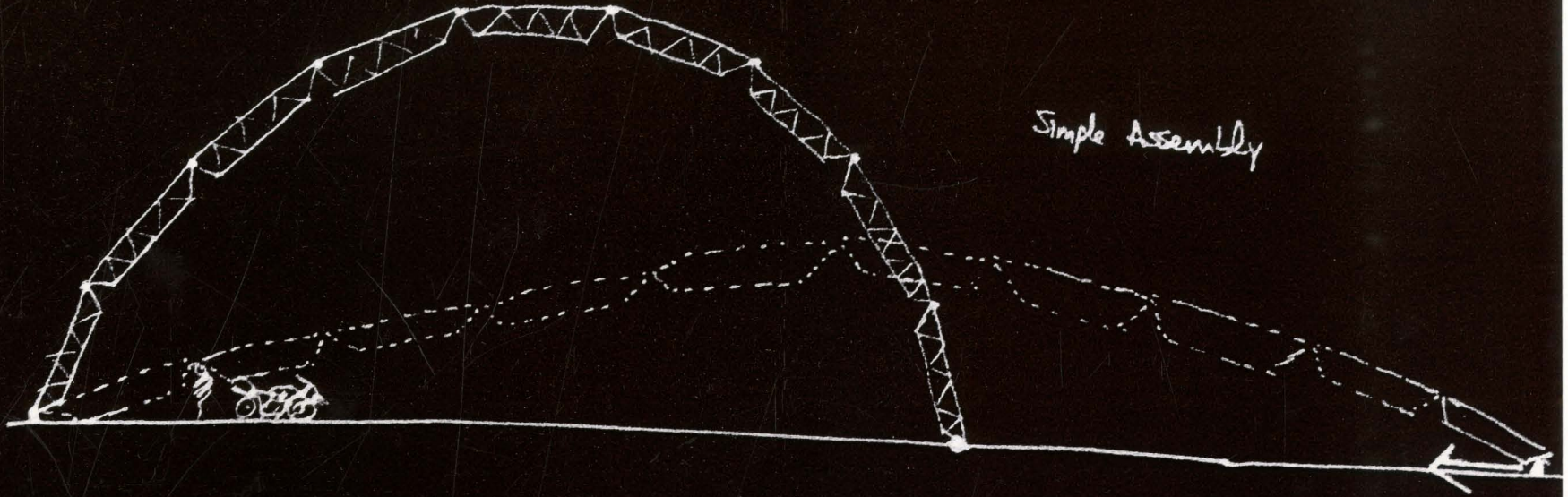
PHASE D

The same experimentation as before with container-like deployments, I tried more as well, but still I felt it was still conventional with nothing new and exciting so I decided to go for MODELS EXPERIMENTATION.





Elements on the truck



Simple Assembly

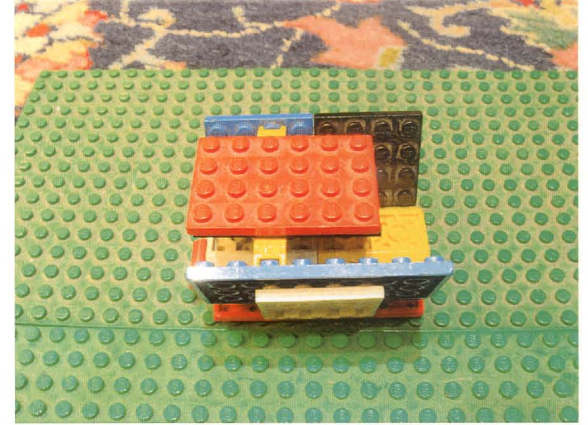
## Models Experimentation



This is the truck that carries my deployable units

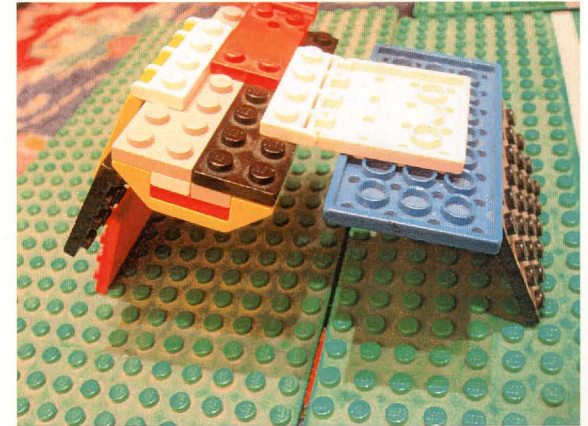
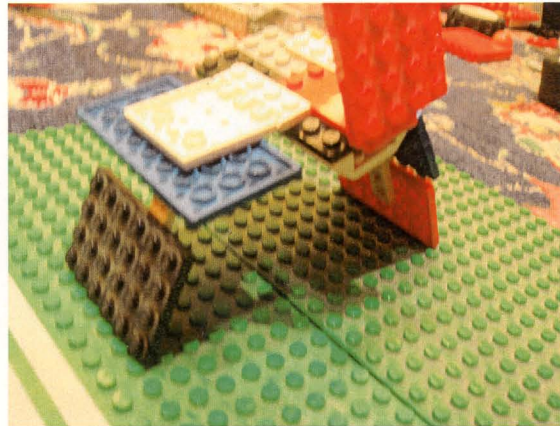
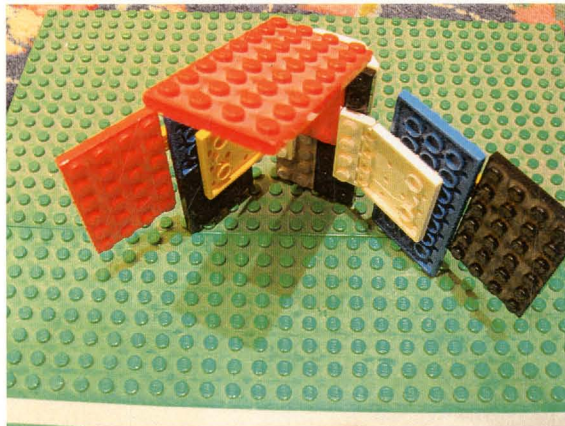


The truck here is carrying a deployable unit to an event



The unit is off the truck now and ready for deployment

Different forms can be taken according to the need



## After Settling in a Site, Quick Adaptation Is Next

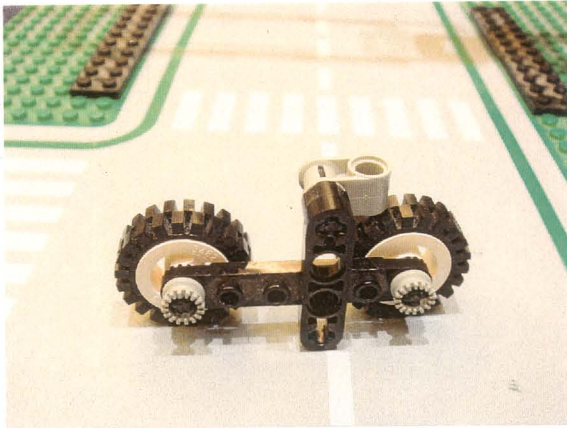
In open building terms the flexibility can be varied depending on which level it is being created for, the infrastructure can be relatively fixed, the building frame stable but replaceable, the building skin easily revised and the internal partitions quickly relocated. In this way architecture that relates to the place in which it is located, but still allows for the significant modification in its use can be created.

Movable elements that have the capacity to change a space's function also undeniably alter its character, both in the sense that it becomes physically different and also that it realizes its potential in a way that more conventional architecture cannot. Nevertheless, though the ambience of the space may change it is rare that this will alter the character of the entire building. This opportunity to affect the image or identity of architecture is a real possibility for transformable design and it can be desirable for a range of reasons. For example, the building may need to establish different identities when it is open and when it is closed to the public, or it may need to change its image depending on the nature of the activity that is taking place inside.



# THE DRIVING FORCE

THE POWER OF THE SUPERBIKE WILL MOVE THE  
ELEMENTS AND REALIZE THE TRANSFORMABILITY



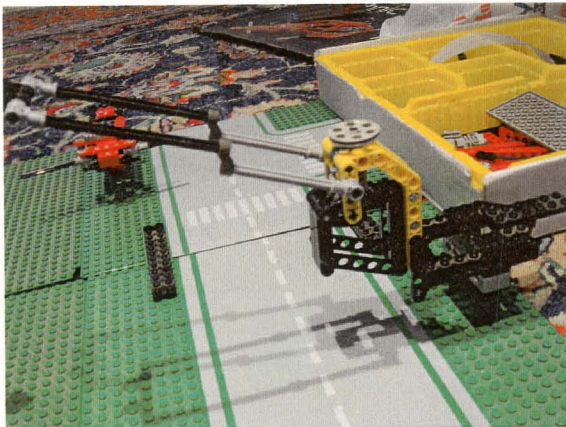
This is a mock-up of a superbike

Now, what if I use the enormous power of the superbike engine to make the bridge rise up and then using the same power in the opposite way making The Bridge lay down again?

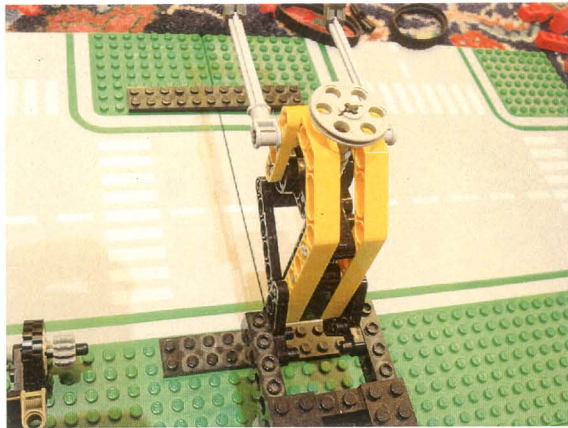
The superbike itself will be the dynamic element supplying the required power for mechanical movement to happen through special joints and belts attached to the axis of the rear wheel of the bike where engine power is transmitted via the chain.

The engine's ECU (Electronic Chip Unit) can be modified to give the maximum power and torque at low RPM and that is required for accomplishing such tasks that necessitate great amount of torque.

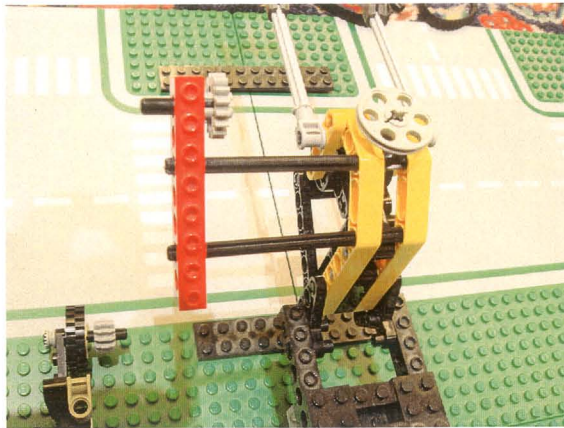
This is a mock-up as well of the bridge connecting both sites at the two sides of the highway



Enough with theory, let's flip the page and see how it works.

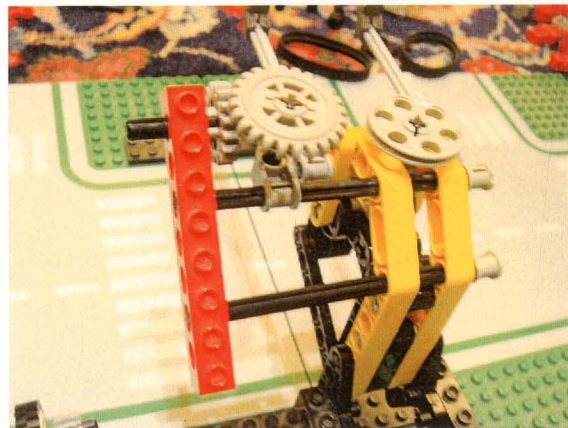


1

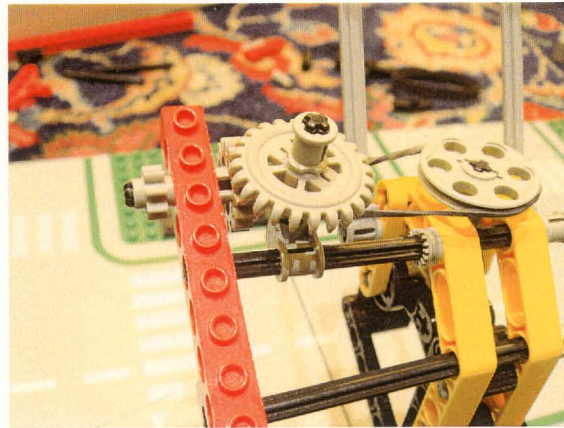


2

3

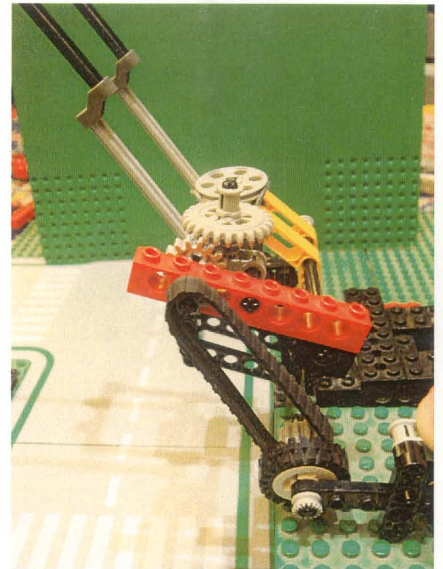


4





5

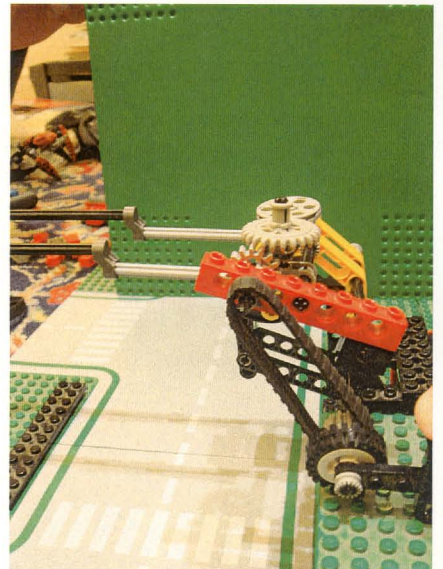


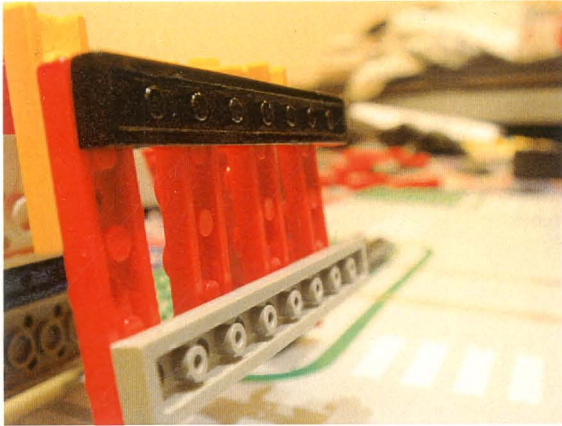
6

7



8





## Interaction with Highway

### Horizontally

As for direct interaction for passer-bys between the highway and my project, I will create a framing layer above the intervention that passer-bys will see the project framed with the speed effect that will build up the sensation.

During the night, this sensation intensifies; my scheme is to create light bulbs that shift faster than “you” as a driver on the highway, I got the idea when I passed by side works on the highway near Tripoli and there were light bulbs that shifted fast to indicate the road alteration, at that moment I got the excitement of revving the engine and chasing the light but I couldn't. The light bulbs switching timing system will be adjustable to create this sensation and excitement of chasing the light.

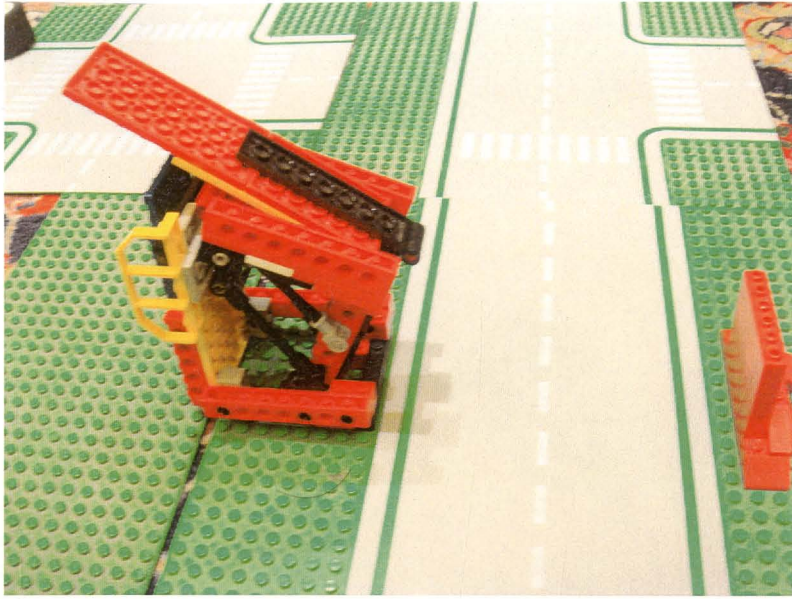
### Vertically

The deployed bridge over the highway will provide this vertical negotiation with passer-bys; it will connect the two banks of the highway and celebrate the events with motorcycles crossing on it,

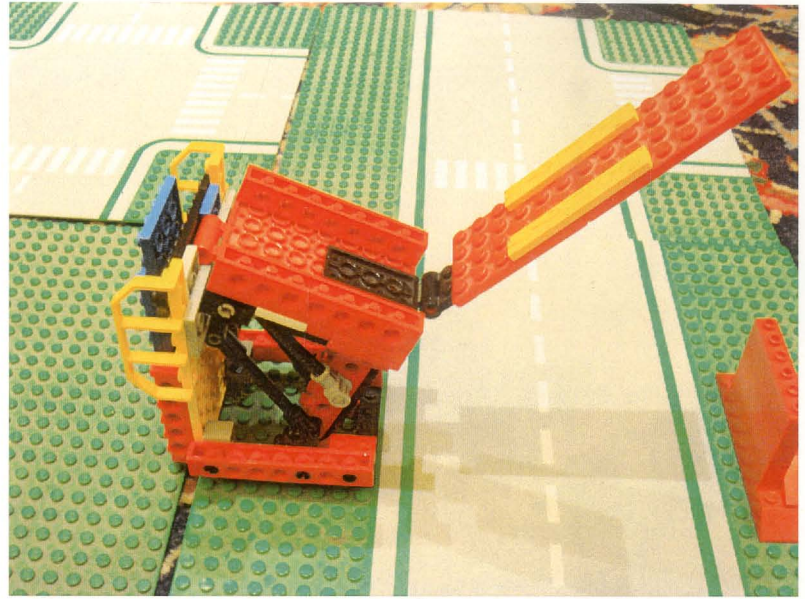
and it will rise and straighten up when needed to flare up the transformative and portable aspects of the intervention and promote it high in the sky.

### Inside

The interior would be covered with steel cladding so it would look like a giant inverted motorcycle engine cylinder. This way I create an atmosphere as if visitors are experiencing the motorcycle guts as they walk into the project with all movement happening outside.



1

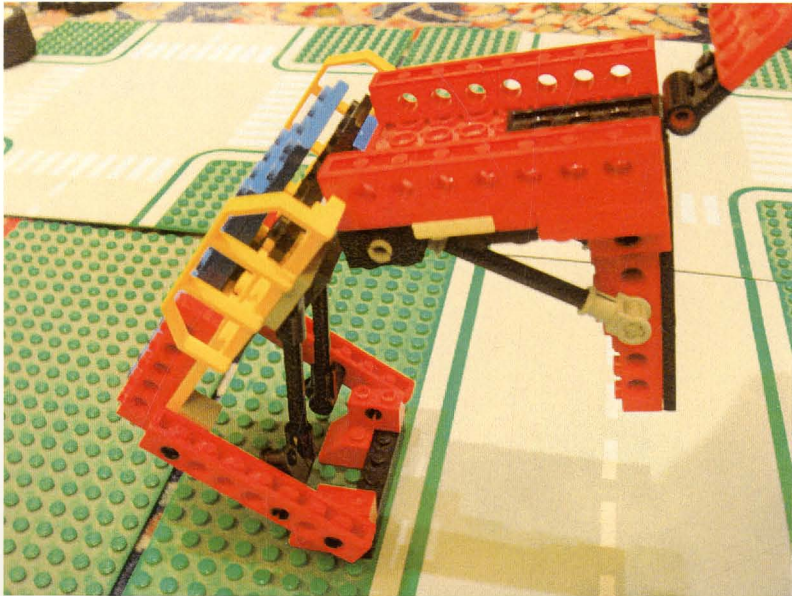


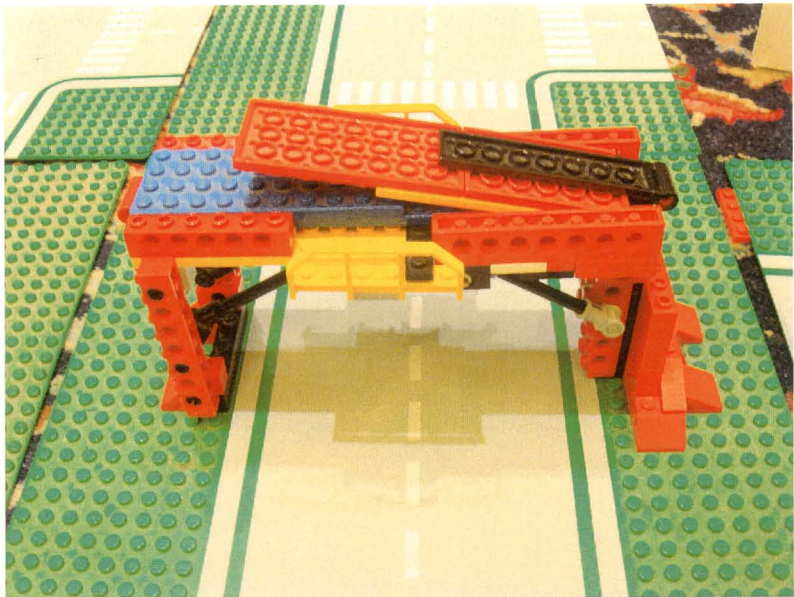
2

3

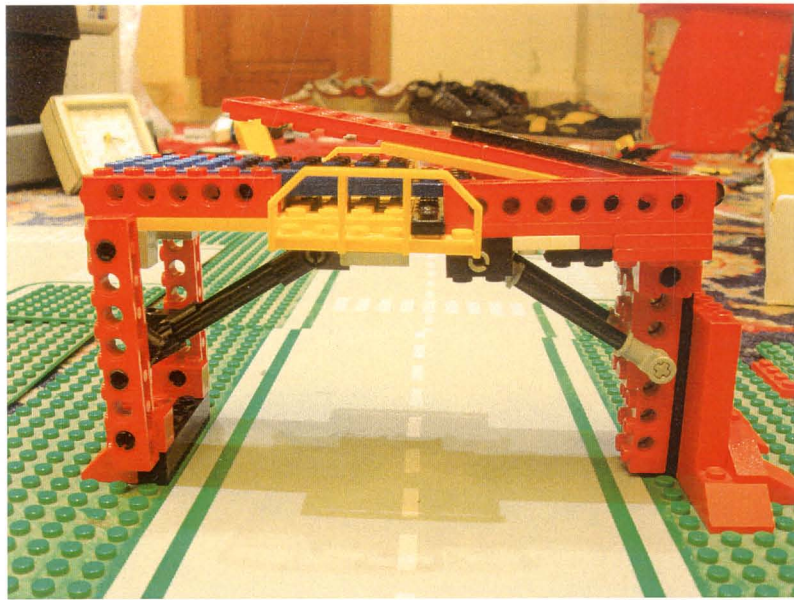
## The Bridge

4



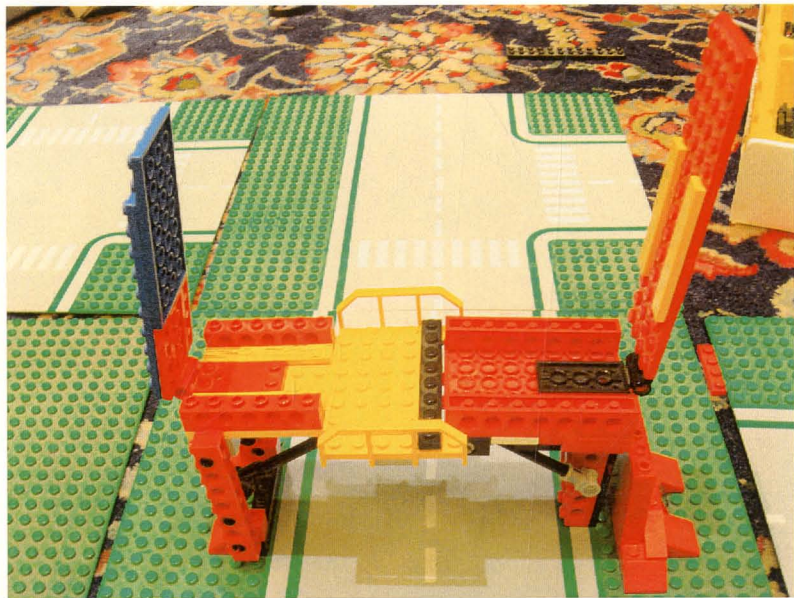


5

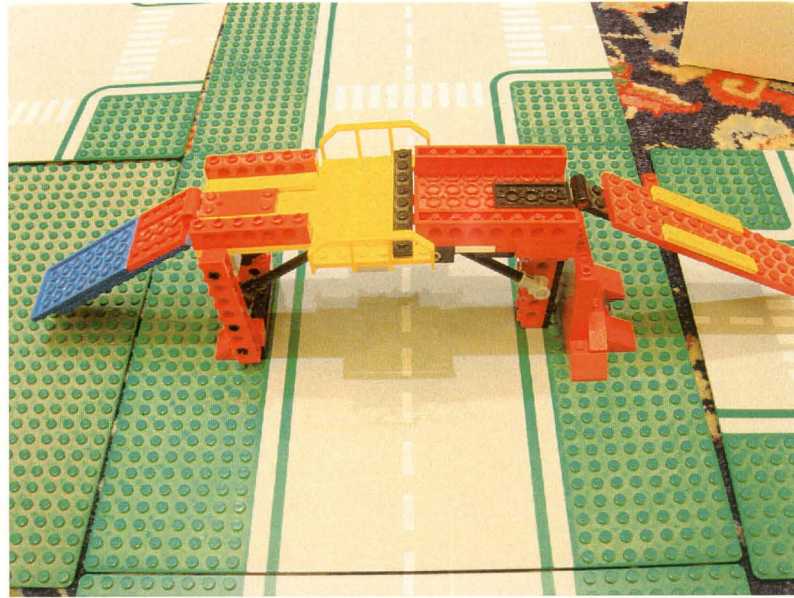


6

7

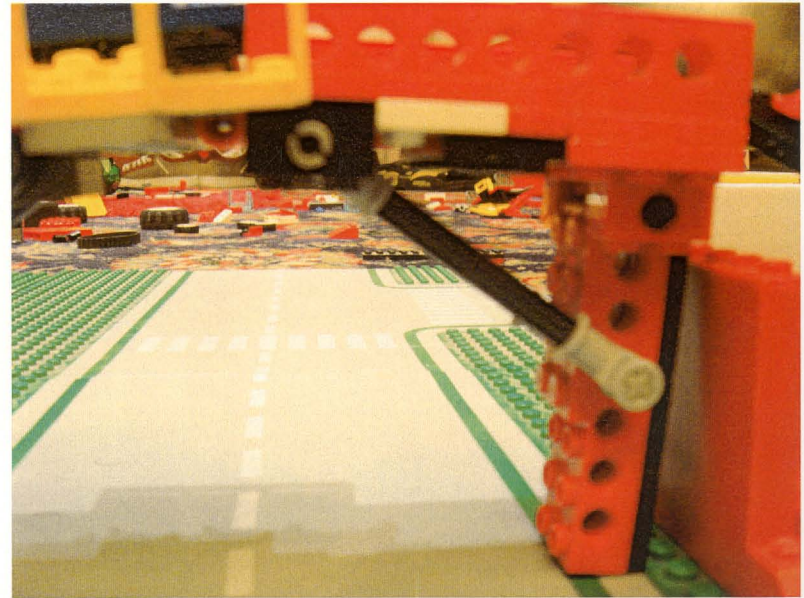
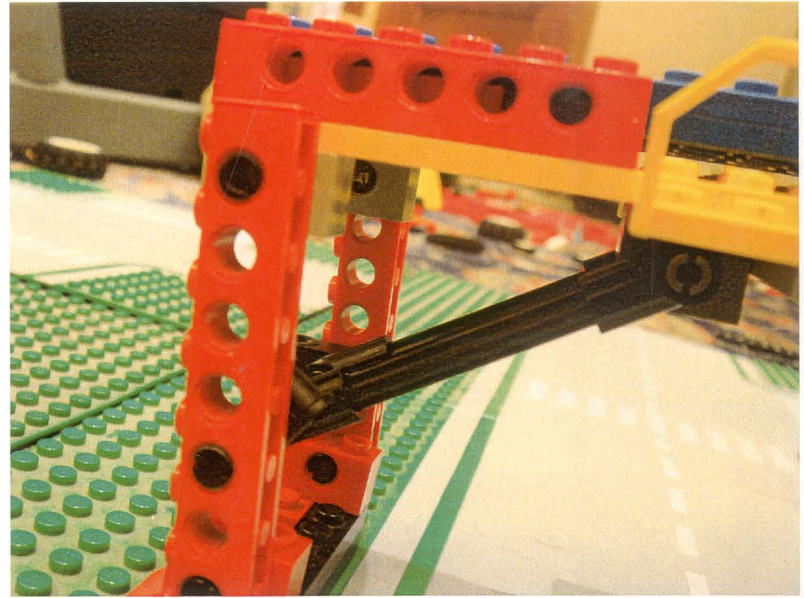
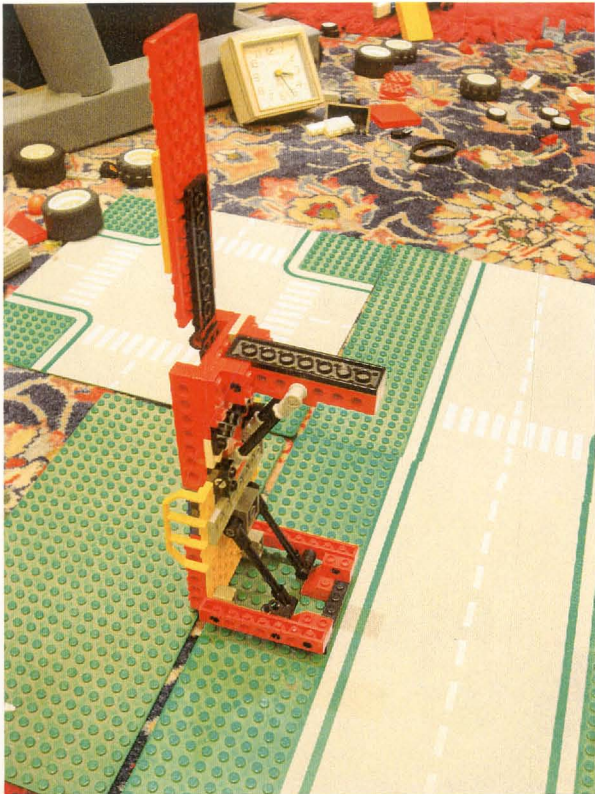


8



72

Raised position of the bridge overlooking the highway



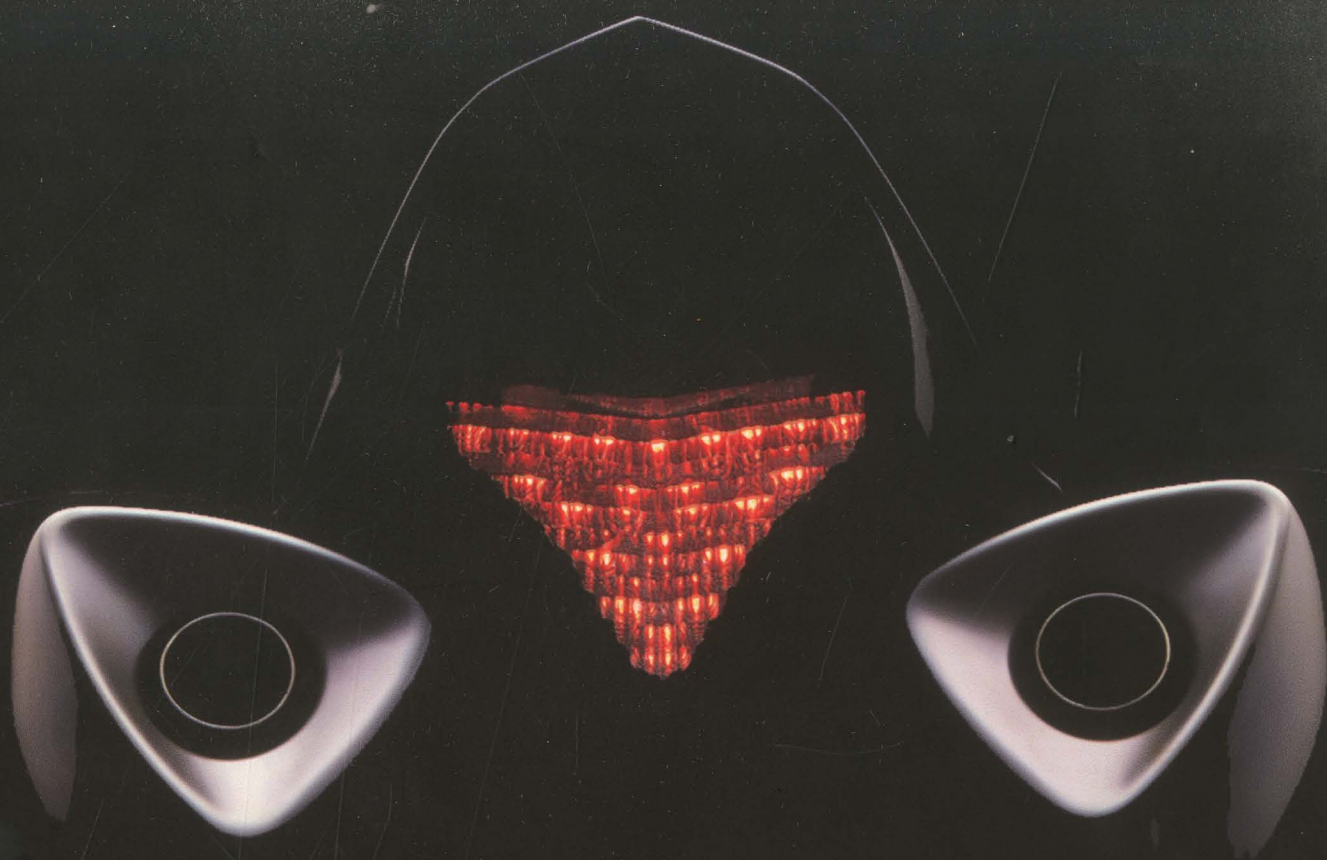




## References

- Bourne, Craig, Philosophical Ridings: motorcycles and the meaning of life, Oneworld Publications, 2007
- Deleuze, Gilles, Guattari, Felix, A Thousand Plateaus Capitalism and Schizophrenia, University of Minnesota Press, 1987
- Khan, Joseph, Torque (the movie), Warner Bros, 2004
- Kronenburg, Robert, Flexible, Architecture that responds to change, Laurence King Publishing, 2007
- Kronenburg, Robert, Houses In Motion, second edition, Wiley-Academy, 2002
- Kronenburg, Robert, Portable Architecture, Architectural Press, 1995
- Kronenburg, Robert, Transportable Environments, E & FN Spon, 1998
- Arcspace <[www.arcspace.com](http://www.arcspace.com)>
- Automobile et Touring Club du Liban <[www.atcl.org](http://www.atcl.org)>
- Federation Internationale de Motocyclisme <[www.fim.com](http://www.fim.com)>
- Guggenheim Foundation <[www.guggenheim.org](http://www.guggenheim.org)>
- Kawazaki Motors, Rymco HQ, Beirut, Lebanon
- Military Analysis Network <[www.fas.org](http://www.fas.org)>
- Suzuki Motorcycles <[www.suzukicycles.com](http://www.suzukicycles.com)>
- Zephyros Major, A Shovel Revival: A Motorcycle Manifesto, iUniverse inc, 2007





ARCH 508  
FALL 2008  
ADVISOR: KARIM NAJJAR