The Garden at Parc de la Villette
The Design of Parc de la Villette

The Parc de la Villette (or as it is simply known, la Villette) is a public park in the 19th Arrondissement in the north eastern part of Paris. The design of the park was the winning entry of a competition for a design to redevelop what had previously been a cattle market into a 25 ha park, as part of an urban redevelopment project. It is a vibrant, well-used area, and on any given day, one can find many diverse groups of people walking, cycling, picnicking, playing music, using the playground areas and enjoying the free public facilities. Below is an aerial view from Google Earth of the park in its completed form.
Mathematical aspects of the design

The park forms an important work in the Post Modern school of Deconstructivism (also referred to as Deconstructivist) architecture. Tschumi designed what he referred to as the largest discontinuous building in the world, placing form ahead of function. He based his design on a grid, with points, lines and surfaces superimposed onto this imaginary grid. The diagram below shows the ideas basic to the design.

The area under design was divided using a rectangular grid consisting of lines placed at 120 m intervals. Onto this grid a series of points, lines and surfaces was superimposed, forming the structure for placement of the design that we see today. According to Tschumi, this structure “provides a comprehensive image or shape for an otherwise ill-defined terrain. The regularity of routes and positioning makes orientation simple for those who are unfamiliar with the area” (Tschumi). Mathematically, a rectangular grid is a relatively simple structure, familiar to most people in many contexts, including map reading. This enables visitors to create a visual memory of the basic structure of the park making it relatively easy to find one’s way around the site.
The diagram below shows a computer model of the site, including the huge Science Museum, the existing Grande Hall and other structures that form part of the park.

The points

Each point of intersection of the grid lines gives the location of a red metal folly, some with a variety of functions (restaurants, offices etc) and some pure follies with no practical function at all. Each is essentially a 10 x 10 x 10 meter cubic structure or a three story construction that has been modified to suit the specific needs of the overall design (Papadakis, 1988). In addition the follies were intended to be a symbol of the park, and basic to the mental associations that people would develop about the park. In total we find 26 follies, with the Science Museum, Grande Hall, occupying some of the remaining grid intersections.

Central to the design were ideas about the allocation of space and form on a site. These were based on Tschumi’s use of what he referred to as ‘programmatic deconstruction’, which involved the dismantling of conventional ideas of architecture (Papadakis, 1988).
The first diagram shows a very simple representation of the distribution of space on the usual site, with a proportion of ‘building’ a proportion of covered area and a (frequently relatively large) proportion of open space. In the second diagram, these three parts undergo a process of what Tschumi refers to as ‘explosion, fragmentation and deconstruction’, followed by, in the third diagram, the ‘re-composition’ of these elements. (Papadakis, 1988)

The re-composition of the 3 elements takes place ultimately on the coordinate points of a grid, as seen in the third diagram, in varying combinations of building, covered space and open space. In the design of his follies, Tschumi blurs the boundaries of the three elements within each folly, creating the 26 distinctive follies. Some have cylinders and other geometric forms attached, some are cuboids, some are structures with combinations of enclosure and open metalwork and others are only frameworks with no solid walls or covering at all. The follies are very visible alongside the Canal d’Ourcq, while others are concealed amongst the trees or other structures on the site. Some serve different functions, including an observatory, a bandstand, entrances to a submarine and to a music centre, workshops, a first aid post and a burger restaurant, while some are follies in the true sense of the word, serving as sculptural constructions with no practical function.
Some of the follies are shown below, highlighting the deconstruction of form and function that has taken place. In the structures shown one can see a combination of different proportions of enclosed space and covered space to open constructions in varying proportions.
The Lines

Two major perpendicular axes, running parallel to the orthogonal grid cut through the park, both almost parallel to the grid. These form major walkways providing a backbone for the park. The walkway that runs alongside the Canal d’Ourcq is an elevated steel walkway, with a walkway below it as well. Pipes and services along with the steel used in the construction lend an industrial feel to the site. The perpendicular straight walkway is covered by a wave like strip of corrugated iron which adds curves to the otherwise linear design. These pedestrian walkways (below left) give the park a strong linear focus reminiscent in some ways of the formal French and Italian Renaissance gardens.
A curved walkway threads its way through the park, intersecting the linear walks at various points and passing through the various gardens that form part of the park. Its meandering path, tightly curved in places, reminds one of the English landscape gardens of the 18th century. In one of the two larger quadrants formed by the walkways, a non-orthogonal cross created by two avenues of trees can be seen in an aerial view. The one part of the cross creates a walkway from the front of the Grande Hall and the main entrance on this side of the park, to the Zenith Building on the adjacent boundary. One of these lines forms a tangent to a circle of trees which, incomplete in parts, straddles the Canal d’Ourcq and disappears beneath the dome area and the
formal garden. A series of parallel lines close to the boundaries near the Grande Hall reiterate the lines of the grid, in the first with parallel rows of trees and in the second area with parallel strips of coloured paving in front of the Grand Hall.

In the photographs below, the linear structure of the walkway can be seen cutting across the length of the park. This is the walkway running the length of Canal d’Ourq, with two of the follies along this axis in the background.

The presence of the huge spherical geode outside the Science Museum provides a very marked contrast to the straight lines of the pedestrian walkways, the huge rectilinear museum and the mostly angular structure of the follies. It is amusing to note the effect it has on the straight lines in its reflective surface.

There are other places where the curved paths intersect with the linear axes and this function of the pathways seems to reflect the contrast of the two mathematical forms, with the straight linear paths apparently used for direct targeted movement through the park from one area to another while the curved 'Path of Thematic Garden intersects the coordinate axes at various places, providing unexpected encounters with unusual aspects of domesticated or “programmed” nature’ (Tschumi).
The Surfaces

The grassy and paved surfaces superimposed on the grid are utilised in a variety of ways for play, sports fields, markets, entertainment etc. Many of these surfaces are quite geometric, and this ties in with the overall geometric theme of space, points and lines. The area outside the Grande Hall is paved with stripes of two-tone paving materials and along the adjacent boundary, trees planted in parallel lines repeat the linear motif. The shapes of the surfaces are determined by the curved and straight lines of the pedestrian ways and the circular and linear plantings that form part of the planting design.

Geometric shapes are found in many different areas around the park. A few of these are shown below:
Thematic Gardens

There are a number of thematic gardens in the Parc de la Villette, with the meandering curved path passing by each of them. The thematic gardens include the following:

Jardin des Miroirs – Garden of Mirrors

An unplanted area with 28 apparently randomly place slabs all facing approximately the same direction. When viewed from the park, this garden looks rather like a cemetery of large dark grey headstones from the walkway, but on entering the area, one finds the back of each mirrored, creating a rather eerie dreamlike effect, with trees and oneself reflected in the mirrored surfaces.

Jardin des Vents et des Garden of Winds and Dunes

This is a very creative and fun play area for children and was being very well used when I visited. The curves of the dunes provide an interesting surface for children to play. The ‘cycling windmills’, loudspeakers and curved surfaces were a real hit.
Jardin de la Treille – Trellis Garden

This area is laid out over eight terraces, with pergolas for plants to climb through. The effect emphasises the area as a 3 dimensional space. This effect is noticeable in other parts of the garden where the follies and structural walkways elevate the design very firmly into 3 dimensional space.

Jardin des Bambous – Bamboo Garden

This is a sunken garden, 6 metres below the level of the surrounding park, with approximately 30 different species of bamboos growing here. Three metal walkways allow one to view the garden from bridges and one can enter the garden and walk down paths through the groves of bamboos. The outline is curved, and as in other parts of the park, the walls, bridges, paths and paving surfaces all show quite strongly linear features contrasting with the structural curves.
Jardin des Voltige – Garden of Movement

This is one of the thematic gardens with equipment for movement and balancing. It was well used by adults building body strength and enjoying the balancing equipment on our visit.

Jardin des Frayeurs Enfantines – Garden of Childhood Fears

This garden runs through a forest of blue spruces and silver birches, with 18 metal posts alongside the path emitting weird music. This was also not operating in July 2008 when I visited but at twilight nonetheless, it did have something of a sinister, fearful feel about it.

Jardin du Dragon – Dragon Garden

This creative garden with a large climbing apparatus in the shape of an 80 m dragon with a huge slide for a tongue was well fenced off from access in July 2008 when I visited. No reasons were displayed for the closure.
Summary

The mathematical ideas used as a basis for the design of the park are very interesting, and it is fascinating to observe the effects that this has had on the experience that visitors have in visiting la Villette.

Tschumi’s focus was on deconstructing conventional architectural conventions. His one focus was on creating the largest discontinuous building in the world. I do not think that this is a conscious experience of most who visit the park, with most likely to view the site as land dotted with the red follies. People I spoke to on my visit were very aware of the linear axis cutting the park and also associate their park with the follies as a central theme. The mathematical clearly-defined pedestrian walkways enable people to become familiar with a very large public area with relative ease. The emphasis of the two main axes which provide four main well-defined entry and exit points provides a clear central focus to the structure. His design has definitely fulfilled his planned iconic association of the park with the vibrant red follies which is the factor that people use to identify this park from other parks, with comments like ‘…..oh, you mean the one with the red follies’.

The different areas of the park are very well used, with a number of children exploring the curved path on cycles, and numerous children and adults using the thematic gardens. The huge grassy areas are well utilized for sport and relaxation by individuals, school groups, young adults and teenager and groups picnicking and relaxing. The paved surfaces were used not only for walking but for groups practising break-dancing, some skateboarding and rollerblading.

The design of the park has necessitated constant security and supervision of some areas – very successful in the play areas, where designated ages are kept in appropriate areas, yet less successful in other areas. For example the delightful Bamboo Garden which is sunk well below the level of the surrounding land and planted with a variety of bamboo thickets, has become an ideal area for undesirable characters to engage in illicit drinking and drug-taking. When revisited in the early evening this area felt very unsafe, even with security guards checking it occasionally. The security of the park necessitates a contingent of such guards. The follies themselves are also not without problems with vandals having stripped off the panels of some parts of a small number of follies and some of the surfaces, particularly those exposed to integrated water features deteriorating.

In general however, the park appears as a vibrant example of a well-used, pleasant area for Parisians to escape to. The division of the park into areas, by the grid structure and the walkways has provided a large variety of areas for a multitude of activities. In doing this, the basic mathematical design of the park has lent much to the success its and despite its critics, the park is much loved by most Parisians who use it.

References

New York: St Martins Press.