

## **ARCH 684 - DESIGN COMPETITION**

**DAVIDE PLANTERA**

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*The project for a metal pavilion in Washington Park, Chicago*

### **WASHINGTON PARK BRIEF HISTORY AND LOCATION**

Every project is supposed to take care of the history and present condition of a site and its community and Washington Park is a very peculiar site. In 1869 the Illinois State Legislature established the South Park Commission with the objective to locate a park in the southern part of the city. The member of the Commission hired the famous American landscape architect Richard Olmsted and his partner Calvert Vaux. They presented a master plan for the park in 1871. The first name of the site was South Park in an area that was at that time a flat prairie with a surface of 100 acres.

The Chicago Great Fire that started in the night between the 8<sup>th</sup> and the 9<sup>th</sup> of October 1871 delayed the realization of the plan that started few years later and was completed in 1880. Daniel Burnham's firm designed several buildings for the park, the most important are the Refectory and the Administrative Centre that now hosts the DuSable Museums of Afro-America history.

Over the years, Washington Park became a centre of activity for the wealthy and middle classes and many features were added including the lagoon Boat house (now demolished). With the centralization process, the population of Chicago, exploded to 500,000 in 1880 and to more than a million in 1890 and many significative facilities were planned by the Municipality.

The World Columbian exposition in 1893 contributed to the improvement of the city and of the area surrounding Washington Park. By this time the boulevards were intensely developed

and the close University of Chicago campus, founded in 1890, raised the importance of the area.

In the early 1930's an olympic outdoor pool was built and Washington Park became one of the first parks after Union to welcome and build facilities for the black community. Aquatic sports became a tradition at the park, although now the casting pond and the lagoon are the sole reminders of the emphasis on water.

From the 1950's both Washington and Hyde parks declined and in the early 1970's the park suffered a lack of maintenance. Chicago's Municipality was accused to discriminate the communities living in the South neighbours of the city; especially at night local gangs controlled the park. Nowadays the park is safer although Chicago Park District is developing a plan for the rehabilitation of the site.

The park is located between the neighbours of Hyde Park and Washington Park and Woodlawn and it's one of the 552 parks under Chicago Park District's management. Some people complain that the park is a sort of barrier that divides the South part of the city from the central and the northern ones. The park is split in two main parts by the criticized Morgan Drive that allows an horizontal crossing.

Nowadays the park is a meeting point for Chicago black middle class and it a very lively site especially on weekends. There are several amusement, baseball and tennis facilities and often the north east corner hosts Circus tents.

Several articles in local newspaper complain about the park conditions. Local residents complain often about the noise and the lack of parking related to outdoor events and concerts that have place, usually on summer, close to the northern border of the park and near the residential 51th street.

Even if the park has not the same importance and the same maintenance of the famous Millenium Park or Lincoln Park, the site is in good condition and a new performance pavillon can be very useful to raise the popularity and the appeal of the site in the same way Frank Gehry pavillon did in the prestigious Millenium Park along Michigan Avenue, not so far from Washington Park.

## THE PROJECT - CONCEPT AND PHILOSOPHY

After the industrial revolution metal became a very popular with a lot of applications. However after several episodes in which metal framed buildings were destroyed by the fire (London Crystal Palace etc.), metal was often concealed under masonry and concrete cladding until the development of fire-proofing coating. In the United States metal became popular because was the fastest and the cheapest way to design skyscrapers and soon the load bearing brick (or stone) wall was replaced by the steel frame. Chicago was very innovative in this process and the architecture of the School of Chicago, like Sullivan and Burnham are often called as "Fathers of skyscrapers".

In the project for the pavillon metal play a fundamenta role in the concept and in the design responding to the requirements of flexibility, efficiency.

The building is located in a historically important park and in one of most dynamic neighborhoods; the design should be sensitive to the context and the community.

The project is developed starting from the hypothetical conflict between nature and metal.

Metal often is not considered as a natural material but as something anti-ecological and toxic. This is basically an old-fashioned view of the metal materials due the fact that in the past metals were more common in industrial applications than residential architecture .

Every project is supposed to take care of the history and the identity of a site, but **who said metal is not organic?**

The intent of the project is to demonstrate that ***this conflict is not real*** and metal can be considered a good material for a sustainable design.

In the phase one of this conflict the pavillon wins. The building has a solid metal structure landed in the park like an alien object. The fly tower with its cubic shape has a very strong geometry emphasized by the brass-orange colour of the interior metal cladding. However the contrast is only apparent and as the time passes it turns in a stronger and friendly relationship. The vegetation infact grows from the ground and from the green rooves of the rear part of the building and starts to attack the architecture climbing the outer cladding grid that covers the entire fly tower.

The fractal grid is not a battle field but its a more romantic *interface* between the building and the nature. It's a cladding solution that seems to protect the building but at the same time it's perforated and helps the vegetation growing. Fractal geometry is as misterious as popular in nature and this geometry has been chosen in the design for its symbolic meaning. It's a surface contact between the human architecture and the nature of the park. The grid moreover creates a very peculiar series of shadows on the inner metal cladding both at the sunlight both with artificial light.

The pavillon will be located in the North East Corner and the traffic circulation is based on the esisting main ortogonal axis of 51th street and Cottage Street. To protect 51th street residents, the front of the stage looks toward South and the main entrance to the Pavillon area is located along the tangential Payne Drive that improve its interfacing role between the park facilities and the outer traffic. Beside the existing parking areas, new linear public parkings are located along the Payne Drive (both side) and along the South border of the 51th Steet, reserving the other side to the residents.

The stage area is located along the North-South axis also to avoid sunlight could bother actors and public.

The permanent chairs are fixed along a new artificial sloping hill. Behind the permanet seating area, the top of the green hill can be used for more informal seating such as lawn chairs and blankets. Temporary chairs will be located in the remaining paved space.

In the norther part of the pavillon there are the public facilities (washrooms and box office), the rear entrance for the actors and the workers, and a ramp to the basement and to the storage area. It's possible for cars and trucks to reach the ramp from Payne Drive going along a trail in the park.

The main aim of this project is to combine both technical and design potentialities of the metal, maximizing the metal appeal and the technical features.

The use of metal is not only the design. Metal plays an important role also in the mechanical implementation. The stage can be closed with suspended motor controlled panels that can be lowered from the top along metal guides. With this system the pavillon has two configuration: open and closed. During the performances, in the "open configuration", the panels cover the stage from the rain and the sunlight. On winter time the "closed

configuration" makes the building vandal proof and the panels can be decorated with advertising images. The stage is divided in automatic platforms so the stage is very flexible and allows several functions: live performance, theatre, cinema. In winter time the stage and the large basement are comfortable place for rehearsal and exhibitions.

Each platform can be moved separated according to the scenography needs or to create the space for an orchestra pit. It's possible to low the stage platforms to load the stage equipment directly from the basement. The basement hall can be used on winter time as a rehearsal room or for exhibitions. People can access the basement directly from the lateral ramp. A false ceiling in each room and the basement area can host implants for heating-cooling system and electric engines for the stage equipment. Public washroom and kitchen are detached as a separated design element. They both have the green roof and the kitchen building is partially covered by the green hill at the rear of the permanent seating area.

The pavillon has three main parts, the stage, the fly tower and the office building.

The stage is a semi-public public space, when it's open is totally public, when it's closed only a half is accessible to the public. The geometry of this space is very simple all the mechanical and electronic implementations can be easily removed during the winter time when the pavillon is closed. The fly tower has a direct access to the basement and a sound proof elliptical wall.

The public area in front of the stage can host about 300-400 permanent seats that are located along an artificial sloping green hill. The artificial hill, 6 meters high, create a more intimate atmosphere, protecting the public and the stage from the wind and concealing the pavillon from the large open field that goes toward South and from the other activities of the park (baseball, football...). This approach goes against Olmsted intention: he in fact designed a park as an open field, a flat green area perceptible without break as an open space.

In this project there's nothing particularly new or unusual about using steel and aluminium in the construction as build materials. It's a simple project and the main ambitions are to improve the metal appeal and to create an organic architecture that can dialogue with the nature in a dynamic way.

The main structure is made of stainless steel frame based in a modular grid. Prefabricated metal panels (2'-8" thick sandwich panels) with a rigid insulation are supported but the steel

frame and an aluminium cladding covers all the structure. In the fly tower this layer 1/2" thick is painted with an orange/brass colour and it's covered by an external aluminium silver grid. All aluminium materials are anodized to improve the corrosion resistance. Aluminium is a non-toxic material and it seems the best choice because of its high resistance against the aggressive outdoor environments.

In this project metal and prefabrication features promise also some important practical advantages, a faster and easier construction of the building and a good relationship between the quality level and the cost of the works.

Moreover flexibility during the design phase means greater flexibility during the realization, not only in the concept and in the geometry but also in the budget. The same project designed according to a budget can be easily modified if the available budget is smaller, changing for example the colour of a metal element or the finishing. Metal materials in fact have very different prices and very different levels of quality and standards. This kind of modifications are very difficult in traditional concrete building; the changes in a concrete structure once designed are much more complex and expensive. In the building site metal parts are assembled often by screw joints and often it's easy to "take down" metal pieces if a wrong design occurs.

Nowadays the metal industry is very advanced, the market offers a lot of different metal products, much more colours than a few years ago, a lot of finishing. Although metal is still the main material for industrial buildings, nice decorative elements are becoming popular and affordable making metallic materials suitable also for private housing design.